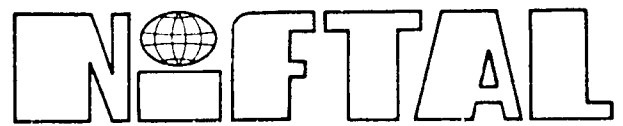


RHIZOBIUM GERmplasm RESOURCE

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UNIVERSITY OF HAWAII

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

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THE RHIZOBIUM GERMPLASM RESOURCE AT NIFTAL

CATALOGUE OF STRAINS

(1st Edition, 1984)

Jake Halliday and Padmanabhan Somasegaran  
University of Hawaii NIFTAL Project and MIRCEN

## DEDICATION

This catalogue is dedicated to our senior colleague,  
Dr. Joe C. Burton, in recognition of his generosity over the years  
in sharing his elite strains of rhizobia with the research community worldwide.

## ACKNOWLEDGMENTS

The richness of this collection, with its diverse array of rhizobia, reflects  
the continuing effort of a worldwide network friends of the NifTAL Project  
dedicated to putting Rhizobium to work for the benefit of mankind.

We are indebted to all our colleagues and their institutions for their  
contributions of cultures and root nodules to our laboratory.

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## INTRODUCTION

### GENERAL

NifTAL was established at the University of Hawaii, under a USAID contract, to conduct research, provide services, and administer training on aspects of the legume-Rhizobium symbiosis. These activities support development of appropriate technologies based on biological nitrogen fixation to enable small farmers in developing countries to produce increased amounts of food with reduced dependence on costly nitrogenous fertilizers.

### NATURE OF THE COLLECTION

A comprehensive Rhizobium collection was assembled at NifTAL as a first step in the selection of superior strains to be recommended as inoculants for economically important legume crops. Initially NifTAL concentrated on rhizobia for tropical grain legumes, with a secondary interest in strains for tropical pasture legumes. Recently the collection expanded in support of NifTAL's current mandate to address the Rhizobium needs of any leguminous species with a role in development. Thus strains of Rhizobium for legumes used at high or low elevations in the tropics for grain, forage, fodder, green manure, firewood, erosion control, shade, ground covers and many other purposes are included.

### PURPOSE OF THE CATALOGUE

The usefulness of a large, soundly maintained collection of strains of Rhizobium from a wide array of host species and from diverse geographic origins clearly extends far beyond NifTAL's specific purposes. Thus this catalogue is designed to provide other potential users with access to the Rhizobium Germplasm Resource held at NifTAL.

### STRUCTURE OF THE CATALOGUE

This catalogue is generated directly from the data base retained for each of the strains of Rhizobium in the collection. Thirty two pieces of information (fields) make up the record for each strain and can be generated in a form similar to a common 8 x 5 record card (see Appendix I). Given the size of this collection, it is not practical to catalogue the complete record for every strain. We recognize, however, that the catalogue would be more useful if as much information as possible is included for some of the rhizobia for the more important legume species. Thus the catalogue has three main sections.

Section A gives complete data for strains of Rhizobium tested as inoculant for eighteen agriculturally important leguminous species. These strains correspond to those being field tested in the International Network of Legume Inoculation Trials (INLIT).

Section B gives an abbreviated profile of strains of Rhizobium tested as inoculants for some thirty additional legume species attracting attention for potential use in development programs.

Section C lists all of the strains of Rhizobium in the collection, giving only the most important source and test data.

### HOST INDEX

Within Sections A, B, and C, the strains are listed in numerical order. To assist users who wish to locate strains by host of origin, an alphabetical cross index is provided (Section D).

## COLLECTION STANDARDS

All listed strains have been authenticated as rhizobia by plant infection under bacteriologically controlled conditions. Cultures are preserved in lyophilized form in sealed glass ampoules.

## RHIZOBIUM CULTURE AND INFORMATION SERVICES

Strains of Rhizobium are available from NifTAL, and are dispatched as lyophilized cultures in sealed glass ampoules. Instructions for opening the ampoules and regenerating the cultures are mailed with each order. Complete records on any strain in the collection are available on request. Additionally, users with special interests can request a search of our data base for strains with particular backgrounds, or characteristics.

## CONTRIBUTIONS TO THE COLLECTION

The Curator encourages submission of strains of Rhizobium for legumes not presently represented in the collection. Strains with special traits, such as high tolerance to particular stresses, are welcome irrespective of whether the host legume is represented in the catalogue. Donors should contact the Curator, who will send import permits and mailing instructions. Donors should try to provide as much information as possible for completion of the standard strain record (Appendix I).

## PERMANANCY OF THE COLLECTION

The Rhizobium Germplasm Resource at NifTAL was established with USAID contract funds. The University of Hawaii is preserving the collection in perpetuity as a commitment with UNEP and Unesco, under the Microbiological Resources Center (MIRCEN) concept. The Rhizobium Germplasm Resource at NifTAL is a member of the World Federation for Culture Collections (W FCC) and cooperates with other culture collections.

## NOMENCLATURE

The genus Rhizobium has been divided recently into Rhizobium and Bradyrhizobium. There is still active discussion of the merits of this change and of the aptness of the new species names for rhizobia. In this catalogue, the word Rhizobium may be read to mean Rhizobium or Bradyrhizobium, depending on the readers acceptance and understanding of the new taxonomy.

## REQUEST FOR INFORMATION

The data base from which this catalogue is derived is under continual revision and update, and the submission of additional information about any of the listed strains is encouraged.

## DATA BASE MANAGEMENT SYSTEM

Data are managed by microcomputer using dBASE II software (Ashton-Tate) and several tailored programs. This system is described in "Microcomputer-based data management system for a large microbial culture collection" by Jake Halliday and Padma Somasegaran (available from NifTAL).

## Copyright

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Such permission is usually given.

Section A

Full records of strains of Rhizobium for economically important  
tropical legumes.

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 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 82  
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Rhizobium strain TAL 82	Parent host : Leucaena leucocephala	Subfamily: Mimosoideae
	Common names: haole koa, ipil-ipil	Uses : multi-purpose
Receipt by NifTAL 12/22/75	Courtesy of : NifTAL Project	From : Dr. T.J. Wacek
Form received slant	Collected : Paia, Maui, Hawaii	cultivated garden site

Fast/slow grower : fast	Host for authentication : Leucaena leucocephala.....	Effectiveness : mod. effective
Acid/alkali producer : acio	Other host tests :	
Culture form : lyophilized		
Last purity check : 1984		

Comments : Now known to be less effective than TAL 582 and TAL 1145 in sand jars and less competitive than these strains in field trials.  
 This strain also known as : NifTAL original Collected in : Hawaii, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 102  
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Rhizobium strain TAL 102	Parent host : Glycine max	Subfamily: Papilionoideae
	Common names: soybean	Uses : grain/oil seed
Receipt by NifTAL 1976	Courtesy of : USDA, Beltsville, Md, USA	From : Dr. D. Weber
Form received slant	Collected : Florida	no site information

Fast/slow grower : slow	Host for authentication : Glycine max.....	Effectiveness : fully effective
Acid/alkali producer : alkali	Other host tests :	
Culture form : lyophilized		
Last purity check : 1984		

Comments : Best competitor for nodulation on soybean in mixed inoculant studies containing TAL 379 and 377. Fully effective on G. max cvs. Orba, TGM 80, Davis, and Jupiter. Belongs to serogroup 110.  
 This strain also known as : USDA 110, IITA 18 Collected in : Florida, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.



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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 169

Rhizobium strain TAL 169 Parent host : Vigna unguiculata Subfamily: Papilionoideae  
Common names: cowpea, caupi, frijol Uses : grain legume  
Receipt by NifTAL 1976 Courtesy of : Nitragin Co., USA From : Dr. J.C. Burton  
Form received slant Collected : 1966 in Wisconsin, USA no site information

Fast/slow Host for authentication : Effectiveness :  
grower : slow Macroptilium atropurpureum..... fully effective  
Acid/alkali Other host tests :  
producer : alkali Lablab purpureus..... fully effective  
Culture Glycine max..... mod. effective  
form : lyophilized Vigna acontifolia..... fully effective  
Last purity Arachis hypogaea..... fully effective  
check : 1984

Comments : Strong cross-agglutination with TAL 309 (CB 756).  
Broad spectrum strain; moderately acid tolerant.  
This strain also known as : Nit 176A22 Collected in : Wisconsin, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 173

Rhizobium strain TAL 173 Parent host : Vigna unguiculata Subfamily: Papilionoideae  
Common names: cowpea, caupi, frijol Uses : grain legume  
Receipt by NifTAL 1976 Courtesy of : Nitragin Co., USA From : Dr. J.C. Burton  
Form received slant Collected : IITA, Nigeria, 1975 no site information

Fast/slow Host for authentication : Effectiveness :  
grower : slow Macroptilium atropurpureum..... effective  
Acid/alkali Other host tests :  
producer : alkali Crotalaria juncea..... mod. effective  
Culture Vigna unguiculata..... fully effective  
form : lyophilized  
Last purity  
check : 1984

Comments : Nodule from V. unguiculata cv. Ife Brown

This strain also known as : Nit 176A30 Collected in : Nigeria

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 182	Parent host : Phaseolus vulgaris	Subfamily: Papilionoideae
	Common names: bean/kidney, pinto	Uses : grain legume
Receipt by NifTAL 1976	Courtesy of : NifTAL Project, Maui, Hawaii	From : Dr. T.J. Wacek
Form received slant	Collected : Paia, Maui, Hawaii	no site information

Fast/slow grower : fast	Host for authentication : Phaseolus vulgaris.....	Effectiveness : fully effective
Acid/alkali producer : acid	Other host tests : Vigna unguiculata.....	ineffective
Culture form : lyophilized	Crotalaria juncea.....	ineffective
Last purity check : 1984		

Comments : Sensitive to 4 degree C storage in peat inoculants. Cross-agglutinates with CIAT 57 and Nit 127K17.  
 Most effective of 9 strains (Pacovsky, et al, 1984).  
 This strain also known as : NifTAL original Collected in : Hawaii, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 209	Parent host : Vigna radiata	Subfamily: Papilionoideae
	Common names: mungbean	Uses : grain legume
Receipt by NifTAL 1976	Courtesy of : USAID, Washington, USA	From : Dr. L.R. Frederick
Form received nodule	Collected : Thailand	no site information

Fast/slow grower : slow	Host for authentication : Macroptilium atropurpureum.....	Effectiveness : effective
Acid/alkali producer : alkali	Other host tests : Crotalaria juncea.....	fully effective
Culture form : lyophilized	Vigna unguiculata.....	fully effective
Last purity check : 1984		

Comments :

This strain also known as : NifTAL original Collected in : Thailand

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 309	Parent host : Macrotyloma africanum	Subfamily: Papilionoideae
	Common names: Unknown	Uses :
Receipt by NifTAL 1976	Courtesy of : University of Sydney, Australia	From : Dr. J.M. Vincent
Form received slant	Collected : 1960 in Marandellas, Zimbabwe	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Macroptilium atropurpureum.....	effective
Acid/alkali	Other host tests :	
producer : alkali	Vigna unguiculata.....	effective
Culture	Lablab purpureus.....	effective
form : lyophilized	Crotalaria juncea.....	effective
Last purity	Voandzeia subterranea.....	effective
check : 1984		

Comments : Broad spectrum isolate by the late D.O. Norris; strong cross-agglutination with TAL 169 (Nit 176A22)  
 Colony variation on YMA; Australian recommended strain.  
 This strain also known as : CB 756 Collected in : Zimbabwe

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 310	Parent host : Macrotyloma uniflorum	Subfamily: Papilionoideae
	Common names: horsegum	Uses : forage
Receipt by NifTAL 1976	Courtesy of : University of Sydney, Australia	From : Dr. J.M. Vincent
Form received slant	Collected : Coimbatore, India	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Macroptilium atropurpureum.....	effective
Acid/alkali	Other host tests :	
producer : alkali	Lablab purpureus.....	fully effective
Culture	Stylosanthes guianensis.....	effective
form : lyophilized	Macrotyloma axillare.....	effective
Last purity	Vigna unguiculata.....	effective
check : 1984		

Comments : Highly competitive for nodulation on Lablab purpureus. Recommended strain for Lablab under  
 Australian conditions; acid sensitive. Arguably more competitive than TAL 309 (CB 756).  
 This strain also known as : CB 1024, CIAT 111 Collected in : India

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 377

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Rhizobium strain TAL 377	Parent host : Glycine max	Subfamily: Papilionoideae
	Common names: soybean	Uses : grain/oil seed
Receipt by NifTAL 1976	Courtesy of : University of Minnesota	From : Dr. G. Ham
Form received slant	Collected : 1964 in Mississippi, USA	no site information

-----

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Glycine max.....	fully effective
Acid/alkali	Other host tests :	
producer : alkali		
Culture		
form : lyophilized		
Last purity		
check : 1984		

-----

Comments : Poor competitor for nodulation in mixed inoculation studies containing TAL 379  
and TAL 102. Serogroup c1  
This strain also known as : USDA 138 Collected in : Miss., USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 379

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Rhizobium strain TAL 379	Parent host : Glycine max	Subfamily: Papilionoideae
	Common names: soybean	Uses : grain/oil seed
Receipt by NifTAL 1976	Courtesy of : University of Sydney, Australia	From : Dr. J.M. Vincent
Form received slant	Collected : Maryland USA	no site information

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Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Glycine max.....	fully effective
Acid/alkali	Other host tests :	
producer : alkali	Glycine ussuriensis.....	ineffective
Culture		
form : lyophilized		
Last purity		
check : 1984		

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Comments : Better competitor than TAL 377 in field inoculation studies on soybean.  
Effective on most G. max cvs. except for cv. Hardee. Serogroup 122  
This strain also known as : USDA 136b, CB 1809 Collected in : Maryland, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 380

Rhizobium strain TAL 380	Parent host : Medicago sativa	Subfamily: Papilionoideae
	Common names: alfalfa	Uses : forage/pasture
Receipt by NifTAL 1976	Courtesy of : University of Sydney, Australia	From : Dr. J.M. Vincent
Form received slant	Collected : 1939 in Bathurst, NSW, Australia	no site information

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Fast/slow grower : fast	Host for authentication : Medicago sativa.....	Effectiveness : fully effective
Acid/alkali producer : acid	Other host tests : Medicago truncatula.....	effective
Culture form : lyophilized		
Last purity check : 1984		

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Comments : Antigenically distinct from TAL 1372 and TAL 1373.

This strain also known as : SU 47

Collected in : NSW, Australia

Availability of antisera : yes

Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 420

Rhizobium strain TAL 420	Parent host : Vigna radiata	Subfamily: Papilionoideae
	Common names: mung bean	Uses : grain legume
Receipt by NifTAL 10/76	Courtesy of : Dept. of Agriculture, Bangkok, Thailand	From : Mrs. Y. Vasuvat
Form received slant	Collected : Bangkok, Thailand	no site information

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Fast/slow grower : slow	Host for authentication : Macroptilium atropurpureum.....	Effectiveness : effective
Acid/alkali producer : alkali	Other host tests : Vigna unguiculata.....	effective
Culture form : lyophilized	Arachis hypogaea.....	effective
Last purity check : 1984	Vigna radiata.....	fully effective

---

Comments : Antigenically distinct from TAL 169 and TAL 441.

Acid tolerant.

This strain also known as : THA 301

Collected in : Thailand

Availability of antisera : yes

Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 441

Rhizobium strain TAL 441 Parent host : Vigna radiata Subfamily: Papilionoideae  
Common names: mungbean Uses : grain legume  
Receipt by NifTAL 01/17/77 Courtesy of : University of Philippines From : Ms. F. Gibe  
Form received slant Collected : Los Banos, Philippines no site information

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Fast/slow Host for authentication : Effectiveness :  
grower : slow Macroptilium atropurpureum..... effective  
Acid/alkali Other host tests :  
producer : alkali Vigna radiata..... fully effective  
Culture  
form : lyophilized  
Last purity  
check : 1984

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Comments : Antigenically distinct from TAL 169 and TAL 420. .

This strain also known as : UPLB M6 Collected in : Philippines

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 480

Rhizobium strain TAL 480 Parent host : Cicer arietinum Subfamily: Papilionoideae  
Common names: chickpea, garbanzo, gram Uses : grain legume  
Receipt by NifTAL 04/01/77 Courtesy of : Univ. of Agric. Sci, Bangalore, India From : Dr. S.V. Hedge  
Form received slant Collected : India no site information

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Fast/slow Host for authentication : Effectiveness :  
grower : slow Cicer arietinum..... fully effective  
Acid/alkali Other host tests :  
producer : alkali  
Culture  
form : lyophilized  
Last purity  
check : 1984

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Comments : Antigenically distinct from TAL 620 and TAL 1148.

This strain also known as : UASE 67 Collected in : India

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 569	Parent host : Desmodium uncinatum	Subfamily: Papilionoideae
	Common names: Spanish clover	Uses : forage legume
Receipt by NifTAL 10/22/79	Courtesy of : Soil Productivity Research Lab, Zimbabwe	From : M.R. Purdom
Form received slant	Collected : 1960 in Mazoe, Zimbabwe	no site information

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Fast/slow grower : slow	Host for authentication : Macropitilium atropurpureum.....	Effectiveness : effective
Acid/alkali producer : alkali	Other host tests : Cajanus cajan.....	fully effective
Culture form : lyophilized	Stylosanthes guianensis.....	fully effective
Last purity check : 1984	Desmodium intortum.....	fully effective
	Desmodium uncinatum.....	fully effective

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Comments : Antigenically distinct from TAL 1127 and TAL 1132.

This strain also known as : MAR 472

Collected in : Zimbabwe

Availability of antisera : yes

Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 582	Parent host : Leucaena leucocephala	Subfamily: Mimosoideae
	Common names: haole koa, ipil-ipil	Uses : multi-purpose
Receipt by NifTAL 6/76	Courtesy of : CSIRO, Brisbane, Australia	From : Dr. R.A. Date
Form received slant	Collected : Australia, 1954	no site information

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Fast/slow grower : fast	Host for authentication : Leucaena leucocephala.....	Effectiveness : effective
Acid/alkali producer : acid	Other host tests : Leucaena diversifolia.....	mod. effective
Culture form : lyophilized	Leucaena lanceolata.....	effective
Last purity check : 1984	Leucaena retusa.....	no nodulation
	Leucaena shannoni.....	no nodulation

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Comments : Originally isolated by Dr. D.O. Norris in 1954 from nodules of specimen plant in the Botanic Gardens, Brisbane. Recommended for commercial inoculant (Australia) for use in acid soils.

This strain also known as : CB 81

Collected in : Australia

Availability of antisera : yes

Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN

Rhizobium strain TAL 620

Rhizobium strain TAL 620 Parent host : Cicer arietinum Subfamily: Papilionoideae  
Common names: chickpea, garbanzo, gram Uses : grain legume  
Receipt by NifTAL 9/27/77 Courtesy of : ICRISAT, Hyderabad, India From : curator  
Form received slant Collected : no data available no site information

Fast/slow Host for authentication : Effectiveness :  
grower : intermediate Cicer arietinum..... fully effective  
Acid/alkali Other host tests :  
producer : neutral  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments : Serological cross reactions with Nit 27A8, ATCC 1144, USDA 3H0a1 (See Kingsley and Bohlool, 1983 for details). Highly competitive strain against TAL 480 and TAL 1148.  
This strain also known as : ICRISAT 3889 CB 1189 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN

Rhizobium strain TAL 634

Rhizobium strain TAL 634 Parent host : Lathyrus hirsutus Subfamily: Papilionoideae  
Common names: rough pea Uses : grain legume  
Receipt by NifTAL 1978 Courtesy of : University of Hawaii From : Dr. B.B. Bohlool  
Form received slant Collected : 1954 in Starkville, Miss. USA no site information

Fast/slow Host for authentication : Effectiveness :  
grower : fast Lens culinaris..... fully effective  
Acid/alkali Other host tests :  
producer : varies Vicia sp. .... fully effective  
Culture Pisum sativum..... fully effective  
form : lyophilized  
Last purity  
check : 1984

Comments : Strong competitor for nodulation on Lens culinaris cvs. Tekoa, Benewah, and Commercial in growth room and field (Inceptisol and Oxisol) tests.  
This strain also known as : Nit 92A3, NZP 5400 Collected in : Miss. USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.



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 RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 638  
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Rhizobium strain TAL 638	Parent host : Lens culinaris	Subfamily: Papilionoideae
	Common names: lentil	Uses : grain legume
Receipt by NifTAL 04/25/77	Courtesy of : University of Hawaii	From : S. May/B.B. Bohlool
Form received slant	Collected : Oahu, Hawaii	Oxisol (Wahiawa), pH 5.4

Fast/slow	Host for authentication :	Effectiveness :
grower : fast	Lens culinaris.....	effective
Acid/alkali	Other host tests :	
producer : varies		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Serologically distinct from TAL 634 and TAL 640.

This strain also known as : I-2 Collected in : Hawaii, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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 RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 640  
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Rhizobium strain TAL 640	Parent host : Lens culinaris	Subfamily: Papilionoideae
	Common names: lentil	Uses : grain legume
Receipt by NifTAL 10/22/78	Courtesy of : University of Hawaii	From : S. May/B.B. Bohlool
Form received slant	Collected : Hawaii	Molokai soil series, pH 6.5

Fast/slow	Host for authentication :	Effectiveness :
grower : fast	Lens culinaris.....	effective
Acid/alkali	Other host tests :	
producer : varies		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Antigenically distinct from TAL 634 and TAL 638.

This strain also known as : I-11 Collected in : Hawaii, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE -- University of Hawaii NifTAL Project and MIRCEN

Rhizobium strain TAL 651

Rhizobium strain TAL 651 Parent host : Calopogonium mucunoides Subfamily: Papilionoideae  
Common names: calapo Uses : cover crop  
Receipt by NifTAL 6/77 Courtesy of : University of Malaya From : see comments  
Form received slant Collected : University of Malaya campus soil pH 6.5, lateritic soil

Fast/slow Host for authentication : Effectiveness :  
grower : slow Macroptilium atropurpureum..... effective  
Acid/alkali Other host tests :  
producer : alkali Centrosema pubescens..... fully effective  
Culture Pueraria phaseoloides..... effective  
form : lyophilized Lablab purpureus..... mod. effective  
Last purity Glycine wightii..... ineffective  
check : 1984

Comments : From Drs. W.J. Broughton and P. Somasegaran  
Strong competitor for nodulation on Centrosema pubescens in sand culture studies.  
This strain also known as : UMKL 44 Collected in : Malaysia

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box D, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN

Rhizobium strain TAL 655

Rhizobium strain TAL 655 Parent host : Centrosema pubescens Subfamily: Papilionoideae  
Common names: centro Uses : cover crop  
Receipt by NifTAL 6/77 Courtesy of : University of Malaya From : see comments  
Form received Collected : Fraser's Hill, W. Malaysia soil pH 5.5; black clay

Fast/slow Host for authentication : Effectiveness :  
grower : slow Macroptilium atropurpureum..... effective  
Acid/alkali Other host tests :  
producer : alkali Centrosema pubescens..... fully effective  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments : From Drs. W.J. Broughton and P. Somasegaran  
Serologically distinct from TAL 651 and TAL 1146.  
This strain also known as : UMKL 09 Collected in : Malaysia

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box D, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 658

Rhizobium strain TAL 658 Parent host : Stylosanthes species Subfamily: Papilionoideae  
Common names: stylo Uses : forage/pasture  
Receipt by NifTAL 10/76 Courtesy of : CIAT, Colombia From : Dr. P.H. Graham  
Form received lyophilized Collected : Road to Plata to Pital, Huila, Colombia no site information

Fast/slow Host for authentication : Effectiveness :  
grower : slow Macropitilium atropurpureum..... effective  
Acid/alkali Other host tests :  
producer : alkali Stylosanthes guianensis..... fully effective  
Culture Vigna unguiculata..... fully effective  
form : lyophilized Stylosanthes humilis..... fully effective  
Last purity Stylosanthes capitata..... fully effective  
check : 1984

Comments : Highly competitive for nodule formation on stylo in acid soil. More competitive than  
TAL 309 (CB 756) for nodulation of tropical, forage, and tree legumes in acid soil.  
This strain also known as : CIAT 71 Collected in : Colombia

Availability of antisera : yes Availaoolity of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 667

Rhizobium strain TAL 667 Parent host : Desmodium intortum Subfamily: Papilionoideae  
Common names: kuru vine Uses : forage legume  
Receipt by NifTAL 10/05/77 Courtesy of : Soil Productivity Research Lab, Zimbabwe From : M.R. Purdum  
Form received slant Collected : 1960 in Mazoe, Zimbabwe no site information

Fast/slow Host for authentication : Effectiveness :  
grower : slow Macropitilium atropurpureum..... effective  
Acid/alkali Other host tests :  
producer : alkali Arachis hypogaea..... fully effective  
Culture Clitoria ternatea..... effective  
form : lyophilized Cyamopsis tetragonoloba..... fully effective  
Last purity Stylosanthes fruticosa..... fully effective  
check : 1984

Comments : Antigenically distinct from TAL 569 and TAL 1147.

This strain also known as : MAR 471 Collected in : Zimbabwe

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizctium strain TAL 1000	Parent host : Arachis hypogaea	Subfamily: Papilionoideae
	Common names: peanut	Uses : grain/oil seed
Receipt by NifTAL 9/78	Courtesy of : NifTAL Project, Maui, Hawaii	From : Dr. P. Singleton
Form received slant	Collected : 1978 at Hamakuapoko, NifTAL field site	Typic Haplustoll, pH 6.9

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Arachis hypogaea.....	fully effective
Acid/alkali	Other host tests :	
producer : alkali	Macroptilium atropurpureum.....	fully effective
Culture	Vigna unguiculata.....	fully effective
form : lyophilized	Lablab purpureus.....	fully effective
Last purity	Vigna acontifolia.....	fully effective
check : 1984		

Comments : Sensitive to 4 degree C storage in peat inoculants. Very effective on Burpee, Spanish, and Florunner cultivars of peanut.  
 This strain also known as : NifTAL original Collected in : Hawaii, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 1127	Parent host : Cajanus cajan	Subfamily: Papilionoideae
	Common names: pigeon pea	Uses : grain legume
Receipt by NifTAL 04/20/79	Courtesy of : ICRISAT, Hyderabad, India	From : Dr. P.J. Dart
Form received slant	Collected : no data available	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Macroptilium atropurpureum.....	effective
Acid/alkali	Other host tests :	
producer : alkali	Cajanus cajan.....	effective
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Antigenically distinct from TAL 569 and TAL 1132.

This strain also known as : IHP 38 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1132

Rhizobium strain TAL 1132 Parent host : *Cajanus cajan* Subfamily: Papilionoideae  
 Common names: pigeon pea Uses : grain legume  
 Receipt by NifTAL 04/20/79 Courtesy of : ICRISAT, Hyderabad, India From : Dr. P. L. Dart  
 Form received slant Collected : no data available no site information

Fast/slow Host for authentication : Effectiveness :  
 grower : slow *Macroptilium atropurpureum*..... effective  
 Acid/alkali Other host tests :  
 producer : alkali *Cajanus cajan*..... fully effective  
 Culture  
 form : lyophilized  
 Last purity  
 check : 1984

Comments : Antigenically distinct from TAL 569 and TAL 1127.

This strain also known as : IHP 195 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1145

Rhizobium strain TAL 1145 Parent host : *Leucaena leucocephala* Subfamily: Mimosoideae  
 Common names: haole koa, ipil-ipil Uses : multi-purpose  
 Receipt by NifTAL 03/22/79 Courtesy of : CIAT, Colombia From : Dr. J. Halliday  
 Form received lyophilized Collected : no site information site data pending

Fast/slow Host for authentication : Effectiveness :  
 grower : fast *Leucaena leucocephala*..... effective  
 Acid/alkali Other host tests :  
 producer : ac./neu *Leucaena diversifolia*..... fully effective  
 Culture *Leucaena lanceolata*..... fully effective  
 form : lyophilized *Prosopis pallida*..... fully effective  
 Last purity *Leucaena retusa*..... no nodulation  
 check : 1984

Comments : Nodulates in acid soil, highly competitive over CB 81 and TAL 82 in mixed inoculation studies on *Leucaena*. Also nodulates *Acacia mearnsii*, *Calliandra calothyrsus*, *Glyricidia sepium* and others.  
 This strain also known as : CIAT 1967 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1146  
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Rhizobium strain TAL 1146	Parent host : Centrosema species	Subfamily: Papilionoideae
	Common names: centro	Uses : legume cover
Receipt by NifTAL 03/22/79	Courtesy of : CIAT, Colombia	From : Dr. J. Halliday
Form received lyophilized	Collected : Mexico	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Centrosema pubescens.....	effective
Acid/alkali	Other host tests :	
producer : alkali	Macroptilium atropurpureum.....	moderately
Culture	Centrosema macrocarpum.....	effective
form : lyophilized	Centrosema pubescens.....	fully effective
Last purity		
check : 1984		

Comments : Antigenically distinct from TAL 651 and TAL 655.

This strain also known as : CIAT 590 Collected in : Mexico

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1147  
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Rhizobium strain TAL 1147	Parent host : Desmodium intortum	Subfamily: Papilionoideae
	Common names: kuru vine	Uses : forage legume
Receipt by NifTAL 1979	Courtesy of : CIAT, Colombia	From : Dr. J. Halliday
Form received lyophilized	Collected : Valle, Colombia	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : slow	Macroptilium atropurpureum.....	effective
Acid/alkali	Other host tests :	
producer : alkali		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Antigenically distinct from TAL 569 and TAL 667.

This strain also known as : CIAT 299 Collected in : Colombia

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1148

Rhizobium strain TAL 1148 Parent host : *Cicer arietinum* Subfamily: Papilionoideae  
 Common names: chickpea, garbanzo, gram Uses : grain legume  
 Receipt by NifTAL 1979 Courtesy of : University of Hawaii From : Dr. B.B. Bohlool  
 Form received slant Collected : no data available no site information

Fast/slow Host for authentication : Effectiveness :  
 grower : slow *Cicer arietinum*..... fully effective  
 Acid/alkali Other host tests :  
 producer : neutral  
 Culture  
 form : lyophilized  
 Last purity  
 check : 1984

Comments : Antigenically distinct from TAL 480 and TAL 520.

This strain also known as : Nit 27A3, USDA 3100 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1371

Rhizobium strain TAL 1371 Parent host : *Arachis hypogaea* Subfamily: Papilionoideae  
 Common names: peanut Uses : grain/oil seed  
 Receipt by NifTAL 11/13/79 Courtesy of : Texas A&M University From : Dr. R. Weaver  
 Form received slant Collected : 1974 no site information

Fast/slow Host for authentication : Effectiveness :  
 grower : slow *Arachis hypogaea*..... fully effective  
 Acid/alkali Other host tests :  
 producer : alkali *Macroptilium atropurpureum*..... fully effective  
 Culture  
 form : lyophilized  
 Last purity  
 check : 1984

Comments : Antigenically distinct from TAL 169 and TAL 1000.

This strain also known as : Nit 8A11, T-1 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1372

Rhizobium strain TAL 1372 Parent host : Medicago sativa Subfamily: Papilionoideae  
Common names: alfalfa Uses : forage/pasture  
Receipt by NifTAL 11/16/79 Courtesy of : UFRGS, Porto Alegre, Brazil From : Dr. Jardim Freire  
Form received slant Collected : Brazil no site information

Fast/slow Host for authentication : Effectiveness :  
grower : fast Medicago sativa..... fully effective  
Acid/alkali Other host tests :  
producer : alkali  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments : Tested field inoculant for Brazilian alfalfa varieties in acid soils  
limed to pH 6.0.  
This strain also known as : POA 116 Collected in : Brazil

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box D, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1373

Rhizobium strain TAL 1373 Parent host : Medicago sativa Subfamily: Papilionoideae  
Common names: alfalfa Uses : forage/pasture  
Receipt by NifTAL 11/16/79 Courtesy of : UFRGS, Porto Alegre, Brazil From : Dr. Jardim Freire  
Form received slant Collected : Brazil no site information

Fast/slow Host for authentication : Effectiveness :  
grower : fast Medicago sativa..... fully effective  
Acid/alkali Other host tests :  
producer : alkali  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments : Tested field inoculant for Brazilian alfalfa varieties in acid soils  
limed to pH 6.0.  
This strain also known as : POA 135 Collected in : Brazil

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box D, Paia, Hawaii 96779, U.S.A.



Rhizobium strain TAL 1376	Parent host : Phaseolus vulgaris	Subfamily: Papilionoideae
	Common names: bean/kidney, pinto beans	Uses : grain legume
Receipt by NifTAL 1980	Courtesy of : CENA, Piracicaba, Brazil	From : Dr. S. Saito
Form received slant	Collected : no data available	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : fast	Phaseolus vulgaris.....	fully effective
Acid/alkali	Other host tests :	
producer : acid		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Field tested as inoculant for P. vulgaris in acid soils.

This strain also known as : C-34 Collected in : Not known

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

Rhizobium strain TAL 1383	Parent host : Phaseolus vulgaris	Subfamily: Papilionoideae
	Common names: bean/kidney, pinto bean	Uses : grain legume
Receipt by NifTAL 1979	Courtesy of : CIAT, Colombia	From : Dr. P.H. Graham
Form received peat inoc.	Collected : Guatemala	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : fast	Phaseolus vulgaris.....	fully effective
Acid/alkali	Other host tests :	
producer : acid		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Repeatedly tested for symbiotic effectiveness and response 1974-79.  
 Included in CIAT's 1979 IBIT (Int'l Bean Inoculation trial). Strain 21 (original) from Guatemala.  
 This strain also known as : CIAT 632 Collected in : Guatemala

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1397

Rhizobium strain TAL 1397 Parent host : Vicia faba Subfamily: Papilionoideae  
Common names: faba bean Uses : grain legume  
Receipt by NifTAL 08/07/80 Courtesy of : Nitragin Co., Wisconsin, USA From : Dr. J.C. Burton  
Form received slant Collected : Morocco no site information

Fast/slow Host for authentication : Effectiveness :  
grower : fast Vicia faba..... fully effective  
Acid/alkali Other host tests :  
producer : acid  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments : Antigenically distinct from TAL 1399 and TAL 1400.

This strain also known as : Nit 175F9 Collected in : Morocco

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1399

Rhizobium strain TAL 1399 Parent host : Vicia faba Subfamily: Papilionoideae  
Common names: faba bean Uses : grain legume  
Receipt by NifTAL 08/07/80 Courtesy of : Nitragin Co., Wisconsin, USA From : Dr. J.C. Burton  
Form received slant Collected : Manitoba, Canada no site information

Fast/slow Host for authentication : Effectiveness :  
grower : fast Vicia faba..... fully effective  
Acid/alkali Other host tests :  
producer : acid  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments : Antigenically distinct from TAL 1397 and TAL 1400.

This strain also known as : Nit 175F12 Collected in : Man. Canada

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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 RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1400  
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Rhizobium strain TAL 1400	Parent host : Vicia faba	Subfamily: Papilionoideae
	Common names: faba bean	Uses : grain legume
Receipt by NifTAL 08/07/80	Courtesy of : Nitragin Co., Wisconsin, USA	From : Dr. J.C. Burton
Form received slant	Collected : Manitoba, Canada	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : fast	Vicia faba.....	fully effective
Acid/alkali	Other host tests :	
producer : acid		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments : Antigenically distinct from TAL 1397 and TAL 1399.

This strain also known as : Nit 175F16 Collected in : Man. Canada

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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 RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1402  
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Rhizobium strain TAL 1402	Parent host : Pisum sativum	Subfamily: Papilionoideae
	Common names: garden pea	Uses : grain legume
Receipt by NifTAL 10/02/80	Courtesy of : Nitragin Co., Wisconsin, USA	From : Dr. J.C. Burton
Form received slant	Collected : Wisconsin, USA	no site information

Fast/slow	Host for authentication :	Effectiveness :
grower : fast	Pisum sativum.....	fully effective
Acid/alkali	Other host tests :	
producer : acid		
Culture		
form : lyophilized		
Last purity		
check : 1984		

Comments :

This strain also known as : Nit 128C75 Collected in : Wisconsin, USA

Availability of antisera : yes Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

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RHIZOBIUM GERMP.LASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN

Rhizobium strain TAL 1403

Rhizobium strain TAL 1403 Parent host : Vicia villosa Subfamily: Papilionoideae  
Common names: hairy vetch Uses : grain legume  
Receipt by NifTAL 10/02/80 Courtesy of : Nitragin Co., Wisconsin, USA From : Dr. J.C. Burton  
Form received slant Collected : roadside, Tenn. USA no site information

Fast/slow Host for authentication : Effectiveness :  
grower : fast Pisum sativum..... fully effective  
Acid/alkali Other host tests :  
producer : acid  
Culture  
form : lyophilized  
Last purity  
check : 1984

Comments :

This strain also known as : Nit 175G10

Collected in : Tenn. USA

Availability of antisera : yes

Availability of antibiotic resistant mutants : special order only

Enquiries : University of Hawaii, NifTAL Project and Mircen, P.O. Box 0, Paia, Hawaii 96779, U.S.A.

## Section B

Characterized strains of Rhizobium for legumes with a  
potential role in development

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RHIZOBIUM GERMPPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 22

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Parent host : Phaseolus lunatus Subfamily : Papilionoideae Received : 11/17/75  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Paia, Maui, Hawaii  
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
Comments : Highly effective on Vigna umbellata and Phaseolus lunatus; moderately effective  
on Pachyrhizus erosus and ineffective on Vigna aconitifolia and Lablab purpureus.  
This strain also known as : NifTAL original Collected in : Hawaii, USA  
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RHIZOBIUM GERMPPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 163

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Parent host : Vigna unguiculata Subfamily : Papilionoideae Received : 04/26/76  
Courtesy of : IITA, Nigeria Collected : Nigeria  
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
Comments : Highly effective on Glycine wightii and Vigna unguiculata.  
  
This strain also known as : NifTAL original Collected in : Nigeria  
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RHIZOBIUM GERMPPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 197

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Parent host : Lablab purpureus Subfamily : Papilionoideae Received : 03/06/76  
Courtesy of : Nitragin Co., Wisconsin, USA Collected : Matao, Brazil  
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
Comments : Effective on Macrotyloma uniflorum.  
  
This strain also known as : Nit 42B3 Collected in : Brazil  
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RHIZOBIUM GERMPPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 201

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Parent host : Canavalia ensiformis Subfamily : Papilionoideae Received : 03/06/83  
Courtesy of : Nitragin Co., Wisconsin, USA Collected : Matao, Brazil  
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
Comments : Effective on Canavalia ensiformis.  
  
This strain also known as : Nit 22A4 Collected in : Brazil  
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RHIZOBIUM GERMPPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 228

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Parent host : Psophocarpus tetragonolobus Subfamily : Papilionoideae Received : 1977  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Haiku, Maui, Hawaii  
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
Comments : Highly effective on Psophocarpus tetragonolobus.  
  
This strain also known as : NifTAL original Collected in : Hawaii, USA  
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RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 556
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Parent host   : Voandzeia subterranea                      Subfamily    : Papilionoideae      Received   : 1983
Courtesy of   : ARD, Nairobi, Kenya                      Collected   : Kenya
pH reaction   : alkali      Growth : slow                  Authentication : Macroptilium atropurpureum
Comments      : Effective on Voandzeia subterranea.

                This strain also known as : NifTAL original                      Collected in : Kenya
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RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 567
-----
Parent host   : Crotalaria ochroleuca                      Subfamily    : Papilionoideae      Received   : 09/76
Courtesy of   : Soil Productivity Research Lab, Zimbabwe Collected   : 1960 in Mazoe, Zimbabwe
pH reaction   : alkali      Growth : slow                  Authentication : Crotalaria ochroleuca
Comments      : Fully effective on Crotalaria juncea; no nodulation on Listia heterophylla
                or Mucuna deeringianum.
                This strain also known as : MAR 464                      Collected in : Zimbabwe
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 579
-----
Parent host   : Canavalia virosa                          Subfamily    : Papilionoideae      Received   : 09/76
Courtesy of   : Soil Productivity Research Lab, Zimbabwe Collected   : 1965 in Mazoe, Zimbabwe
pH reaction   : alkali      Growth : slow                  Authentication : Macroptilium atropurpureum
Comments      : Fully effective on Cajanus cajan, Neonotonia tabacina; effective on Canavalia ensiformis
                and Desmondium discolor. No nodulation on D. intortum and Stylosanthes humilis.
                This strain also known as : MAR 998                      Collected in : Zimbabwe
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 600
-----
Parent host   : Prosopis chilensis                        Subfamily    : Mimosoideae           Received   : 1977
Courtesy of   : NifTAL Project, Maui, Hawaii (nodule)     Collected   : Maui, Hawaii, USA
pH reaction   : alkali      Growth : fast                  Authentication : Leucaena leucocephala
Comments      : Fully effective on Prosopis chilensis and Leucaena leucocephala.
                Effective on L. diversifolia; no nodulation on L. retusa.
                This strain also known as : NifTAL original                      Collected in : Hawaii, USA
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 643
-----
Parent host   : Canavalia gladiata                        Subfamily    : Papilionoideae      Received   : 06/77
Courtesy of   : University of Malaya                      Collected   : Univ. of Malaya campus
pH reaction   : alkali      Growth : slow                  Authentication : Macroptilium atropurpureum
Comments      : Effective on Canavalia gladiata and Psophocarpus tetragonolobus.

                This strain also known as : UMKL 25                      Collected in : Malaysia
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*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NIFTAL Project and MIRCEN                      Rhizobium strain TAL 644
-----
Parent host : Phaseolus acutifolius                      Subfamily : Papilionoideae      Received : 10/76
Courtesy of : CIAT, Colombia                             Collected : no data available
pH reaction : alkali      Growth : slow      Authentication : Phaseolus acutifolius
Comments    : Originally from Research Institute, Ontario, Canada
              Fully effective on Phaseolus lunatus
              This strain also known as : CIAT 257, 94/RIO                      Collected in : Not known
-----

*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NIFTAL Project and MIRCEN                      Rhizobium strain TAL 645
-----
Parent host : Vigna angularis                            Subfamily : Papilionoideae      Received : 06/77
Courtesy of : University of Malaya                       Collected : Univ. of Malaya campus
pH reaction : alkali      Growth : slow      Authentication : Macroptilium atropurpureum
Comments    : Effective on Vigna angularis; moderately effective on Vigna aconitifolia
              and Vigna umbellata.
              This strain also known as : UMKL 12                      Collected in : Malaysia
-----

*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NIFTAL Project and MIRCEN                      Rhizobium strain TAL 647
-----
Parent host : Pueraria phaseoloides                      Subfamily : Papilionoideae      Received : 06/77
Courtesy of : University of Malaya                       Collected : Univ. of Malaya campus library
pH reaction : alkali      Growth : slow      Authentication : Macroptilium atropurpureum
Comments    : Fully effective on Pueraria phaseoloides and Psophocarpus tetragonolobus.
              This strain also known as : UMKL 56                      Collected in : Malaysia
-----

*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NIFTAL Project and MIRCEN                      Rhizobium strain TAL 648
-----
Parent host : Psophocarpus tetragonolobus               Subfamily : Papilionoideae      Received : 06/77
Courtesy of : University of Malaya                       Collected : Univ. of Malaya campus
pH reaction : alkali      Growth : slow      Authentication : Macroptilium atropurpureum
Comments    : Fully effective on Phaseolus acutifolius and Psophocarpus tetragonolobus. Effective on
              Pachyrhizus erosus, Vigna umbellata; ineffective on Glycine wightii.
              This strain also known as : UMKL 57                      Collected in : Malaysia
-----

*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NIFTAL Project and MIRCEN                      Rhizobium strain TAL 656
-----
Parent host : Pachyrhizus erosus                         Subfamily : Papilionoideae      Received : 06/77
Courtesy of : University of Malaya                       Collected : University of Malaya campus
pH reaction : alkali      Growth : slow      Authentication : Macroptilium atropurpureum
Comments    : Effective on Vigna umbellata and Pachyrhizus erosus.
              This strain also known as : UMKL 82                      Collected in : Malaysia
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*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 657
-----
Parent host : Pachyrhizus erosus Subfamily : Papilionoideae Received : 06/77
Courtesy of : University of Malaya Collected : Malaysia
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum
Comments : Fully effective on Pachyrhizus erosus.

This strain also known as : UMKL 81 Collected in : Malaysia
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*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 684
-----
Parent host : Vigna frutescens Subfamily : Papilionoideae Received : 10/05/77
Courtesy of : Soil Productivity Research Lab, Zimbabwe Collected : grassland soil, Marandelles
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum
Comments : Effective on Glycine wightii, Cyamopsis tetragonoloba, Desmodium discolor, Vigna radiata,
D. uncinatum, Lablab purpureus, Neonotonia tabacina, V. unguiculata.
This strain also known as : MAR 429 Collected in : Zimbabwe
-----
*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 727
-----
Parent host : Calopogonium caeruleum Subfamily : Papilionoideae Received : 11/76
Courtesy of : CIAT, Colombia Collected : Mag., Colombia
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum
Comments : Effective on Calopogonium caeruleum.

This strain also known as : CIAT 493 Collected in : Colombia
-----
*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 734
-----
Parent host : Crotolaria juncea Subfamily : Papilionoideae Received : 11/76
Courtesy of : CIAT, Colombia Collected : Turipana, Colombia
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum
Comments : Fully effective on Pachyrhizus erosus.

This strain also known as : CIAT 276 Collected in : Colombia
-----
*****
RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 768
-----
Parent host : Vigna angularis Subfamily : Papilionoideae Received : 10/76
Courtesy of : CIAT, Cali, Colombia Collected : no data available
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum
Comments : Fully effective on Vigna umbellata.

This strain also known as : CIAT 108 Collected in : Not known
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*****
RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  819
-----
Parent host   : Clitoria laurifolia                      Subfamily    : Papilionoideae      Received   : 10/76
Courtesy of   : University of Malaya                     Collected   : Univ. of Malaya campus
pH reaction   : alkali                                   Growth       : slow                Authentication : Macroptilium atropurpureum
Comments      : Effective on Clitoria ternatea.

                This strain also known as : UMKL 28                                Collected in : Malaysia
-----
*****
RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  827
-----
Parent host   : Clitoria ternatea                      Subfamily    : Papilionoideae      Received   : 05/31/78
Courtesy of   : University of Malaya                     Collected   : Univ. of Malaya campus
pH reaction   : alkali                                   Growth       : slow                Authentication : Macroptilium atropurpureum
Comments      : Effective on Clitoria ternatea.

                This strain also known as : UMKL 58                                Collected in : Malaysia
-----
*****
RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  832
-----
Parent host   : Pueraria phaseoloides                  Subfamily    : Papilionoideae      Received   : 05/31/77
Courtesy of   : University of Malaya                     Collected   : 14 ms PD-Serum Rd., Malaysia
pH reaction   : alkali                                   Growth       : slow                Authentication : Macroptilium atropurpureum
Comments      : Highly effective on Pueraria phaseoloides.

                This strain also known as : UMKL 54                                Collected in : Malaysia
-----
*****
RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  848
-----
Parent host   : Pithecellobium jiringa                  Subfamily    : Mimosoideae      Received   : 05/03/77
Courtesy of   : University of Malaya                     Collected   : Univ. of Malaya Botanic Gardens
pH reaction   : alkali                                   Growth       : slow                Authentication : Macroptilium atropurpureum
Comments      : Effective on Pithecellobium jiringa. No nodulation on
                Psophocarpus tetragonolobus.
                This strain also known as : UMKL 67                                Collected in : Malaysia
-----
*****
RHIZOBIUM GERMLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  849
-----
Parent host   : Pithecellobium jiringa                  Subfamily    : Mimosoideae      Received   : 05/31/77
Courtesy of   : University of Malaya                     Collected   : Malaysia
pH reaction   : alkali                                   Growth       : slow                Authentication : Macroptilium atropurpureum
Comments      : Effective on Pithecellobium jiringa

                This strain also known as : UMKL 68                                Collected in : Malaysia
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*****
RHZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  938
-----
Parent host   : Vigna angularis                      Subfamily    : Papilionoideae      Received   : 11/77
Courtesy of   : University of Hawaii, USA             Collected   : no data available
pH reaction   : alkali                               Growth       : slow               Authentication : Macroptilium atropurpureum
Comments      :

This strain also known as : B-39                                Collected in : Not known
-----
*****
RHZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  940
-----
Parent host   : Acacia mearnsii                      Subfamily    : Mimosoideae        Received   : 09/29/82
Courtesy of   : Nitragin Co., Wisconsin, USA         Collected   : Kenya
pH reaction   : alkali                               Growth       : slow               Authentication : Acacia mearnsii
Comments      : Effective on Acacia mearnsii.

This strain also known as : Num 777                              Collected in : Kenya
-----
*****
RHZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  984
-----
Parent host   : Centrosema pubescens                 Subfamily    : Papilionoideaeae     Received   : 3/17/78
Courtesy of   : Rubber Research Institute of Malaysia Collected   : Malaysia
pH reaction   : alkali                               Growth       : slow               Authentication : Centrosema pubescens
Comments      : Fully effective on Calopogonium caeruleum; ineffective on
                  Psophocarpus tetragonolobus.
                  This strain also known as : RRIM 968                                Collected in : Malaysia
-----
*****
RHZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  995
-----
Parent host   : Leucaena leucocephala                 Subfamily    : Mimosoideae        Received   : 02/03/78
Courtesy of   : Central Luzon State Univ., Philippines Collected   : Central Luzon State Univ. field plot
pH reaction   : acid                               Growth       : fast               Authentication : Leucaena leucocephala
Comments      : Effective on Prosopis chilensis and Leucaena leucocephala.

This strain also known as : NifTAL original                              Collected in : Philippines
-----
*****
RHZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL  999
-----
Parent host   : Vigna unguiculata                     Subfamily    : Papilionoideae      Received   : 01/02/78
Courtesy of   : NifTAL Project, Maui, Hawaii          Collected   : Kimbimbi, Kenya
pH reaction   : alkali                               Growth       : slow               Authentication : Macroptilium atropurpureum
Comments      : Fully effective on Vigna acontifolia, Cajanus cajan, Vigna unguiculata (cvs. Jvu 1190,
                  Parastoo, and Camaran); moderately effective on Vigna umbellata.
                  This strain also known as : NifTAL original                              Collected in : Kenya
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RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1019

-----  
Parent host : Phaseolus lunatus Subfamily : Papilionoideae Received : 11/27/78  
Courtesy of : Nitragin Co., Wisconsin, USA Collected : 1977 in Maui, Hawaii USA  
pH reaction : alkali Growth : slow Authentication : Phaseolus lunatus  
Comments : Fully effective on Phaseolus lunatus.

This strain also known as : Nit 127E19 Collected in : Hawaii, USA

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RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1021

-----  
Parent host : Psophocarpus tetragonolobus Subfamily : Papilionoideae Received : 11/27/78  
Courtesy of : Nitragin Co., Wisconsin, USA Collected : Chiang-Mai, Thailand  
pH reaction : alkali Growth : slow Authentication : Psophocarpus tetragonolobus  
Comments : Fully effective on Psophocarpus tetragonolobus.

This strain also known as : Nit 132B13 Collected in : Thailand

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RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1022

-----  
Parent host : Psophocarpus tetragonolobus Subfamily : Papilionoideae Received : 11/27/78  
Courtesy of : Nitragin Co., Wisconsin, USA Collected : Chiang-Mai, Thailand  
pH reaction : alkali Growth : slow Authentication : Psophocarpus tetragonolobus  
Comments : Fully effective on Psophocarpus tetragonolobus.

This strain also known as : Nit 132B14 Collected in : Thailand

\*\*\*\*\*  
RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1101

-----  
Parent host : Albizia falcataria Subfamily : Mimosoideae Received : 03/79  
Courtesy of : University of Singapore Collected : Singapore  
pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
Comments :

This strain also known as : No synonyms Collected in : Singapore

\*\*\*\*\*  
RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1113

-----  
Parent host : Sesbania species Subfamily : Papilionoideae Received : 05/02/79  
Courtesy of : ICRISAT, Hyderabad, India Collected : India  
pH reaction : acid Growth : fast Authentication : Sesbania aegyptica  
Comments : Effective on Sesbania grandiflora and S. aegyptica. \*

This strain also known as : IC-70 Collected in : India

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*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 1115
-----
Parent host   : Sesbania species                               Subfamily    : Papilionoideae      Received   : 05/02/79
Courtesy of   : ICRISAT, Hyderabad, India                     Collected    : India
pH reaction   : acid                                           Growth       : fast           Authentication : Sesbania aegyptica
Comments      : Effective on Sesbania grandiflora and S. aegyptica.

                This strain also known as : IC-72                                Collected in : India
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 1123
-----
Parent host   : Sesbania macrocarpa                           Subfamily    : Papilionoideae      Received   : 06/82
Courtesy of   : Nitragin Co., Wisconsin, USA                  Collected    : 1953 in Mississippi, USA
pH reaction   : alkali                                           Growth       : fast           Authentication :
Comments      : Effective on Sesbania grandiflora and S. aegyptica.

                This strain also known as : Nit 145n7                                Collected in : Miss., USA
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 1282
-----
Parent host   : Clitoria ternatea                             Subfamily    : Papilionoideae      Received   : 10/76
Courtesy of   : University of Wisconsin                       Collected    : no data available
pH reaction   : alkali                                           Growth       : slow           Authentication : Macroptilium atropurpureum
Comments      :

                This strain also known as : Allen 714                                Collected in : Not known
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 1385
-----
Parent host   : Acacia mearnsii                               Subfamily    : Mimosoideae      Received   :
Courtesy of   : NifTAL Project, Maui, Hawaii                  Collected    : Olinda, Maui, Hawaii
pH reaction   : alkali                                           Growth       : slow           Authentication : Macroptilium atropurpureum
Comments      :

                This strain also known as : No synonyms                                Collected in : Hawaii, USA
-----
*****
RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN                      Rhizobium strain TAL 1428
-----
Parent host   : Acacia senegal                                 Subfamily    : Mimosoideae      Received   : 04/81
Courtesy of   : ORSTOM, Dakar, Senegal                         Collected    : no data available
pH reaction   : acid                                           Growth       : fast           Authentication : Acacia senegal
Comments      : Fully effective on Acacia senegal and A. seyal; effective on A. nilotica (var. nebb and
                tomentosa), A. raddiana, A. farnesiana, and Leucaena leucocephala.
                This strain also known as : ORS 901                                Collected in : Not known
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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1436

-----  
Parent host : Acacia farnesiana Subfamily : Mimosoideae Received : 04/81  
Courtesy of : ORSTOM, Dakar, Senegal Collected : no data available  
pH reaction : acid Growth : fast Authentication : Acacia senegal  
Comments : Effective on A. nilotica (var. nebebe and tomentosa), A. raddiana, A. seyal, A. senegal,  
A. farnesiana; ineffective on A. bivenosa and A. tumida.  
This strain also known as : ORS 911 Collected in : Not known  
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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1445

-----  
Parent host : Pithecellobium dulce Subfamily : Mimosoideae Received : 04/81  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Hamakuapoko field site, NifTAL, Maui  
pH reaction : acid Growth : slow Authentication :  
Comments : Effective on Pithecellobium dulce.  
  
This strain also known as : NifTAL original Collected in : Hawaii, USA  
-----

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1446

-----  
Parent host : Acacia auriculaeformis Subfamily : Mimosoideae Received : 04/81  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Hamakuapoko field site, Hawaii  
pH reaction : alkali Growth : slow Authentication :  
Comments :  
  
This strain also known as : NifTAL original Collected in : Hawaii, USA  
-----

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1457

-----  
Parent host : Acacia albida Subfamily : Mimosoideae Received :  
Courtesy of : University of Khartoum, Shambat, Sudan Collected : Shambat, Sudan  
pH reaction : alkali Growth : slow Authentication :  
Comments :  
  
This strain also known as : No synonyms Collected in : Sudan  
-----

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1459

-----  
Parent host : Acacia albida Subfamily : Mimosoideae Received : 08/80  
Courtesy of : University of Khartoum, Shambat, Sudan Collected : Shambat, Sudan  
pH reaction : alkali Growth : slow Authentication :  
Comments :  
  
This strain also known as : No synonyms Collected in : Sudan  
-----

\*\*\*\*\*  
 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1460

-----  
 Parent host : Acacia seyal Subfamily : Mimosoideae Received : 08/80  
 Courtesy of : University of Khartoum, Shambat, Sudan Collected : Shambat, Sudan  
 pH reaction : acid Growth : fast Authentication :  
 Comments :

This strain also known as : No synonyms Collected in : Sudan

\*\*\*\*\*  
 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1509

-----  
 Parent host : Acacia seyal Subfamily : Mimosoideae Received : 10/81  
 Courtesy of : NifTAL Project, Maui, Hawaii Collected : Hamakuapoko, Maui, Hawaii  
 pH reaction : neutral Growth : fast Authentication :  
 Comments :

This strain also known as : NifTAL original Collected in : Hawaii, USA

\*\*\*\*\*  
 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1536

-----  
 Parent host : Albizia lebbek Subfamily : Mimosoideae Received : 10/81  
 Courtesy of : NifTAL Project, Maui, Hawaii Collected : Hamakuapoko, Maui, Hawaii  
 pH reaction : alkali Growth : slow Authentication : Macroptilium atropurpureum  
 Comments :

This strain also known as : NifTAL original Collected in : Hawaii, USA

\*\*\*\*\*  
 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1594

-----  
 Parent host : Acacia pennatula Subfamily : Mimosoideae Received : 07/83  
 Courtesy of : NifTAL Project, Maui, Hawaii Collected : Uxpanapu, Mexico  
 pH reaction : acid Growth : fast Authentication : Acacia pennatula  
 Comments : Isolated from seedlings growing in lowland soil. Effective on Acacia pennatula.

Nodulates Leucaena leucocephala and Macroptilium atropurpureum.  
 This strain also known as : No synonyms Collected in : Mexico

\*\*\*\*\*  
 RHIZOBIUM GERMPLASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1595

-----  
 Parent host : Acacia pennatula Subfamily : Mimosoideae Received : 07/83  
 Courtesy of : NifTAL Project, Maui, Hawaii Collected : Uxpanapu, Mexico  
 pH reaction : acid Growth : fast Authentication : Acacia pennatula  
 Comments : Isolated from seedlings growing in lowland tropical soil. Effective on Acacia pennatula.

Nodulates Leucaena leucocephala and Macroptilium atropurpureum.  
 This strain also known as : No synonyms Collected in : Mexico

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1596

-----  
Parent host : Acacia pennatula Subfamily : Mimosoideae Received : 07/83  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Uxpanapu, Mexico  
pH reaction : acid Growth : fast Authentication : Acacia pennatula  
Comments : Isolated from seedlings growing in lowland tropical soil. Effective on Acacia pennatula.  
Nodulates Leucaena leucocephala.  
This strain also known as : No synonyms Collected in : Mexico  
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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1597

-----  
Parent host : Albizia lebbek Subfamily : Mimosoideae Received : 10/81  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Hamakuapoko, Maui, Hawaii  
pH reaction : alkali Growth : slow Authentication :  
Comments :  
  
This strain also known as : NifTAL original Collected in : Hawaii, USA  
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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1768

-----  
Parent host : Gliricidia sepium Subfamily : Papilionoideae Received : 07/83  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Uxpanapa, Mexico  
pH reaction : acid Growth : fast Authentication : Gliricidia sepium  
Comments : Isolated from seedlings grown in lowland tropical soil.  
Fully effective on Gliricidia sepium.  
This strain also known as : NifTAL original Collected in : Mexico  
-----

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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1769

-----  
Parent host : Gliricidia sepium Subfamily : Papilionoideae Received : 07/83  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Uxpanapa, Mexico  
pH reaction : acid Growth : fast Authentication : Gliricidia sepium  
Comments : Isolated from seedlings grown in lowland tropical soils  
Fully effective on Gliricidia sepium.  
This strain also known as : NifTAL original Collected in : Mexico  
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RHIZOBIUM GERMPASM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL 1770

-----  
Parent host : Gliricidia sepium Subfamily : Papilionoideae Received : 07/83  
Courtesy of : NifTAL Project, Maui, Hawaii Collected : Uxpanapa, Mexico  
pH reaction : acid Growth : fast Authentication : Gliricidia sepium  
Comments : Isolated from seedlings grown in lowland tropical soil.  
Fully effective on Gliricidia sepium; nodulates Leucaena leucocephala.  
This strain also known as : NifTAL original Collected in : Mexico  
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## Section C

Numerical list of all strains of Rhizobium, giving the most important source and test data

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1	<i>Calliandra calothyrsus</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
2	<i>Calliandra calothyrsus</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
3	<i>Gliricidia sepium</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
4	<i>Gliricidia sepium</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
5	<i>Gliricidia sepium</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
6	<i>Gliricidia sepium</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
7	<i>Gliricidia sepium</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
8	<i>Gliricidia sepium</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
9	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
10	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
11	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
12	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
13	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
14	<i>Lablab purpureus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
15	<i>Lablab purpureus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
16	<i>Arachis glabrata</i>	Nitragin Co., Wisconsin, USA	Florida, USA	Nit 8B4
17	<i>Sphenostylis stenocarpa</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 143A1
18	<i>Coronilla varia</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 31B7
19	<i>Voandzeia subterranea</i>	IITA, Nigeria	Nigeria	NifTAL original
20	<i>Cajanus cajan</i>	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
21	<i>Leucaena leucocephala</i>	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Nit 94A1, Allen 711
22**	<i>Phaseolus lunatus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
23	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Nigeria	NifTAL original
24	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
25	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
26	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
27	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
28	<i>Pterocarpus macrocarpus</i>	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
29	<i>Leucaena shannoni</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
30	<i>Trifolium subterraneum</i>	University of Hawaii	W. Australia	B-5, WU 95
31	<i>Trifolium subterraneum</i>	University of Hawaii	W. Australia	B-6, WU 290
32	<i>Trifolium subterraneum</i>	University of Hawaii	W. Australia	B-7 Variant of WU290
33	<i>Calliandra calothyrsus</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
34	<i>Trifolium species</i>	University of Hawaii	Not known	B-9 NZP 560 PDD 2153
35	<i>Leucaena shannoni</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
36	<i>Cajanus cajan</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 21A8
37	<i>Ateleia herbert smithii</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
38	<i>Ateleia herbert smithii</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
39	<i>Ateleia herbert smithii</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
40	<i>Ateleia herbert smithii</i>	Commonwealth Forestry Institute, U.K.	Honduras	NifTAL original
41	<i>Acacia pennatula</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
42	<i>Acacia pennatula</i>	Commonwealth Forestry Institute, U.K.	Honduras	NifTAL original
43	<i>Lotus pedunculatus</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 95E10
44	<i>Acacia pennatula</i>	Commonwealth Forestry Institute, U.K.	Honduras	NifTAL original
45	<i>Albizia falcata</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
46	<i>Albizia falcata</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
47	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
48	<i>Albizia falcata</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
49	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
50	<i>Vicia faba</i>	University of Hawaii	Morocco	B-92

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
51	<i>Vicia faba</i>	University of Hawaii	Morocco	B-93
52	<i>Vicia faba</i>	University of Hawaii	Morocco	B-94
53	<i>Pisum species</i>	University of Hawaii	Not known	B-115, M 344
54	<i>Lens culinaris</i>	University of Hawaii	Not known	B-116, LK 3005
55	<i>Pisum species</i>	University of Hawaii	Not known	B-117, C 4202
56	<i>Lens culinaris</i>	University of Hawaii	Not known	B-119, LK 3003
57	<i>Cicer arietinum</i>	University of Hawaii	Israel	B-159
58	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
59	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
60	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
61	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
62	<i>Astragalus species</i>	University of Hawaii	China	PRC 7653-1, B-212
63	<i>Acacia mearnsii</i>	Nitragin Co., Wisconsin, USA	Hawaii, USA	Nit 1B2
64	<i>Eriosema englerianum</i>	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Nit 48A3
65	<i>Pithecellobium dulce</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
66	<i>Leucaena shannoni</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
67	<i>Sesbania macrocarpa</i>	Nitragin Co., Wisconsin, USA	Mexico	Nit 145A10
68	<i>Psophocarpus pulustris</i>	IITA, Nigeria	Nigeria	NifTAL original
69	<i>Erythrina indica</i>	Nitragin Co., Wisconsin, USA	Hawaii, USA	Nit 47A1, Allen 46-1
70	<i>Prosopis pallida</i>	NifTAL Project, Maui, Hawaii	Not known	NifTAL original
71	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
72	<i>Albizia falcataria</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
73	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
74	<i>Mimosa invisa</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
75	<i>Arachis hypogaea</i>	Texas A & M, USA	Texas, USA	No synonyms
76	<i>Phaseolus wrightii</i>	Nitragin Co., Wisconsin, USA	Arizona, USA	Nit 127L1
77	<i>Phaseolus wrightii</i>	Nitragin Co., Wisconsin, USA	Arizona, USA	Nit 127L2
78	<i>Phaseolus wrightii</i>	Nitragin Co., Wisconsin, USA	Arizona, USA	Nit 127L3
79	<i>Phaseolus wrightii</i>	Nitragin Co., Wisconsin, USA	Arizona, USA	Nit 127L4
80	<i>Calliandra calothyrsus</i>	Commonwealth Forestry Institute, U.K.	Nicaragua	NifTAL original
81	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
82*	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
83	<i>Phaseolus lunatus</i>	Nitragin Co., Wisconsin, USA	Illinois, USA	Nit 127E12
84	<i>Centrosema pubescens</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 2588
85	<i>Stylosanthes species</i>	IITA, Nigeria	Nigeria	NifTAL original
86	<i>Phaseolus penduratus</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 127N2
87	<i>Phaseolus heterophyllis</i>	Nitragin Co., Wisconsin, USA	Arizona, USA	Nit 127P1
88	<i>Lablab purpureus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
89	<i>Phaseolus heterophyllis</i>	Nitragin Co., Wisconsin, USA	Arizona, USA	Nit 127P2
90	<i>Vigna radiata</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 127D3
91	<i>Vigna radiata</i>	Nitragin Co., Wisconsin, USA	Taiwan	Nit 127D6
92	<i>Calopogonium species</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 26Z4
93	<i>Centrosema fashola</i>	IITA, Nigeria	Nigeria	NifTAL original
94	<i>Lotus corniculatus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
95	<i>Lotus corniculatus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
96	<i>Lotus corniculatus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
97	<i>Voandzeia subterranea</i>	IITA, Nigeria	Nigeria	NifTAL original
98	<i>Vigna unguiculata</i>	CIAT, Colombia	Colombia	CIAT 239
99	<i>Glycine max</i>	USDA, Beltsville, Md., USA	Not known	USDA 24
100	<i>Glycine max</i>	USDA, Beltsville, Md., USA	Not known	USDA 71

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
101	Glycine max	USDA, Beltsville, Md., USA	Not known	USDA 86
102*	Glycine max	USDA, Beltsville, Md., USA	Florida, USA	USDA 110, IITA 18
103	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit 61A118
104	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit 61A76
105	Glycine max	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Mutant Nit 61A76
106	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit 61A76-132
107	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit 61A76-34
108	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit 61A76-31
109	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit 61A76-66
110	Glycine max	NifTAL Project, Maui, Hawaii	Not known	Nit 61A76-35
111	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
112	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
113	Phaseolus species	University of Wisconsin	Not known	No synonyms
114	Cassia leschenaultiana	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
115	Glycine max	Nitragin Co., Wisconsin, USA	Not known	Nit Rj61A76-185
116	Lablab purpureus	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
117	Lablab purpureus	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
118	Cassia leschenaultiana	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
119	Cassia leschenaultiana	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
120	Cajanus cajan	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
121	Cajanus cajan	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
122	Crotalaria species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
123	Macroptilium atropurpureum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
124	Desmodium intortum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
125	Desmodium intortum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
126	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
127	Desmodium uncinatum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
128	Desmodium uncinatum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
129	Desmodium uncinatum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
130	Cajanus cajan	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
131	Cajanus cajan	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
132	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
133	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
134	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
135	Cassia leschenaultiana	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
136	Cassia leschenaultiana	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
137	Cassia leschenaultiana	Haiku Exp. Station, Maui, Hawaii	Hawaii, USA	NifTAL original
138	Mimosa pudica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
139	Medicago minima	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
140	Stylosanthes species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
141	Stylosanthes species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
142	Medicago minima	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
143	Trifolium repens	Rubber Res. Inst. of Malaysia	United Kingdom	BB1, RCR3
144	Leucaena leucocephala	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
145	Trifolium repens	Rubber Res. Inst. of Malaysia	United Kingdom	Strep resist. RCR3
146	Trifolium subterraneum	Rubber Res. Inst. of Malaysia	Tasmania	RCR 221spc
147	Macroptilium lathyroides	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
148	Medicago sativa	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms
149	Glycine max	Inst. of Soils & Fert., Beijing, China	China	PRC 005
150	Glycine max	Inst. of Soils & Fert., Beijing, China	China	Hu 24

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
151	<i>Trifolium subterraneum</i>	Kula Exp. Station, Maui, Hawaii	Hawaii, USA	NifTAL original
152	<i>Acacia pennatula</i>	Commonwealth Forestry Institute, U.K.	Hondurus	NifTAL original
153	<i>Glycine max</i>	Inst. of Soils & Fert., Beijing, China	China	Hu 15
154	<i>Glycine max</i>	Inst. of Soils & Fert., Beijing, China	China	Hu 5
155	<i>Glycine max</i>	Inst. of Soils & Fert., Beijing, China	China	PRC 113-2
156	<i>Arachis hypogaea</i>	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
157	<i>Phaseolus lunatus</i>	IITA, Nigeria	Nigeria	NifTAL original
158	<i>Acacia pennatula</i>	Commonwealth Forestry Institute	Hondurus	NifTAL original
159	<i>Arachis hypogaea</i>	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
160	<i>Sphenostylis stenocarpa</i>	IITA, Nigeria	Nigeria	NifTAL original
161	<i>Sphenostylis stenocarpa</i>	IITA, Nigeria	Nigeria	NifTAL original
162	<i>Arachis hypogaea</i>	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
163**	<i>Vigna unguiculata</i>	IITA, Nigeria	Nigeria	NifTAL original
164	<i>Arachis hypogaea</i>	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
165	<i>Lablab purpureus</i>	IITA, Nigeria	Nigeria	NifTAL original
166	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Nit 162B13
167	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Holland	Nit 175F1
168	<i>Lotus pedunculatus</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 95E9
169*	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Wisconsin	Nit 176A22
170	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Nit 176A23
171	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 176A27
172	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 176A28
173*	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 176A30
174	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 176A32
175	<i>Arachis hypogaea</i>	Nitragin Co., Wisconsin, USA	Texas, USA	Nit 8A11
176	<i>Arachis hypogaea</i>	Nitragin Co., Wisconsin, USA	Virginia, USA	Nit 8A14
177	<i>Arachis hypogaea</i>	Nitragin Co., Wisconsin, USA	Texas, USA	Nit 8A16
178	<i>Lotus americanus</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 95A2
179	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
180	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
181	<i>Arachis hypogaea</i>	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
182*	<i>Phaseolus vulgaris</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
183	<i>Robinia pseudoacacia</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 137A4
184	<i>Robinia pseudoacacia</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 137B3
185	<i>Lotus corniculatus</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 95C11
186	<i>Desmodium triflorum</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 41K6
187	<i>Lotus pedunculatus</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 95E6
188	<i>Psophocarpus palustris</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 132A4
189	<i>Vigna unguiculata</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 176A31
190	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 162B14
191	<i>Cajanus cajan</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 21A8
192	<i>Pueraria phaseoloides</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 130C2
193	<i>Galactia striata</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 58B1
194	<i>Centrosema species</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 25Z1
195	<i>Neonotonia wightii</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 61B14
196	<i>Robinia pseudoacacia</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 137A3
197**	<i>Lablab purpureus</i>	Nitragin Co., Wisconsin, USA	Brazil	Nit 42B3
198	<i>Lotus corniculatus</i>	University of Guelph, Canada	Not known	NZP 2213, ATCC 33669
199	<i>Stizolobium deeringianum</i>	Nitragin Co., Wisconsin, USA	Not known	Nit 147A3
200	<i>Stylosanthes guianensis</i>	Nitragin Co., Wisconsin, USA	Nigeria	Nit 150C6

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
201**	Canavalia ensiformis	Nitragin Co., Wisconsin, USA	Brazil	Nit 22A4
202	Desmodium barbatum	Nitragin Co., Wisconsin, USA	Brazil	Nit 41H1
203	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
204	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
205	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
206	Canavalia sericea	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
207	Canavalia sericea	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
208	Canavalia sericea	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
209*	Vigna radiata	USAID, Washington, D.C., USA	Thailand	NifTAL original
210	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
211	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
212	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
213	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
214	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
215	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
216	Glycine max	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
217	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
218	Pisum sativum	USAID, Washington D.C., USA	Thailand	NifTAL original
219	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
220	Phaseolus vulgaris	USAID, Washington D.C., USA	Thailand	NifTAL original
221	Arachis hypogaea	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
222	Coronilla cretica	Nitragin Co., Wisconsin, USA	Not known	Nit 31A3
223	Psophocarpus tetragonolobus	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
224	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
225	Cajanus cajan	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
226	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
227	Pisum sativum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
228**	Psophocarpus tetragonolobus	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
229	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
230	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
231	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
232	Phaseolus vulgaris	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
233	Psophocarpus tetragonolobus	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
234	Lotus corniculatus	Nitragin Co., Wisconsin, USA	Not known	Nit 95C14
235	Vigna unguiculata	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
236	Arachis hypogaea	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
237	Lablab purpureus	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
238	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
239	Cicer arietinum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
240	Glycine max	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
241	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
242	Psophocarpus tetragonolobus	East Maui Irrigation Co., Hawaii	Hawaii, USA	NifTAL original
243	Cajanus cajan	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
244	Lotus uliginosus	University of Hawaii	Hawaii, USA	NifTAL original
245	Cassia species	University of Hawaii	Hawaii, USA	NifTAL original
246	Desmodium species	University of Hawaii	Hawaii, USA	NifTAL original
247	Desmodium species	University of Hawaii	Hawaii, USA	NifTAL original
248	Desmodium species	University of Hawaii	Hawaii, USA	NifTAL original
249	Cassia species	University of Hawaii	Hawaii, USA	NifTAL original
250	Cassia species	University of Hawaii	Hawaii, USA	NifTAL original

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
251	Desmodium species	University of Hawaii	Hawaii, USA	NifTAL original
252	Stylosanthes species	University of Hawaii	Hawaii, USA	NifTAL original
253	Sesbania macrocarpa	University of Hawaii	Maryland, USA	USDA 3F4a4
254	Indigofera endecaphylla	University of Hawaii	Hawaii, USA	NifTAL original
255	Cajanus cajan	University of Hawaii	Hawaii, USA	NifTAL original
256	Cajanus cajan	University of Hawaii	Hawaii, USA	NifTAL original
257	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
258	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
259	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
260	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
261	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
262	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
263	Cicer arietinum	Univ. of New South Wales, Australia	Not known	NU 191
264	Cassia leschenaultiana	University of Hawaii	Hawaii, USA	NifTAL original
265	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
266	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
267	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
268	Lens culinaris	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
269	Medicago species	University of Hawaii	Hawaii, USA	NifTAL original
270	Centrosema pubescens	University of Hawaii	Hawaii, USA	NifTAL original
271	Desmodium triflorum	University of Hawaii	Hawaii, USA	NifTAL original
272	Desmodium tortuosum	University of Hawaii	Hawaii, USA	NifTAL original
273	Clitoria ternatea	University of Hawaii	Hawaii, USA	NifTAL original
274	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
275	Lens culinaris	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
276	Desmanthus virgatus	University of Hawaii	Hawaii, USA	NifTAL original
277	Cassia leschenaultiana	University of Hawaii	Hawaii, USA	NifTAL original
278	Desmodium sandwicense	University of Hawaii	Hawaii, USA	NifTAL original
279	Desmodium sandwicense	University of Hawaii	Hawaii, USA	NifTAL original
280	Desmodium sandwicense	University of Hawaii	Hawaii, USA	NifTAL original
281	Desmodium canum	University of Hawaii	Hawaii, USA	NifTAL original
282	Desmodium canum	University of Hawaii	Hawaii, USA	NifTAL original
283	Indigofera suffruticosa	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
284	Desmodium sandwicense	University of Hawaii	Hawaii, USA	NifTAL original
285	Clitoria ternatea	University of Hawaii	Hawaii, USA	NifTAL original
286	Clitoria ternatea	University of Hawaii	Hawaii, USA	NifTAL original
287	Crotalaria species	University of Hawaii	Hawaii, USA	NifTAL original
288	Desmodium tortuosum	University of Hawaii	Hawaii, USA	NifTAL original
289	Indigofera endecaphylla	University of Hawaii	Hawaii, USA	NifTAL original
290	Indigofera suffruticosa	University of Hawaii	Hawaii, USA	NifTAL original
291	Glycine max	University of Hawaii	Hawaii, USA	NifTAL original
292	Crotalaria species	University of Hawaii	Hawaii, USA	NifTAL original
293	Trifolium repens	University of Hawaii	Hawaii, USA	NifTAL original
294	Crotalaria species	University of Hawaii	Hawaii, USA	NifTAL original
295	Arachis hypogaea	University of Hawaii	Not known	W-5
296	Cassia leschenaultiana	University of Hawaii	Hawaii, USA	NifTAL original
297	Cassia leschenaultiana	University of Hawaii	Hawaii, USA	NifTAL original
298	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
299	Glycine max	University of Hawaii	Hawaii, USA	NifTAL original
300	Acacia koa	University of Hawaii	Hawaii, USA	NifTAL original

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
301	Acacia koa	University of Hawaii	Hawaii, USA	NifTAL original
302	Acacia koa	Nitragin Co., Wisconsin, USA	Hawaii, USA	Nit 150C6
303	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Not known	Nit 162B15
304	Vigna radiata	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
305	Vigna radiata	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
306	Vigna radiata	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
307	Glycine max	NifTAL Project, Maui, Hawaii	Not known	NifTAL original
308	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
309*	Macrotyloma africanum	University of Sydney, Australia	Zimbabwe	CB 756
310*	Macrotyloma uniflorum	University of Sydney, Australia	India	CB 1024, CIAT 111
311	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
312	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 TECp1
313	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
314	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
315	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 ApCp6
316	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	06 LCp2
317	Cicer arietinum	Ankara University, Turkey	Turkey	03 KOSCp3
318	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 KhCp4
319	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 TKhCp1
320	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 TKCp1
321	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 ApCp5
322	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 CKCp1
323	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 CKCp3
324	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
325	Arachis hypogaea	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
326	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 ApCp4
327	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 TECp2
328	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 KhCp2
329	Cicer arietinum	Ankara University, Turkey	Turkey	03 ECp1
330	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 CkTCp1
331	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	06 LCp1
332	Arachis hypogaea	Bangladesh Agric. Res. Institution	Bangladesh	NifTAL original
333	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	03 KOSCp4
334	Cicer arietinum	Ankara University, Turkey	Turkey	03 ECp2
335	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 CKTCp2
336	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 CkCp2
337	Cicer arietinum	Ankara University, Ankara	Turkey	20 TBCp1
338	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	20 KhCp1
339	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	03 KOSCp2
340	Cicer arietinum	A.U. Ziraat Fakultes, Turkey	Not known	03 KOSCp1
341	Cicer arietinum	Ankara University, Turkey	Turkey	20 TKhCp2
342	Cicer arietinum	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
343	Lens culinaris	Bangladesh Agric. Res. Institute	Bangladesh	NifTAL original
344	Xylia dolabriformis	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
345	Cassia leschenaultiana	University of Hawaii	Hawaii, USA	NifTAL original
346	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
347	Crotalaria mucronata	University of Hawaii	Hawaii, USA	NifTAL original
348	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
349	Xylia dolabriformis	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
350	Indigofera suffruticosa	University of Hawaii	Hawaii, USA	NifTAL original

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
351	Albizia lebbek	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
352	Albizia lebbek	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
353	Sesbania grandiflora	NifTAL Project, Maui, Hawaii	Burma	NifTAL original
354	Macroptilium lathyroides	University of Hawaii	Hawaii, USA	NifTAL original
355	Sesbania grandiflora	NifTAL Project, Maui, Hawaii	Burma	NifTAL original
356	Medicago species	University of Hawaii	Hawaii, USA	NifTAL original
357	Pterocarpus macrocarpus	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
358	Pterocarpus macrocarpus	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
359	Xylia dolabriformis	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
360	Vigna luteola	NifTAL Project, Maui, Hawaii	Western Samoa	NifTAL original
361	Vigna luteola	NifTAL Project, Maui, Hawaii	Western Samoa	NifTAL original
362	Albizia lebbek	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
363	Albizia lebbek	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
364	Albizia lebbek	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
365	Albizia lebbek	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
366	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
367	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
368	Lablab purpureus	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms
369	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
370	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
371	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
372	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
373	Canavalia ensiformis	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
374	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
375	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
376	Glycine max	University of Minnesota	Not known	USDA 123
377*	Glycine max	University of Minnesota	Miss. USA	USDA 138
378	Glycine max	University of Sydney, Australia	Not known	CC 709
379*	Glycine max	University of Sydney, Australia	Maryland, USA	CB 1809, USDA 136b
380*	Medicago sativa	University of Sydney, Australia	NSW, Australia	SU 47
381	Medicago species	University of Sydney, Australia	Australia	SU 794
382	Trifolium species	CSIRO, Brisbane	Australia	CB 782
383	Glycine max	Nagoya University, Japan	Not known	001/NPN
384	Glycine max	Nagoya University, Japan	Japan	No synonyms
385	Cicer arietinum	CSIRO, Australia	Not known	CB 1189, USDA 340a1
386	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
387	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
388	Arachis hypogaea	Bactogin Labs, Jabalpur, India	Not known	173/BLR
389	Cajanus cajan	Bactogin Labs, Jabalpur, India	Not known	223/BLR
390	Glycine max	University of Philippines, Los Banos	Not known	S-4
391	Glycine max	University of Philippines, Los Banos	Not known	S-38
392	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
393	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
394	Vigna radiata	Chiang Mai University, Thailand	Thailand	MB-2
395	Vigna radiata	Chiang Mai University, Thailand	Thailand	No synonyms
396	Vigna radiata	Chiang Mai University, Thailand	Thailand	MB-4
397	Vigna radiata	Chiang Mai University, Thailand	Thailand	MB-5
398	Vigna radiata	Chiang Mai University, Thailand	Thailand	MB-Black
399	Vigna radiata	Chiang Mai University, Thailand	Thailand	No synonyms
400	Vigna unguiculata	Chiang Mai University, Thailand	Thailand	No synonyms

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
401	<i>Glycine max</i>	Chiang Mai University, Thailand	Thailand	No synonyms
402	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
403	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
404	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
405	<i>Stylosanthes guianensis</i>	Univ. Nat. Mayor de San Marcos, Peru	Peru	USM 18
406	<i>Stylosanthes guianensis</i>	Univ. Nat. Mayor de San Marcos, Peru	Peru	USM 19
407	<i>Lupinus mutabilis</i>	Univ. Nat. Mayor de San Marcos, Peru	Peru	USM 32
408	<i>Macroptilium lathyroides</i>	Univ. Nat. Mayor de San Marcos, Peru	Peru	USM 34
409	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 1
410	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 2
411	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 3
412	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 6
413	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 7
414	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 8
415	<i>Glycine max</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 9
416	<i>Arachis hypogaea</i>	Dept. of Agriculture, Bangkok, Thailand	Not known	THA 201
417	<i>Arachis hypogaea</i>	Dept. of Agriculture, Bangkok, Thailand	Not known	THA 202
418	<i>Arachis hypogaea</i>	Dept. of Agriculture, Bangkok, Thailand	Not known	THA 203
419	<i>Arachis hypogaea</i>	Dept. of Agriculture, Bangkok, Thailand	Not known	THA 205
420*	<i>Vigna radiata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 301
421	<i>Vigna radiata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 302
422	<i>Vigna radiata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 303
423	<i>Vigna radiata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 304
424	<i>Vigna radiata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 305
425	<i>Vigna radiata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 306
426	<i>Vigna unguiculata</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	No synonyms
427	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Brazil	UFGRS 509
428	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 527
429	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 530Re
430	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 531Re
431	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 532c
432	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 543
433	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 566
434	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Not known	UFGRS 564
435	<i>Glycine max</i>	UFGRS, Porto Alegre, Brazil	Brazil	UFGRS 587
436	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
437	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M2
438	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M3
439	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M4
440	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M5
441*	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M6
442	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M7
443	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M8
444	<i>Medicago sativa</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 122
445	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
446	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
447	<i>Voandzeia subterranea</i>	A.R.D., Nairobi, Kenya	Kenya	NifTAL original
448	<i>Trifolium alexandrinum</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 206
449	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
450	<i>Trifolium alexandrinum</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 216

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
451	<i>Trifolium alexandrinum</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 207
452	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
453	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
454	<i>Vicia faba</i>	NIFTAL Project, Maui, Hawaii	Iraq	IQ 304
455	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
456	<i>Vigna radiata</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 108-5
457	<i>Vigna radiata</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 92-1
458	<i>Vigna radiata</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 102-1
459	<i>Phaseolus vulgaris</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 403
460	<i>Phaseolus vulgaris</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 403
461	<i>Phaseolus vulgaris</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 422
462	<i>Phaseolus vulgaris</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	No synonyms
463	<i>Vigna radiata</i>	State Org. of Soil & Land Reclam., Iraq	Iraq	IQ 68-5
464	<i>Arachis hypogaea</i>	Leg. Inoc. Div., Agric. Res. Org. Israel	Israel	38b/70
465	<i>Arachis hypogaea</i>	Leg. Inoc. Div., Agric. Res. Org. Israel	Israel	280A
466	<i>Arachis hypogaea</i>	Leg. Inoc. Div., Agric. Res. Org. Israel	Not known	R/283A1
467	<i>Centrosema pubescens</i>	EMBRAPA, Brazil	Brazil	C 102
468	<i>Glycine javanica</i>	EMBRAPA, Brazil	Brazil	P105a
469	<i>Crotalaria juncea</i>	EMBRAPA, Brazil	Liberia	CJ1
470	<i>Indigofera species</i>	EMBRAPA, Brazil	Not known	I1a
471	<i>Centrosema pubescens</i>	EMBRAPA, Brazil	Brazil	C 29
472	<i>Sesbania grandiflora</i>	University of Hawaii	Hawaii, USA	NIFTAL original
473	<i>Sesbania arborea</i>	University of Hawaii	Hawaii, USA	NIFTAL original
474	<i>Arachis hypogaea</i>	AVRDC, Taiwan	Not known	AVRDC 1
475	<i>Arachis hypogaea</i>	AVRDC, Taiwan	Not known	AVRDC 2
476	<i>Arachis hypogaea</i>	AVRDC, Taiwan	Not known	AVRDC 8
477	<i>Vigna unguiculata</i>	AVRDC, Taiwan	Taiwan	AVRDC 15
478	<i>Arachis hypogaea</i>	AVRDC, Taiwan	Not known	AVRDC 25
479	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
480*	<i>Cicer arietinum</i>	Univ. of Agric. Sci., Bangalore, India	India	UASB 67
481	<i>Arachis hypogaea</i>	Univ. of Agric. Sci., Bangalore, India	India	USAB 94
482	<i>Arachis hypogaea</i>	Univ. of Agric. Sci., Bangalore, India	India	USAB 95
483	<i>Arachis hypogaea</i>	Univ. of Agric. Sci., Bangalore, India	India	USAB 96
484	<i>Arachis hypogaea</i>	Agric. Res. Inst., Bangladesh	Bangladesh	NIFTAL original
485	<i>Vigna unguiculata</i>	Univ. of Agric. Sci., Bangalore, India	India	UASB 120
486	<i>Vigna unguiculata</i>	Univ. of Agric. Sci., Bangalore, India	India	UASB 125
487	<i>Glycine max</i>	Univ. of Agric. Sci., Bangalore, India	India	UASB 126
488	<i>Glycine max</i>	Univ. of Agric. Sci., Bangalore, India	India	UASB 128
489	<i>Glycine max</i>	Univ. of Agric. Sci., Bangalore, India	India	UASB 135
490	<i>Phaseolus vulgaris</i>	Univ. of Agric. Sci., Bangalore, India	India	USAB 198
491	<i>Crotalaria juncea</i>	Bogor Agricultural University, Indonesia	Indonesia	No synonyms
492	<i>Desmodium intortum</i>	Bogor Agricultural University, Indonesia	Indonesia	No synonyms
493	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
494	<i>Glycine max</i>	Bogor Agricultural University, Indonesia	Indonesia	No synonyms
495	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
496	<i>Glycine max</i>	Bureau of Soils, Manila, Philippines	Not known	Brazil 114
497	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
498	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
499	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original
500	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NIFTAL original

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
501	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
502	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
503	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
504	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
505	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
506	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
507	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
508	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
509	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
510	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
511	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
512	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
513	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
514	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
515	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
516	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
517	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
518	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
519	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
520	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
521	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
522	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
523	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
524	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
525	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
526	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
527	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
528	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
529	Desmodium canum	NifTAL Project, Maui, Hawaii	Not known	NifTAL original
530	Indigofera suffruticosa	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
531	Indigofera suffruticosa	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
532	Indigofera suffruticosa	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
533	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
534	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
535	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
536	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
537	Macroptilium atropurpureum	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
538	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
539	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
540	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
541	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
542	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
543	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
544	Desmodium intortum	NifTAL Project, Maui, Hawaii	S.Carolina, USA	No synonyms
545	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
546	Voandzeia subterranea	ARD, Nairobi, Kenya	Kenya	NifTAL original
547	Vigna sesquipedalis	Bogor Agricultural University, Indonesia	Indonesia	No synonyms
548	Vigna sesquipedalis	Bogor Agricultural University, Indonesia	Indonesia	No synonyms
549	Desmodium sandwichense	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms
550	Desmodium sandwichense	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
551	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
552	<i>Cassia leschenaultiana</i>	University of Hawaii	Hawaii, USA	NifTAL original
553	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
554	<i>Cassia leschenaultiana</i>	University of Hawaii	Hawaii, USA	NifTAL original
555	<i>Macroptilium atropurpureum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
556**	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
557	<i>Macroptilium atropurpureum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
558	<i>Macroptilium atropurpureum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
559	<i>Glycine max</i>	ISAR, Rwanda	Not known	ISAR A-1
560	<i>Glycine max</i>	ISAR, Rwanda	Not known	ISAR C-13
561	<i>Glycine max</i>	ISAR, Rwanda	Not known	ISAR 315
562	<i>Pisum sativum</i>	ISAR, Rwanda	USA	SU 391
563	<i>Indigofera species</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 377
564	<i>Voandzeia subterranea</i>	ARD, Nairobi, Kenya	Kenya	NifTAL original
565	<i>Arachis hypogaea</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 411
566	<i>Crotalaria natalitia</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 414
567**	<i>Crotalaria ochroleuca</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 464
568	<i>Arachis hypogaea</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 468
569*	<i>Desmodium uncinatum</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 472
570	<i>Vigna radiata</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 484
571	<i>Mimosa invisa</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
572	<i>Desmodium cinereum</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 600
573	<i>Pseudarthria hookeri</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 653
574	<i>Mucuna deeringianum</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 57
575	<i>Mimosa invisa</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
576	<i>Mimosa invisa</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
577	<i>Trifolium semipilosum</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 1293
578	<i>Stylosanthes fructicosa</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 995
579**	<i>Canavalia virosa</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 998
580	<i>Crotalaria juncea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
581	<i>Dolichos sericeus</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 1069
582*	<i>Leucaena leucocephala</i>	CSIRO, Brisbane, Australia	Australia	CB 81
583	<i>Leucaena leucocephala</i>	CSIRO, Brisbane, Australia	New Guinea	NGR 8, CB 948
584	<i>Trifolium ambiguum</i>	CSIRO, Brisbane, Australia	Turkey	CC 231a
585	<i>Trifolium ambiguum</i>	CSIRO, Brisbane, Australia	Krasnodar, USSR	CC 283b
586	<i>Mimosa invisa</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
587	<i>Ornithopus compressus</i>	CSIRO, Brisbane, Australia	Australia	WU 425
588	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
589	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
590	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
591	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
592	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
593	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
594	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
595	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
596	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
597	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
598	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
599	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
600**	<i>Prosopis chilensis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
601	<i>Prosopis chilensis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
602	<i>Prosopis chilensis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
603	<i>Prosopis chilensis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
604	<i>Prosopis chilensis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
605	<i>Prosopis chilensis</i>	NifTAL Project, Maui, Hawaii	Not known	No synonyms
606	<i>Phaseolus adenanthus</i>	CIAT, Colombia	Not known	CIAT 481
607	<i>Crotalaria juncea</i>	NifTAL Project, Maui, Hawaii	Not known	No synonyms
608	<i>Stizolobium deeringianum</i>	CIAT, Colombia	Colombia	CIAT 179
609	<i>Cajanus cajan</i>	CIAT, Colombia	Colombia	CIAT 369
610	<i>Cajanus cajan</i>	CIAT, Colombia	Ecuador	CIAT 374
611	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
612	<i>Pisum arvense</i>	CIAT, Colombia	Not known	CIAT 27, SU 567
613	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 57
614	<i>Hedysarum carnosum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
615	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 432
616	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
617	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 434
618	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 323
619	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	RCR 3827
620*	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	ICRISAT 3889 CB 1189
621	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	DNR, a
622	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	Ca 5
623	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	Ca 7
624	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 147
625	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 149
626	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 159
627	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 155
628	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 136
629	<i>Glycine max</i>	University of Wisconsin	Penn., USA	Allen 527, USDA 704
630	<i>Glycine max</i>	University of Wisconsin	USDA 500	Allen 511
631	<i>Glycine max</i>	University of Wisconsin	Hawaii, USA	Allen 519
632	<i>Glycine max</i>	University of Wisconsin	Argentina	Allen 542
633	<i>Glycine max</i>	University of Wisconsin	Argentina	Allen 543
634*	<i>Lathyrus hirsutus</i>	University of Hawaii	Miss., USA	NZP 5400, Nit 92A3
635	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
636	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
637	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
638*	<i>Lens culinaris</i>	University of Hawaii	Hawaii, USA	I-2
639	<i>Lotus palustris</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
640*	<i>Lens culinaris</i>	University of Hawaii	Hawaii, USA	I-11
641	<i>Vigna unguiculata</i>	University of Malaya	Malaysia	UMKL 35
642	<i>Lablab purpureus</i>	University of Malaya	Malaysia	UMKL 36
643**	<i>Canavalia gladiata</i>	University of Malaya	Malaysia	UMKL 25
644**	<i>Phaseolus acutifolius</i>	CIAT, Colombia	Not known	CIAT 257, 94/RIO
645**	<i>Vigna angularis</i>	University of Malaya	Malaysia	UMKL 12
646	<i>Cajanus cajan</i>	CIAT, Colombia	Nigeria	CIAT 400
647**	<i>Pueraria phaseoloides</i>	University of Malaya	Malaysia	UMKL 56
648**	<i>Psophocarpus tetragonolobus</i>	University of Malaya	Malaysia	UMKL 648
649	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 52
650	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 22

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
651*	<i>Calopogonium mucunoides</i>	University of Malaya	Malaysia	UMKL 44
652	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 08
653	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 47
654	<i>Lotus palustris</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
655*	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 09
656**	<i>Pachyrhizus erosus</i>	University of Malaya	Malaysia	UMKL 82
657**	<i>Pachyrhizus erosus</i>	University of Malaya	Malaysia	UMKL 81
658*	<i>Stylosanthes species</i>	CIAT, Colombia	Colombia	CIAT 71
659	<i>Phaseolus vulgaris</i>	University of Wisconsin	Not known	Allen 413-2
660	<i>Phaseolus vulgaris</i>	University of Wisconsin	Chile	Allen 420
661	<i>Phaseolus vulgaris</i>	University of Wisconsin	Chile	Allen 421
662	<i>Phaseolus vulgaris</i>	University of Wisconsin	Chile	Allen 422
663	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 40, Nit 127K26
664	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 248
665	<i>Phaseolus vulgaris</i>	CIAT, Colombia	Not known	CIAT 249
666	<i>Stylosanthes species</i>	CIAT, Colombia	Colombia	CIAT 308
667*	<i>Desmodium intortum</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 471
668	<i>Vigna unguiculata</i>	INRA, Dijon, France	Not known	GU1
669	<i>Cicer arietinum</i>	University of Wisconsin	Not known	Allen 735, USDA 330
670	<i>Trifolium resupinatum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
671	<i>Lablab purpureus</i>	CIAT, Colombia	Not known	CIAT 336
672	<i>Lablab purpureus</i>	CIAT, Colombia	Bolivia	CIAT 337
673	<i>Vigna radiata</i>	Haryana Agri. Univ., Hissar, India	India	Hissar M-1
674	<i>Sesbania rostrata</i>	University of Hawaii	Hawaii, USA	No synonyms
675	<i>Vigna radiata</i>	Haryana Agric. Univ., Hissar, India	India	Hissar R-3
676	<i>Vigna species</i>	Haryana Agric. Univ., Hissar, India	India	Hissar M-11
677	<i>Medicago murex</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
678	<i>Medicago murex</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
679	<i>Medicago murex</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
680	<i>Lotus edulis</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
681	<i>Lotus edulis</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
682	<i>Astragalus cruciatus</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
683	<i>Trifolium subterraneum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
684**	<i>Vigna frutescens</i>	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 429
685	<i>Anthyllis tetraphylla</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
686	<i>Anthyllis tetraphylla</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
687	<i>Trifolium resupinatum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
688	<i>Centrosema pubescens</i>	CSIRO, Australia	Brazil	CB 1923; SFS 261
689	<i>Stylosanthes guyanensis</i>	CSIRO, Australia	Brazil	CB 1650
690	<i>Lotononis bainesii</i>	CSIRO, Brisbane	South Africa	CB 376; SU 452
691	<i>Desmodium intortum</i>	CSIRO, Australia	Belgian Congo	CB 627; SU 370
692	<i>Medicago murex</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
693	<i>Scorpiurus muricatus</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
694	<i>Glycine max</i>	USDA, Beltsville, Maryland, USA	Not known	USDA 117
695	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Not known	NifTAL original
696	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Not known	NifTAL original
697	<i>Medicago ciliaris</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
698	<i>Medicago ciliaris</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
699	<i>Arachis prostrata</i>	CSIRO, Australia	Australia	CB 530
700	<i>Medicago laciniata</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
701	Melilotus sulcata	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
702	Ononis species	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
703	Scorpiurus muricatus	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
704	Scorpiurus muricatus	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
705	Trifolium stellatum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
706	Tetragandus purpureus	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
707	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
708	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
709	Trifolium fragiferum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
710	Trifolium fragiferum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
711	Trifolium subterraneum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
712	Trifolium subterraneum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
713	Trifolium subterraneum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
714	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
715	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
716	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
717	Aeschynomene species	CIAT, Colombia	Not known	CIAT 421
718	Aeschynomene species	CIAT, Colombia	Not known	CIAT 501
719	Aeschynomene americana	CIAT, Colombia	Colombia	CIAT 465
720	Aeschynomene brasiliana	CIAT, Colombia	Colombia	CIAT 500
721	Leucaena leucocephala	CIAT, Colombia	Not known	CIAT 346
722	Alysicarpus vaginalis	CIAT, Colombia	Not known	CIAT 241
723	Alysicarpus vaginalis	CIAT, Colombia	Colombia	CIAT 242
724	Alysicarpus vaginalis	CIAT, Colombia	Colombia	CIAT 503
725	Arachis hypogaea	CIAT, Colombia	Japan	CIAT 396
726	Bauhinia species	CIAT, Colombia	Not known	CIAT 347
727**	Calopogonium caeruleum	CIAT, Colombia	Colombia	CIAT 493
728	Centrosema brasilianum	CIAT, Colombia	Mexico	CIAT 583
729	Clitoria rubiginosa	CIAT, Colombia	Colombia	CIAT 424
730	Clitoria rubiginosa	CIAT, Colombia	Colombia	CIAT 425
731	Canavalia species	CIAT, Colombia	Colombia	CIAT 273
732	Coronilla species	CIAT, Colombia	Colombia	CIAT 690
733	Crotalaria juncea	CIAT, Colombia	Not known	CIAT 275
734**	Crotalaria juncea	CIAT, Colombia	Colombia	CIAT 276
735	Desmodium species	CIAT, Colombia	Australia	CIAT 46
736	Desmodium species	CIAT, Colombia	Colombia	CIAT 136
737	Desmodium species	CIAT, Colombia	Not known	CIAT 136
738	Desmodium species	CIAT, Colombia	Colombia	CIAT 254
739	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
740	Trifolium alexandrinum	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
741	Desmodium distortum	CIAT, Colombia	Colombia	CIAT 187
742	Desmodium heterophyllum	CIAT, Colombia	Not known	CIAT 80
743	Desmodium uniflorum	CIAT, Colombia	Colombia	CIAT 507
744	Lotus corniculatus	Nitragin Co., Wisconsin, USA	Not known	Nit 95C13
745	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
746	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NiftAL original
747	Dolichos biflorus	CIAT, Colombia	Not known	CIAT 32, Nit 45
748	Dolichos biflorus	CIAT, Colombia	Not known	CIAT 43, CB 155
749	Erythrina indica	CIAT, Colombia	Not known	CIAT 35
750	Galactia species	CIAT, Colombia	Not known	CIAT 378

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.



TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Module/strain origin	Other designations
751	Galactia species	CIAT, Colombia	Colombia	CIAT 426
752	Galactia species	CIAT, Colombia	Colombia	CIAT 427
753	Galactia striata	CIAT, Colombia	Not known	CIAT 558
754	Galactia striata	CIAT, Colombia	Not known	CIAT 562
755	Galactia striata	CIAT, Colombia	Not known	CIAT 681
756	Glycine max	CIAT, Colombia	Not known	CIAT 51
757	Glycine max	CIAT, Colombia	Zimbabwe	CIAT 4
758	Neonotonia wightii	CIAT, Colombia	Mexico	CIAT 598
759	Indigofera species	CIAT, Colombia	Colombia	CIAT 412
760	Indigofera hirsuta	CIAT, Colombia	Mexico	CIAT 494
761	Indigofera hirsuta	CIAT, Colombia	Mexico	CIAT 576
762	Leucaena leucocephala	CIAT, Colombia	Colombia	CIAT 685
763	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
764	Lupinus angustifolius	CIAT, Colombia	Not known	CIAT 317
765	Lupinus angustifolius	CIAT, Colombia	Not known	CIAT 687
766	Phaseolus acutifolius	CIAT, Colombia	Not known	CIAT 257
767	Vigna angularis	CIAT, Colombia	Zimbabwe	CIAT 107
768**	Vigna angularis	CIAT, Colombia	Not known	CIAT 108
769	Vigna angularis	CIAT, Colombia	Not known	CIAT 230
770	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
771	Vigna angularis	CIAT, Colombia	Not known	CIAT 246
772	Vigna angularis	CIAT, Colombia	Not known	CIAT 247
773	Vigna aureus	CIAT, Colombia	Not known	CIAT 85
774	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
775	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
776	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
777	Vigna umbellata	CIAT, Colombia	Not known	CIAT 190
778	Glycine max	USDA, Beltsville, Maryland, USA	Not known	USDA 31
779	Phaseolus lunatus	CIAT, Colombia	Not known	CIAT 518, 96/RIO
780	Vigna radiata	CIAT, Colombia	Not known	CIAT 87
781	Medicago sativa	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
782	Anthyllis vulneraria	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
783	Phaseolus vulgaris	CIAT, Colombia	Not known	CIAT 139
784	Phaseolus vulgaris	CIAT, Colombia	Not known	CIAT 248
785	Anthyllis vulneraria	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
786	Anthyllis vulneraria	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
787	Anthyllis vulneraria	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
788	Melilotus sulcata	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
789	Melilotus sulcata	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
790	Melilotus sulcata	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
791	Melilotus sulcata	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
792	Ebenus pinneria	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
793	Hedysarum coronarium	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
794	Stylosanthes hamata	CIAT, Colombia	Colombia	CIAT 543
795	Tephrosia glauca	CIAT, Colombia	Colombia	CIAT 496
796	Teramnus uncinatus	CIAT, Colombia	Colombia	CIAT 473
797	Hedysarum coronarium	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
798	Trifolium semipilosum	CIAT, Colombia	Zimbabwe	CIAT 22
799	Trifolium semipilosum	CIAT, Colombia	Kenya	CIAT 26 CB 782 SU771
800	Vigna unguiculata	CIAT, Colombia	Colombia	CIAT 91

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
801	<i>Vigna unguiculata</i>	CIAT, Colombia	Colombia	CIAT 198
802	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
803	<i>Hedysarum coronarium</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
804	<i>Medicago aculeata</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
805	<i>Medicago aculeata</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
806	<i>Medicago aculeata</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
807	<i>Medicago aculeata</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
808	<i>Melilotus alba</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
809	<i>Melilotus alba</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
810	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
811	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
812	<i>Trifolium species</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
813	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 03
814	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 05
815	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 11
816	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 13
817	<i>Calopogonium mucunoides</i>	University of Malaya	Malaysia	UMKL 46
818	<i>Calopogonium mucunoides</i>	University of Malaya	Malaysia	UMKL 02
819**	<i>Clitoria laurifolia</i>	University of Malaya	Malaysia	UMKL 28
820	<i>Desmodium ovalifolium</i>	University of Malaya	Malaysia	UMKL 33
821	<i>Desmodium intortum</i>	University of Malaya	Malaysia	UMKL 18
822	<i>Desmodium uncinatum</i>	University of Malaya	Malaysia	UMKL 34
823	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 23
824	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 55
825	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 53
826	<i>Indigofera species</i>	University of Malaya	Malaysia	UMKL 59
827**	<i>Clitoria ternatea</i>	University of Malaya	Malaysia	UMKL 58
828	<i>Vigna radiata</i>	University of Malaya	Malaysia	UMKL 16
829	<i>Leucaena leucocephala</i>	University of Malaya	Malaysia	UMKL 19
830	<i>Trifolium alexandrinum</i>	Nitragin Co., Wisconsin, USA	Tunisia	NifTAL original
831	<i>Psophocarpus tetragonolobus</i>	University of Malaya	Malaysia	UMKL 17
832**	<i>Pueraria phaseoloides</i>	University of Malaya	Malaysia	UMKL 54
833	<i>Samanea saman</i>	University of Malaya	Malaysia	UMKL 27
834	<i>Vigna unguiculata</i>	University of Malaya	Malaysia	UMKL 76
835	<i>Macrotyloma africanum</i>	University of Malaya	Zimbabwe	CB 756, UMKL 10*
836	<i>Macrotyloma africanum</i>	University of Malaya	Zimbabwe	mut. CB 756, UMKL 10
837	<i>Centrosema pubescens</i>	University of Malaysia	Malaysia	UMKL 21
838	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 24
839	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 26
840	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 29
841	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 50
842	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 51
843	<i>Glycine max</i>	USDA, Beltsville, Maryland, USA	Not known	USDA 33
844	<i>Crotalaria striata</i>	University of Malaya	Malaysia	UMKL 42
845	<i>Vigna radiata</i>	University of Malaya	Malaysia	UMKL 60
846	<i>Mimosa invisa</i>	University of Malaya	Thailand	UMKL 39
847	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 3412
848**	<i>Pithecellobium jiringa</i>	University of Malaya	Malaysia	UMKL 67
849**	<i>Pithecellobium jiringa</i>	University of Malaya	Malaysia	UMKL 68
850	<i>Crotalaria species</i>	University of Malaya	Malaysia	UMKL 71

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
851	<i>Acacia mimosoides</i>	University of Malaya	Malaysia	UMKL 72
852	<i>Tephrosia vogelii</i>	University of Malaya	Malaysia	UMKL 73
853	<i>Desmodium heterophyllum</i>	University of Malaya	Malaysia	UMKL 37
854	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 40
855	<i>Centrosema pubescens</i>	University of Malaya	Malaysia	UMKL 45
856	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 61
857	<i>Alysicarpus vaginalis</i>	University of Malaya	Malaysia	UMKL 63
858	<i>Crotalaria anagyroides</i>	University of Malaya	New Guinea	UMKL 64, NGR 46
859	<i>Cajanus cajan</i>	University of Malaya	Malaysia	UMKL 70
860	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 75
861	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 79
862	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 80
863	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 82
864	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 83
865	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 85
866	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 86
867	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 87
868	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 90
869	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 91
870	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 92
871	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 93
872	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 94
873	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 95
874	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 96
875	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 97
876	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 98
877	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 99
878	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 100
879	<i>Glycine max</i>	University of Malaya	Malaysia	UMKL 101
880	<i>Leucaena leucocephala</i>	University of Malaya	Malaysia	UMKL 20
881	<i>Acacia koa</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
882	<i>Acacia koa</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
883	<i>Macroptilium lathyroides</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
884	<i>Glycine max</i>	IRRI-MCP, Philippines	Philippines	NifTAL original
885	<i>Glycine max</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
886	<i>Macroptilium lathyroides</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL Project
887	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
888	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
889	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
890	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	No synonyms
891	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	No synonyms
892	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	No synonyms
893	<i>Vigna species</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
894	<i>Vigna species</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
895	<i>Vigna species</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
896	<i>Desmodium species</i>	INRA, France	Not known	GU 19
897	<i>Stylosanthes guyanensis</i>	INIP, Mexico	Mexico	INIP K28
898	<i>Vigna marina</i>	NifTAL, Maui, Hawaii	Hawaii, USA	NifTAL original
899	<i>Macroptilium atropurpureum</i>	INIP, Mexico	Not known	INIP K9
900	<i>Neonotonia wightii</i>	INIP, Mexico	Mexico	INIP K2

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
901	Clitoria species	INIP, Mexico	Mexico	721 GyFM
902	Pueraria species	INIP, Mexico	Mexico	719 GyFM
903	Lotononis bainesii	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 1388
904	Lotononis bainesii	Soil Productivity Research Lab, Zimbabwe	Tanzania	MAR 970
905	Lotononis bainesii	Soil Productivity Research Lab, Zimbabwe	Mozambique	MAR 969
906	Canavalia ensiformis	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
907	Canavalia ensiformis	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
908	Vigna unguiculata	Haryana Agric. Univ. Hissar, India	India	Hissar CP 6
909	Trifolium semipilosum	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 705
910	Trifolium semipilosum	Soil Productivity Research Lab, Zimbabwe	Zimbabwe	MAR 1292
911	Glycine max	University of Hawaii	Zimbabwe	B-1, NZP 5243
912	Glycine max	University of Hawaii	USA	B-2, NZP 5247
913	Glycine max	University of Hawaii	Not known	B-3, NZP 5240
914	Vicia species	University of Hawaii	New Zealand	B-10, NZP 5225
915	Pisum arvense	University of Hawaii	Australia	CB 1992 RCR 1044
916	Pisum species	University of Hawaii	England	B-12, NZP 5262
917	Phaseolus vulgaris	University of Hawaii	New Zealand	B-14, NZP 5097
918	Phaseolus vulgaris	University of Hawaii	USA	B-15, NZP 5232
919	Phaseolus vulgaris	University of Hawaii	Philippines	NZP 5260, CB 971
920	Medicago species	University of Hawaii	New Zealand	B-18, NZP 4008
921	Medicago sativa	University of Hawaii	Australia	SU 47, U 45, CB 1446
922	Medicago species	University of Hawaii	Not known	CB 1170, NZP 4013
923	Desmodium species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
924	Lotus hispidus	University of Hawaii	Australia	B-22, CC 814
925	Lotus pedunculatus	University of Hawaii	USA	B-23 NZP 2021 CC 829
926	Ornithopus compressus	University of Hawaii	Australia	B-24, WU 425, SU 739
927	Lotus subbiflorus	University of Hawaii	New Zealand	B-25, NZP 2076
928	Lotus species	University of Hawaii	Ireland	B-26 NZP 2238 LC 265
929	Lotus corniculatus	University of Hawaii	USA	B-27 SU 343 NZP 2196
930	Lotus corniculatus	University of Hawaii	New Zealand	B-28, NZP 2037
931	Lotus corniculatus	University of Hawaii	New Zealand	B-29, NZP 2048
932	Glycine max	University of Hawaii	Not known	B-33
933	Glycine max	University of Hawaii	Not known	B-34
934	Glycine max	University of Hawaii	Not known	B-35
935	Glycine max	University of Hawaii	Not known	B-36
936	Glycine max	University of Hawaii	South Africa	B-37, WB 64
937	Glycine max	University of Hawaii	South Africa	B-38, WB 68
938**	Vigna angularis	University of Hawaii	Not known	B-39
939	Vigna angularis	University of Hawaii	Not known	B-40, PDD 3722
940**	Acacia mearnsii	Nitragin Co., Wisconsin, USA	Kenya	Num 777
941	Acacia mearnsii	Nitragin Co., Wisconsin, USA	Kenya	Num 778
942	Acacia mearnsii	Nitragin Co., Wisconsin, USA	Kenya	Num 779
943	Vigna unguiculata	Washington State University, USA	Not known	KIM-5
944	Glycine max	University of Wisconsin	Not known	SM-5, 61A76 mutant
945	Glycine max	University of Wisconsin	Florida, USA	HS-11 USDA110 mutant
946	Glycine max	Cornell University, New York	Miss. USA	B-100 USDA138 mutant
947	Glycine max	Cornell University, New York	Miss. USA	C-100 USDA138 mutant
948	Cassia glauca	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
949	Glycine max	University of Hawaii	Not known	B-74
950	Glycine max	University of Hawaii	Illinois, USA	B-83, Nit 61A101

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
951	<i>Phaseolus lunatus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
952	<i>Glycine max</i>	University of Hawaii	New Zealand	B-85, Nit 61A124
953	<i>Glycine max</i>	University of Hawaii	India	B-86, Nit 61A148
954	<i>Lens culinaris</i>	University of Hawaii	Hawaii, USA	I-13
955	<i>Lens esculenta</i>	University of Hawaii	Morocco	I-45
956	<i>Lens esculenta</i>	University of Hawaii	Morocco	I-47
957	<i>Macroptilium lathyroides</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms
958	<i>Vigna radiata</i>	Haryana Agric. Univ., Hissar, India	India	Hissar M-3
959	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M-11
960	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M-12
961	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M-14
962	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M-15
963	<i>Vigna radiata</i>	University of Philippines	Philippines	UPLB M-16
964	<i>Arachis hypogaea</i>	University of Philippines	Philippines	P-1
965	<i>Arachis hypogaea</i>	University of Philippines	Philippines	P-2
966	<i>Arachis hypogaea</i>	UPLB, Los Banos, Philippines	Philippines	No synonyms
967	<i>Arachis hypogaea</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 201
968	<i>Arachis hypogaea</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	THA 205
969	<i>Phaseolus vulgaris</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	No synonyms
970	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10004
971	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10013
972	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10020
973	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10022
974	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10023
975	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Tobago	10035
976	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Tobago	10038
977	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10045
978	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10052
979	<i>Cajanus cajan</i>	University of West Indies, Trinidad	Trinidad	10058
980	<i>Vigna unguiculata</i>	University of West Indies, Trinidad	Trinidad	WI 7
981	<i>Vigna unguiculata</i>	University of West Indies, Trinidad	Trinidad	WI 7-B
982	<i>Psophocarpus tetragonolobus</i>	Rubber Research Institute of Malaysia	Malaysia	RRIM 43
983	<i>Psophocarpus tetragonolobus</i>	Rubber Research Institute of Malaysia	Malaysia	RRIM 56
984**	<i>Centrosema pubescens</i>	Rubber Research Institute of Malaysia	Malaysia	RRIM 968
985	<i>Glycine max</i>	University of Malaya	Brazil	3426
986	<i>Pueraria species</i>	INIP, Mexico	Mexico	720 CyFM
987	<i>Desmodium species</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
988	<i>Desmodium species</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
989	<i>Desmodium species</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
990	<i>Pterocarpus macrocarpus</i>	Agric. Research Institute, Yezin, Burma	Burma	No synonyms
991	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
992	<i>Dolichos biflorus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms
993	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
994	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
995**	<i>Leucaena leucocephala</i>	Central Luzon State Univ., Philippines	Philippines	NifTAL original
996	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Philippines	No synonyms
997	<i>Stylosanthes species</i>	Universidad de Panama, Panama	Panama	No synonyms
998	<i>Cajanus cajan</i>	Universidad de Panama, Panama	Panama	P 130
999**	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1000*	<i>Arachis hypogaea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1001	Mimosa pigra	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1002	Mimosa pudica	NifTAL Project, Maui, Hawaii	Hawaii, USA	No synonyms
1003	Pterocarpus macrocarpus	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
1004	Neptunia oleracea	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1005	Leucaena leucocephala	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1006	Leucaena leucocephala	Universidad de Panama, Panama	Panama	NifTAL original
1007	Pterocarpus macrocarpus	Agric. Res. Inst., Yezin, Burma	Burma	NifTAL original
1008	Cicer arietinum	Haryana Agric. Univ., Hissar, India	India	Ca 2
1009	Desmodium canum	CIAT, Colombia	Hawaii, USA	CIAT 1502
1010	Cicer arietinum	Haryana Agric. Univ., Hissar, India	India	Ca 1002
1011	Aeschynomene species	CIAT, Colombia	Colombia	CIAT 753
1012	Cicer arietinum	Haryana Agric. Univ., Hissar, India	India	Ca 141str.
1013	Vigna radiata	Haryana Agric. Univ., Hissar, India	India	S-24
1014	Vigna radiata	Haryana Agric. Univ., Hissar, India	India	R-3A7
1015	Pachyrhizus erosus	Nitragin Co., Wisconsin, USA	Thailand	Nit 120B3
1016	Pachyrhizus erosus	Nitragin Co., Wisconsin, USA	Thailand	Nit 120B4
1017	Pachyrhizus erosus	Nitragin Co., Wisconsin, USA	Thailand	Nit 120B5
1018	Phaseolus lunatus	Nitragin Co., Wisconsin, USA	Thailand	Nit 127E18
1019**	Phaseolus lunatus	Nitragin Co., Wisconsin, USA	Hawaii, USA	Nit 127E19
1020	Psophocarpus tetragonolobus	Nitragin Co., Wisconsin, USA	Thailand	Nit 132B12
1021**	Psophocarpus tetragonolobus	Nitragin Co., Wisconsin, USA	Thailand	Nit 132B13
1022**	Psophocarpus tetragonolobus	Nitragin Co., Wisconsin, USA	Thailand	Nit 132B14
1023	Stylosanthes guyanensis	CSIRO, Australia	Australia	CB 82
1024	Stylosanthes hamata	CSIRO, Australia	Jamaica	CB 2126
1025	Stylosanthes guyanensis	CSIRO, Australia	Costa Rica	CB 2229
1026	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1027	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1028	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1029	Centrosema pubescens	CIAT, Colombia	Mexico	CIAT 590
1030	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1031	Acacia mearnsii	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1032	Trifolium species	Nitragin Co., Wisconsin, USA	Tunisia	Nit 162B12
1033	Indigofera arrecta	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1034	Neonotonia wightii	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1035	Crotalaria species	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1036	Trifolium species	Nitragin Co., Wisconsin, USA	Tunisia	Nit 162B11
1037	Indigofera brevicalyx	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1038	Indigofera species	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1039	Cajanus cajan	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1040	Vigna unguiculata	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1041	Vigna unguiculata	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1042	Sesbania longifolia	Nitragin Co., Wisconsin, USA	Mexico	Nit 145B1
1043	Crotalaria incana	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1044	Desmodium intortum	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1045	Vigna unguiculata	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1046	Vigna unguiculata	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1047	Vigna mungo	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1048	Vigna mungo	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1049	Vigna mungo	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1050	Vigna mungo	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1051	<i>Phaseolus vulgaris</i>	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1052	<i>Pisum sativum</i>	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1053	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1054	<i>Crotalaria brevidens</i>	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1055	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Kenya	NifTAL original
1056	<i>Vicia faba</i>	NifTAL Project, Maui, Hawaii	Egypt	NifTAL original
1057	<i>Lens esculenta</i>	NifTAL Project, Maui, Hawaii	Egypt	NifTAL original
1058	<i>Lens esculenta</i>	NifTAL Project, Maui, Hawaii	Egypt	NifTAL original
1059	<i>Glycine max</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1060	<i>Lablab purpureus</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1061	<i>Lablab purpureus</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1062	<i>Arachis hypogaea</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1063	<i>Glycine max</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1064	<i>Neptunia oleracea</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1065	<i>Cajanus cajan</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1066	<i>Crotalaria species</i>	NifTAL Project, Maui, Hawaii	Thailand	NifTAL original
1067	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1068	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1069	<i>Vigna angularis</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1070	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1071	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1072	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1073	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1074	<i>Cajanus cajan</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1075	<i>Cajanus cajan</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1076	<i>Cajanus cajan</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1077	<i>Canavalia ensiformis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1078	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1079	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1080	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1081	<i>Arachis hypogaea</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1082	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Philippines	NifTAL original
1083	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1084	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1085	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1086	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1087	<i>Vigna radiata</i>	NifTAL Project, Maui, Hawaii	Taiwan	NifTAL original
1088	<i>Phaseolus vulgaris</i>	University of Nairobi, Kenya	Kenya	NifTAL original
1089	<i>Phaseolus vulgaris</i>	University of Nairobi, Kenya	Kenya	NifTAL original
1090	<i>Phaseolus vulgaris</i>	University of Nairobi, Kenya	Kenya	NifTAL original
1091	<i>Phaseolus vulgaris</i>	University of Nairobi, Kenya	Kenya	No synonyms
1092	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1093	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1094	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1095	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1096	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1097	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1098	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1099	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1100	<i>Albizia falcataria</i>	University of Singapore	Singapore	No synonyms

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1101**	<i>Albizia falcataria</i>	University of Singapore	Singapore	No synonyms
1102	<i>Lupinus albus</i>	University of Wisconsin	Wisconsin, USA	Allen 807
1103	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-6
1104	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-13
1105	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-16
1106	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-35
1107	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-38
1108	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-45
1109	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-59
1110	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-62
1111	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-76
1112	<i>Cicer arietinum</i>	ICRISAT, Hyderabad, India	Not known	IC-108
1113**	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-70
1114	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-71
1115**	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-72
1116	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-73
1117	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-89
1118	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-90
1119	<i>Sesbania species</i>	ICRISAT, Hyderabad, India	India	IC-91
1120	<i>Cajanus cajan</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1121	<i>Phaseolus vulgaris</i>	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Nit 127K17
1122	<i>Albizia stipulata</i>	Dept. of Primary Industry, New Guinea	New Guinea	NGR 143
1123**	<i>Sesbania macrocarpa</i>	Nitragin Co., Wisconsin, USA	Miss. USA	Nit 145A7
1124	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 7
1125	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 26
1126	<i>Sesbania macrocarpa</i>	Nitragin Co., Wisconsin, USA	Miss., USA	Nit 145A4
1127*	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 38
1128	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 71
1129	<i>Albizia lebbek</i>	Agric. Research Institute, Yezin, Burma	Burma	NifTAL original
1130	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 147
1131	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 194
1132*	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 195
1133	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 215
1134	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	IHP 229
1135	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	3857
1136	<i>Cajanus cajan</i>	ICRISAT, Hyderabad, India	Not known	3958
1137	<i>Sesbania species</i>	CIAT, Colombia	Colombia	CIAT 175
1138	<i>Sesbania species</i>	CIAT, Colombia	Not known	CIAT 331
1139	<i>Glycine max</i>	NifTAL Project, Maui, Hawaii	Zambia	NifTAL original
1140	<i>Phaseolus vulgaris</i>	University of Hawaii	Brazil	B-122, F 300
1141	<i>Indigofera suffruticosa</i>	University of Hawaii	Hawaii, USA	No synonyms
1142	<i>Crotalaria mucronata</i>	University of Hawaii	Hawaii, USA	14 E
1143	<i>Leucaena leucocephala</i>	University of Hawaii	Hawaii, USA	17 E
1144	<i>Canavalia species</i>	University of Hawaii	Hawaii, USA	21 A
1145*	<i>Leucaena leucocephala</i>	CIAT, Colombia	Not known	CIAT 1967
1146*	<i>Centrosema species</i>	CIAT, Colombia	Mexico	CIAT 590
1147*	<i>Desmodium intortum</i>	CIAT, Colombia	Colombia	CIAT 299
1148*	<i>Cicer arietinum</i>	University of Hawaii	Not known	Nit 27A3, USDA 3100
1149	<i>Medicago sativa</i>	University of Wisconsin	Not known	Allen 101, USDA 1915
1150	<i>Medicago sativa</i>	University of Wisconsin	USA	Allen 102

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.



TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1151	<i>Medicago sativa</i>	University of Wisconsin	USA	Allen 103
1152	<i>Medicago sativa</i>	University of Wisconsin	Canada	Allen 104
1153	<i>Medicago sativa</i>	University of Wisconsin	Wisconsin, USA	Allen 105
1154	<i>Medicago sativa</i>	University of Wisconsin	Penna., USA	Allen 107
1155	<i>Medicago sativa</i>	University of Wisconsin	Wisconsin, USA	Allen 108
1156	<i>Melilotus alba</i>	University of Wisconsin	USA	Allen 111
1157	<i>Melilotus alba</i>	University of Wisconsin	USA	Allen 113
1158	<i>Melilotus alba</i>	University of Wisconsin	Wisconsin, USA	Allen 115
1159	<i>Medicago sativa</i>	University of Wisconsin	USA	Allen 120
1160	<i>Melilotus alba</i>	University of Wisconsin	USA	Allen 123
1161	<i>Medicago sativa</i>	University of Wisconsin	USA	Allen 125
1162	<i>Medicago hispida</i>	University of Wisconsin	Hawaii, USA	Allen 127
1163	<i>Medicago hispida</i>	University of Wisconsin	USA	Allen 128
1164	<i>Medicago sativa</i>	University of Wisconsin	Not known	Allen 130, SU 271
1165	<i>Medicago sativa</i>	University of Wisconsin	England	Allen 131
1166	<i>Medicago sativa</i>	University of Wisconsin	USA	Allen 135
1167	<i>Melilotus alba</i>	University of Wisconsin	Hawaii, USA	Allen 139
1168	<i>Trigonella balensae</i>	University of Wisconsin	California, USA	Allen 144, Nit 163A1
1169	<i>Trigonella balensae</i>	University of Wisconsin	California, USA	Allen 147, Nit 163A2
1170	<i>Argyrolobium calycinum</i>	University of Wisconsin	Not known	Allen 150
1171	<i>Medicago sativa</i>	University of Wisconsin	Poland	Allen 151
1172	<i>Medicago sativa</i>	University of Wisconsin	Poland	Allen 152
1173	<i>Medicago sativa</i>	University of Wisconsin	Poland	Allen 154
1174	<i>Trigonella foenum-graecum</i>	University of Wisconsin	Not known	Allen 155, Nit 163C1
1175	<i>Medicago arabica</i>	University of Wisconsin	Alabama, USA	Allen 159, Nit 102A8
1176	<i>Trifolium pratense</i>	University of Wisconsin	Not known	Allen 200, USDA 247
1177	<i>Trifolium pratense</i>	University of Wisconsin	Wisconsin, USA	Allen 201
1178	<i>Trifolium pratense</i>	University of Wisconsin	USA	Allen 202
1179	<i>Trifolium pratense</i>	University of Wisconsin	USA	Allen 204
1180	<i>Trifolium pratense</i>	University of Wisconsin	USA	Allen 205
1181	<i>Trifolium pratense</i>	University of Wisconsin	Not known	Allen 207
1182	<i>Trifolium pratense</i>	University of Wisconsin	Sweden	Allen 208
1183	<i>Trifolium incarnatum</i>	University of Wisconsin	Not known	Allen 209, USDA 37
1184	<i>Trifolium pratense</i>	University of Wisconsin	Not known	Allen 210
1185	<i>Trifolium repens</i>	University of Wisconsin	Not known	Allen 211
1186	<i>Trifolium subterraneum</i>	University of Wisconsin	Australia	Allen 212
1187	<i>Trifolium procumbens</i>	University of Wisconsin	Oregon	Allen 214
1188	<i>Trifolium procumbens</i>	University of Wisconsin	Oregon	Allen 215
1189	<i>Trifolium glomeratum</i>	University of Wisconsin	Australia	Allen 217
1190	<i>Trifolium glomeratum</i>	University of Wisconsin	Not known	Allen 218
1191	<i>Trifolium hybridum</i>	University of Wisconsin	Not known	Allen 221 USDA 525-1
1192	<i>Trifolium ambiguum</i>	University of Wisconsin	Not known	Allen 222
1193	<i>Trifolium ambiguum</i>	University of Wisconsin	Not known	Allen 223
1194	<i>Trifolium ambiguum</i>	University of Wisconsin	Not known	Allen 224
1195	<i>Trifolium ambiguum</i>	University of Wisconsin	Not known	Allen 225
1196	<i>Trifolium pratense</i>	University of Wisconsin	Hawaii, USA	Allen 227
1197	<i>Trifolium repens</i>	University of Wisconsin	Not known	Allen 228
1198	<i>Trifolium africanum</i>	University of Wisconsin	Zimbabwe	Allen 229
1199	<i>Trifolium burchellianum</i>	University of Wisconsin	Zimbabwe	Allen 230
1200	<i>Trifolium species</i>	University of Wisconsin	Not known	Allen 232

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1201	Trifolium species	University of Wisconsin	New Zealand	Allen 233
1202	Trifolium repens	University of Wisconsin	Chile	Allen 246
1203	Trifolium repens	University of Wisconsin	Chile	Allen 247
1204	Trifolium repens	University of Wisconsin	Chile	Allen 248
1205	Trifolium ambiguum	University of Wisconsin	Oregon, USA	Allen 250
1206	Trifolium pratense	University of Wisconsin	Poland	Allen 268
1207	Trifolium pratense	University of Wisconsin	Poland	Allen 269
1208	Trifolium pratense	University of Wisconsin	Poland	Allen 270
1209	Pisum sativum	University of Wisconsin	Not known	Allen 301
1210	Pisum sativum	University of Wisconsin	Indiana, USA	Allen 302
1211	Vicia species	University of Wisconsin	Not known	Allen 304
1212	Pisum sativum	University of Wisconsin	Wisconsin, USA	Allen 311
1213	Pisum sativum	University of Wisconsin	Alaska, USA	Allen 312
1214	Pisum sativum	University of Wisconsin	Alaska, USA	Allen 313
1215	Vicia faba	University of Wisconsin	Not known	Allen 316
1216	Pisum sativum	University of Wisconsin	Holland	Allen 317
1217	Vicia faba	University of Wisconsin	Holland	Allen 318
1218	Pisum arvense	University of Wisconsin	Virginia, USA	Allen 320, USDA 524
1219	Pisum arvense	University of Wisconsin	Louisiana, USA	Allen 321, USDA 730
1220	Pisum arvense	University of Wisconsin	Georgia, USA	Allen 322, USDA 725
1221	Pisum arvense	University of Wisconsin	Georgia, USA	Allen 323, USDA 728
1222	Pisum arvense	University of Wisconsin	Georgia, USA	Allen 324, USDA 729
1223	Pisum arvense	University of Wisconsin	Georgia, USA	Allen 325, USDA 734
1224	Pisum arvense	University of Wisconsin	Georgia, USA	Allen 326, USDA 741
1225	Vicia species	University of Wisconsin	Ireland	Allen 328, SU 364
1226	Vicia angustifolia	University of Wisconsin	D.C., USA	Allen 331, USDA 651
1227	Vicia angustifolia	University of Wisconsin	Maryland, USA	Allen 332, USDA 652
1228	Vicia villosa	University of Wisconsin	Georgia, USA	Allen 333, USDA 731
1229	Vicia villosa	University of Wisconsin	Georgia, USA	Allen 334, USDA 735
1230	Vicia villosa	University of Wisconsin	Georgia, USA	Allen 335, USDA 739
1231	Vicia villosa	University of Wisconsin	Georgia, USA	Allen 336, USDA 742
1232	Vicia grandiflora	University of Wisconsin	Alabama, USA	Allen 337, USDA 831
1233	Vicia angustifolia	University of Wisconsin	Florida, USA	Allen 339, USDA 840
1234	Vicia floridana	University of Wisconsin	Alabama, USA	Allen 340, USDA 850
1235	Pisum sativum	University of Wisconsin	Not known	Allen 341
1236	Pisum sativum	University of Wisconsin	Poland	Allen 344
1237	Lathyrus maritimus	University of Wisconsin	Wisconsin, USA	Allen 345
1238	Lathyrus maritimus	University of Wisconsin	Wisconsin, USA	Allen 346
1239	Vicia faba	University of Wisconsin	Chile	Allen 347
1240	Vicia faba var. chili	University of Wisconsin	Not known	No synonyms
1241	Phaseolus vulgaris	University of Wisconsin	Not known	Allen 400
1242	Phaseolus vulgaris	University of Wisconsin	Miss., USA	Allen 403
1243	Phaseolus vulgaris	University of Wisconsin	Not known	Allen 407, USDA 162
1244	Phaseolus vulgaris	University of Wisconsin	Brazil	Allen 415
1245	Glycine max	University of Wisconsin	Not known	Allen 500
1246	Glycine max	University of Wisconsin	Not known	Allen 501
1247	Glycine max	University of Wisconsin	Not known	Allen 506
1248	Glycine max	University of Wisconsin	Not known	Allen 507 Nit 311b24
1249	Glycine max	University of Wisconsin	Not known	Allen 508, USDA 429
1250	Glycine max	University of Wisconsin	Not known	Allen 509, USDA 487

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1251	Glycine max	University of Wisconsin	USA	Allen 510, USDA 492
1252	Glycine max	University of Wisconsin	Japan	Allen 513, USDA 506
1253	Glycine max	University of Wisconsin	Not known	Allen 515, USDA 540
1254	Glycine max	University of Wisconsin	Maryland, USA	Allen 516, USDA 564
1255	Glycine max	University of Wisconsin	Not known	Allen 528
1256	Glycine max	University of Wisconsin	Formosa	Allen 531
1257	Glycine max	University of Wisconsin	Formosa	Allen 533
1258	Glycine max	University of Wisconsin	Argentina	Allen 541
1259	Vigna sinensis	University of Wisconsin	Not known	Allen 600
1260	Dolichos biflorus	University of Wisconsin	Wisconsin, USA	Allen 609
1261	Indigofera suffruticosa	University of Wisconsin	Hawaii, USA	Allen 612
1262	Laburnum vulgare	University of Wisconsin	Indiana, USA	Allen 613
1263	Indigofera kirilowii	University of Wisconsin	Not known	Allen 615, USDA 2869
1264	Lespedeza striata	University of Wisconsin	Not known	Allen 618, USDA 608
1265	Lespedeza stipulacea	University of Wisconsin	Not known	Allen 619, USDA 602
1266	Lespedeza striata	University of Wisconsin	Not known	Allen 620, USDA 294
1267	Lespedeza striata	University of Wisconsin	Not known	Allen 621, USDA 610
1268	Arachis hypogaea	University of Wisconsin	USA	Allen 625
1269	Arachis hypogaea	University of Wisconsin	USA	Allen 626
1270	Cassia nictitans	University of Wisconsin	Not known	Allen 631, USDA 807
1271	Cassia fasciculata	University of Wisconsin	Not known	Allen 634, USDA 664
1272	Cassia fasciculata	University of Wisconsin	Not known	Allen 640
1273	Cassia nictitans	University of Wisconsin	Not known	Allen 641
1274	Cassia fasciculata	University of Wisconsin	Not known	Allen 642
1275	Cassia chamaecrista	University of Wisconsin	Not known	Allen 651, Nit 5
1276	Arachis hypogaea	University of Wisconsin	China	Allen 667, PF-32A
1277	Arachis hypogaea	University of Wisconsin	China	Allen 668
1278	Arachis padifolia	University of Wisconsin	Hawaii, USA	Allen 703
1279	Samanea saman	University of Wisconsin	Hawaii, USA	Allen 707
1280	Samanea saman	University of Wisconsin	Hawaii, USA	Allen 708
1281	Alysicarpus vaginalis	University of Wisconsin	Hawaii, USA	Allen 709
1282**	Clitoria ternatea	University of Wisconsin	Not known	Allen 714
1283	Anthyllis vulneraria	University of Wisconsin	Hawaii, USA	Allen 715
1284	Anthyllis vulneraria	University of Wisconsin	Hawaii, USA	Allen 716
1285	Anthyllis vulneraria	University of Wisconsin	Hawaii, USA	Allen 717
1286	Clitoria ternatea	University of Wisconsin	Wisconsin, USA	Allen 724
1287	Caragana arborescens	University of Wisconsin	Wisconsin, USA	Allen 726
1288	Caragana arborescens	University of Wisconsin	Wisconsin, USA	Allen 727
1289	Caragana arborescens	University of Wisconsin	Not known	Allen 728
1290	Caragana arborescens	University of Wisconsin	Ohio, USA	Allen 729
1291	Coronilla varia	University of Wisconsin	Not known	Allen 730
1292	Galega officinalis	University of Wisconsin	Not known	Allen 737
1293	Galega officinalis	University of Wisconsin	Not known	Allen 738
1294	Colutea arborescens	University of Wisconsin	United Kingdom	Allen 751
1295	Colutea arborescens	University of Wisconsin	United Kingdom	Allen 752
1296	Robinia pseudoacacia	University of Wisconsin	Not known	Allen 755
1297	Galactia regularis	University of Wisconsin	Tennessee, USA	Allen 761
1298	Sesbania species	University of Wisconsin	Texas, USA	Allen 770
1299	Albizia moluccana	University of Wisconsin	Hawaii, USA	Allen 778
1300	Albizia moluccana	University of Wisconsin	Hawaii, USA	Allen 779

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.

TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1301	Lupinus arboreus	University of Wisconsin	Hawaii, USA	Allen 803
1302	Lupinus nanus	University of Wisconsin	Not known	Allen 805
1303	Lupinus mutabilis	University of Wisconsin	Not known	Allen 810
1304	Ornithopus sativus	University of Wisconsin	Holland	Allen 814
1305	Lupinus nanus	University of Wisconsin	Poland	Allen 816
1306	Lupinus nanus	University of Wisconsin	Poland	Allen 817
1307	Ornithopus sativus	University of Wisconsin	Poland	Allen 821
1308	Ornithopus sativus	University of Wisconsin	Poland	Allen 822
1309	Ornithopus sativus	University of Wisconsin	Poland	Allen 824
1310	Lotus corniculatus	University of Wisconsin	Canada	Allen 849
1311	Lotus corniculatus	University of Wisconsin	Not known	Allen 850
1312	Lotus uliginosus	University of Wisconsin	Not known	Allen 853
1313	Lotus uliginosus	University of Wisconsin	Not known	Allen 874 USDA 3E0c1
1314	Lotus corniculatus	University of Wisconsin	Not known	Allen 885
1315	Lotus corniculatus	University of Wisconsin	Not known	Allen 887 USDA 330a3
1316	Lotus corniculatus	University of Wisconsin	Not known	Allen 889 USDA 3E0a5
1317	Lotus corniculatus	University of Wisconsin	Not known	Allen 890 USDA 3E0a6
1318	Lens culinaris	Agric. Research Institute, Bangladesh	Bangladesh	No synonyms
1319	Lotus angustissimus	University of Wisconsin	Not known	Allen 914
1320	Lotus suaveolens	University of Wisconsin	Not known	Allen 920 USDA 3E0k1
1321	Lotus lamprocarpus	University of Wisconsin	Not known	Allen 930 USDA 3E0i2
1322	Lotus rectus	University of Wisconsin	Not known	Allen 931 USDA 3E0L1
1323	Caragana arborescens	University of Wisconsin	Wisconsin, USA	Allen 1031
1324	Caragana arborescens	University of Wisconsin	B.C., Canada	Allen 1032
1325	Caragana arborescens	University of Wisconsin	Alberta, Canada	Allen 1035
1326	Astragalus toxicos	University of Wisconsin	Not known	Allen 1061, Nit 9S1
1327	Astragalus membranaceus	University of Wisconsin	Not known	Allen 1062, Nit 9P1
1328	Astragalus wootoni	University of Wisconsin	Not known	Allen 1065, Nit 9N1
1329	Astragalus wootoni	University of Wisconsin	Not known	Allen 1067, Nit 9N2
1330	Astragalus species	University of Wisconsin	China	Allen 1072
1331	Lotus lamprocarpus	University of Wisconsin	Not known	Allen 929 USDA 3E0i1
1332	Hedysarum alpinum	University of Wisconsin	Alaska, USA	Allen Hed. 1
1333	Hedysarum mackenzii	University of Wisconsin	Alaska, USA	Allen Hed. 4
1334	Hedysarum alpinum	University of Wisconsin	Alaska, USA	Allen Hed. 5
1335	Hedysarum alpinum	University of Wisconsin	Alaska, USA	Allen Hed. 8
1336	Hedysarum alpinum	University of Wisconsin	Alaska, USA	Allen Hed. 9
1337	Hedysarum mackenzii	University of Wisconsin	Alaska, USA	Allen Hed. 10
1338	Hedysarum mackenzii	University of Hawaii	Alaska, USA	Allen Hed. 11
1339	Hedysarum mackenzii	University of Wisconsin	Alaska, USA	Allen Hed. 13
1340	Hedysarum mackenzii	University of Wisconsin	Alaska, USA	Allen Hed. 15
1341	Hedysarum umbellatus	University of Wisconsin	Alaska, USA	Allen Hed. 16
1342	Hedysarum umbellatus	University of Wisconsin	Alaska, USA	Allen Hed. 17
1343	Oxytropis gracilis	University of Wisconsin	Alaska, USA	Allen Ox. 1
1344	Oxytropis deflexa	University of Wisconsin	Alaska, USA	Allen Ox. 4
1345	Oxytropis deflexa	University of Wisconsin	Alaska, USA	Allen Ox. 5
1346	Oxytropis deflexa	University of Wisconsin	Alaska, USA	Allen Ox. 6
1347	Oxytropis foliolosa	University of Wisconsin	Alaska, USA	Allen Ox. 12
1348	Oxytropis koyukukensis	University of Wisconsin	Alaska, USA	Allen Ox. 17
1349	Oxytropis koyukukensis	University of Wisconsin	Alaska, USA	Allen Ox. 18
1350	Oxytropis varians	University of Wisconsin	Alaska, USA	Allen Ox. 19

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1351	<i>Oxytropis campestris</i>	University of Wisconsin	Alaska, USA	Allen Ox. 20
1352	<i>Oxytropis foliolosa</i>	University of Wisconsin	Alaska, USA	Allen Ox. 21
1353	<i>Astragalus alpinus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 1
1354	<i>Astragalus eucosmus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 5
1355	<i>Astragalus eucosmus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 6
1356	<i>Astragalus americanus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 11
1357	<i>Astragalus aboriginum</i>	University of Wisconsin	Alaska, USA	Allen Ast. 13
1358	<i>Astragalus aboriginum</i>	University of Wisconsin	Alaska, USA	Allen Ast. 14
1359	<i>Astragalus aboriginum</i>	University of Wisconsin	Alaska, USA	Allen Ast. 15
1360	<i>Astragalus americanus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 16
1361	<i>Astragalus americanus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 17
1362	<i>Astragalus americanus</i>	University of Wisconsin	Alaska, USA	Allen Ast. 18
1363	<i>Glycine max</i>	University of California, Davis	Not known	C 33
1364	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Not known	NifTAL original
1365	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1366	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1367	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1368	<i>Arachis nypogaea</i>	Texas A & M University	Texas, USA	Sm-1
1369	<i>Arachis hypogaea</i>	Texas A & M University	Texas, USA	St-2
1370	<i>Arachis hypogaea</i>	Texas A & M University	Texas, USA	Su-1
1371*	<i>Arachis hypogaea</i>	Texas A & M University	Not known	T-1, Nit 8A11
1372*	<i>Medicago sativa</i>	UFERS, Porto Alegre, Brazil	Brazil	POA 116
1373*	<i>Medicago sativa</i>	UFERS, Porto Alegre, Brazil	Brazil	POA 135
1374	<i>Canavalia</i> species	NifTAL Project, Maui, Hawaii	Not known	No synonyms
1375	<i>Trifolium ambiguum</i>	CSIRO, Australia	Not known	CC 227
1376*	<i>Phaseolus vulgaris</i>	Not known	Not known	C-34
1377	<i>Neptunia</i> species	Dept. of Agriculture, Bangkok, Thailand	Thailand	NifTAL original
1378	<i>Neptunia</i> species	Dept. of Agriculture, Bangkok, Thailand	Thailand	NifTAL original
1379	<i>Neptunia</i> species	Dept. of Agriculture, Bangkok, Thailand	Thailand	NifTAL original
1380	<i>Crotalaria paulina</i>	Nitragin Co., Wisconsin, USA	Brazil	32HI
1381	<i>Leucaena leucocephala</i>	Dept. of Agriculture, Bangkok, Thailand	Thailand	No synonyms
1382	<i>Phaseolus vulgaris</i>	CENA, Piracicaba, Brazil	Brazil	C-05
1383*	<i>Phaseolus vulgaris</i>	CIAT, Columbia	Guatemala?	CIAT 632
1384	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1385**	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1386	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1387	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1388	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1389	<i>Acacia mearnsii</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1390	<i>Vigna unguiculata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1391	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1392	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1393	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1394	<i>Stylosanthes</i> species	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1395	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Holland	Nit 175F2
1396	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Czechoslovakia	Nit 175F6
1397*	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Morocco	Nit 175F9
1398	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Morocco	Nit 175F10
1399*	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Man., Canada	Nit 175F12
1400*	<i>Vicia faba</i>	Nitragin Co., Wisconsin, USA	Man., Canada	Nit 175F16

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1401	<i>Acacia pennatula</i>	Commonwealth Forestry Institute, U.K.	Honduras	NifTAL origin
1402*	<i>Pisum sativum</i>	Nitragin Co., Wisconsin, USA	Wisconsin, USA	Nit 128C75
1403*	<i>Vicia villosa</i>	Nitragin Co., Wisconsin, USA	Tenn., USA	Nit 175G10
1404	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Not known	Hawaii, USA
1405	<i>Leucaena leucocephala</i>	NifTAL Project, Maui, Hawaii	Not known	No synonyms
1406	<i>Lupinus species</i>	Nitragin Co., Wisconsin, USA	Minnesota, USA	Nit 96A15
1407	<i>Lupinus species</i>	Nitragin Co., Wisconsin, USA	Florida, USA	Nit 96E3
1408	<i>Medicago sativa</i>	Nitragin Co., Wisconsin, USA	Washington, USA	Nit 102F65
1409	<i>Medicago sativa</i>	Nitragin Co., Wisconsin, USA	N.Carolina, USA	Nit 102F77
1410	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1303
1411	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 2004
1412	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1001
1413	<i>Vicia faba</i>	USDA, Beltsville, USA	Not known	B-USDA 2356
1414	<i>Vicia faba</i>	USDA, Beltsville, USA	Not known	B-USDA 2357
1415	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1004
1416	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1057
1417	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1056
1418	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1002
1419	<i>Vicia faba</i>	Rothamsted Experimental Sta., U.K.	United Kingdom	RCR 1027
1420	<i>Vicia faba</i>	NifTAL Project, Maui, Hawaii	Canada?	VM 11
1421	<i>Vicia faba</i>	NifTAL Project, Maui, Hawaii	Canada?	VM 12
1422	<i>Vicia faba</i>	NifTAL Project, Maui, Hawaii	Canada?	VM 26-95
1423	<i>Vicia faba</i>	NifTAL Project, Maui, Hawaii	Canada?	VM 27-43
1424	<i>Vicia faba</i>	NifTAL Project, Maui, Hawaii	Not known	Welch 290
1425	<i>Psophocarpus tetragonolobus</i>	Rubber Research Institute of Malaysia	Malaysia	RRIM 56
1426	<i>Acacia sieberana</i>	ORSTOM, Dakar, Senegal	Not known	ORS 802
1427	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 810
1428**	<i>Acacia senegal</i>	ORSTOM, Dakar, Senegal	Not known	ORS 901
1429	<i>Acacia senegal</i>	ORSTOM, Dakar, Senegal	Not known	ORS 903
1430	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 904
1431	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 905
1432	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 907
1433	<i>Acacia bivenosa</i>	ORSTOM, Dakar, Senegal	Not known	ORS 908
1434	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 909
1435	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 910
1436**	<i>Acacia farnesiana</i>	ORSTOM, Dakar, Senegal	Not known	ORS 911
1437	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 912
1438	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 913
1439	<i>Macroptilium atropurpureum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1440	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 915
1441	<i>Acacia species</i>	ORSTOM, Dakar, Senegal	Not known	ORS 916
1442	<i>Sophora chrysophylla</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1443	<i>Sophora chrysophylla</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1444	<i>Sophora chrysophylla</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1445**	<i>Pithecellobium dulce</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1446**	<i>Acacia auriculaeformis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1447	<i>Acacia auriculaeformis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1448	<i>Acacia auriculaeformis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1449	<i>Acacia auriculaeformis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin
1450	<i>Acacia auriculaeformis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL origin

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1451	Calliandra species	Nagoya University, Japan	Not known	No synonyms
1452	Calliandra species	Nagoya University, Japan	Not known	No synonyms
1453	Calliandra species	Nagoya University, Japan	Not known	No synonyms
1454	Calliandra surinamensis	Nagoya University, Japan	Not known	No synonyms
1455	Calliandra surinamensis	Nagoya University, Japan	Not known	No synonyms
1456	Calliandra inaequilatera	Nagoya University, Japan	Not known	No synonyms
1457**	Acacia albida	University of Khartoum, Shambat, Sudan	Sudan	No synonyms
1458	Acacia albida	University of Khartoum, Shambat, Sudan	Sudan	No synonyms
1459**	Acacia albida	University of Khartoum, Shambat, Sudan	Sudan	No synonyms
1460**	Acacia seyal	University of Khartoum, Shambat, Sudan	Sudan	No synonyms
1461	Acacia seyal	University of Khartoum, Shambat, Sudan	Sudan	No synonyms
1462	Acacia nubica	University of Khartoum, Shambat, Sudan	Sudan	No synonyms
1463	Arachis hypogaea	Agric. Research Institute, Bangladesh	Bangladesh	NifTAL original
1464	Cajanus cajan	ICRISAT, Hyderabad, India	Not known	IHP 38 antibiot mut
1465	Cajanus cajan	ICRISAT, Hyderabad, India	Not known	IHP 38 antibiot mut
1466	Cajanus cajan	ICRISAT, Hyderabad, India	Not known	IHP 38 antibiot mut
1467	Cajanus cajan	ICRISAT, Hyderabad, India	Not known	IHP 195 antibiot mut
1468	Cajanus cajan	ICRISAT, Hyderabad, India	Not known	IHP 195 antibiot mut
1469	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1470	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1471	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1472	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1473	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1474	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1475	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1476	Phaseolus vulgaris	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1477	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1478	Melilotus indica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1479	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1480	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1481	Melilotus indica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1482	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1483	Medicago sativa	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1484	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1485	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1486	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1487	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1488	Melilotus indica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1489	Melilotus indica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1490	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1491	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1492	Melilotus indica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1493	Medicago polymorpha	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1494	Melilotus indica	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1495	Medicago lupulina	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1496	Medicago sativa	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1497	Medicago lupulina	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1498	Medicago lupulina	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1499	Medicago lupulina	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1500	Medicago lupulina	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1501	<i>Medicago lupulina</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1502	<i>Medicago indica</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1503	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1504	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1505	<i>Arachis hypogaea</i>	Agric. Research Institute, Bangladesh	Bangladesh	NifTAL original
1506	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1507	<i>Acacia albida</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1508	<i>Acacia albida</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1509**	<i>Acacia seyal</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1510	<i>Acacia seyal</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1511	<i>Acacia seyal</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1512	<i>Acacia mellifera</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1513	<i>Acacia mellifera</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1514	<i>Acacia mellifera</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1515	<i>Acacia nilotica</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1516	<i>Acacia nilotica</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1517	<i>Acacia nilotica</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1518	<i>Acacia holosericea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1519	<i>Acacia nubica</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1520	<i>Albizia falcataria</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1521	<i>Acacia mangium</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1522	<i>Acacia mangium</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1523	<i>Prosopis juliflora</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1524	<i>Prosopis juliflora</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1525	<i>Prosopis juliflora</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1526	<i>Prosopis africana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1527	<i>Prosopis africana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1528	<i>Albizia julibrissin</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1529	<i>Albizia chinensis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1530	<i>Enterolobium cyclocarpum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1531	<i>Pithecellobium dulce</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1532	<i>Pithecellobium dulce</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1533	<i>Albizia moluccana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1534	<i>Samanea saman</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1535	<i>Samanea saman</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1536**	<i>Albizia lebbek</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1537	<i>Albizia lebbek</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1538	<i>Albizia lebbek</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1539	<i>Erythrina poeppigiana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1540	<i>Erythrina poeppigiana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1541	<i>Erythrina poeppigiana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1542	<i>Erythrina poeppigiana</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1543	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1544	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1545	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1546	<i>Calliandra calothyrsus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1547	<i>Acacia tortilis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1548	<i>Acacia tortilis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1549	<i>Acacia tortilis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1550	<i>Acacia tortilis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original

Strains with suffix \* or \*\* are described in greater detail in Sections A and B respectively.



TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1551	<i>Acacia tortilis</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1552	<i>Voandzeia subterranea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1553	<i>Voandzeia subterranea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1554	<i>Voandzeia subterranea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1555	<i>Voandzeia subterranea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1556	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1557	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1558	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1559	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1560	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1561	<i>Pachyrhizus erosus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1562	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1563	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1564	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1565	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1566	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1567	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1568	<i>Leucaena diversifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1569	<i>Leucaena shannoni</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1570	<i>Leucaena shannoni</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1571	<i>Leucaena shannoni</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1572	<i>Leucaena lanceolata</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1573	<i>Sphenostylis stenocarpa</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1574	<i>Sphenostylis stenocarpa</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1575	<i>Sphenostylis stenocarpa</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1576	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1577	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1578	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1579	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1580	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1581	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1582	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1583	<i>Macrotyloma uniflorum</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1584	<i>Vigna acontifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1585	<i>Vigna acontifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1586	<i>Vigna acontifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1587	<i>Vigna acontifolia</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1588	<i>Clitoria ternatea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1589	<i>Clitoria ternatea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1590	<i>Clitoria ternatea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1591	<i>Clitoria ternatea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1592	<i>Clitoria ternatea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1593	<i>Clitoria ternatea</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1594**	<i>Acacia pennatula</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
1595**	<i>Acacia pennatula</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
1596**	<i>Acacia pennatula</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
1597**	<i>Albizia lebbek</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1598	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1599	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original
1600	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Hawaii, USA	NifTAL original

Strains with suffix \* or \*\* are described in greater detail in Section. A and B respectively.

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TAL number	Parent host	Source of strain/nodule (donor organization/institute)	Nodule/strain origin	Other designations
1751	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Guam	NifTAL original
1752	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Guam	NifTAL original
1753	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Guam	NifTAL original
1754	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Guam	NifTAL original
1755	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Guam	NifTAL original
1756	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	Guam	NifTAL original
1757	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1758	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1759	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1760	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1761	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1762	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1763	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1764	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1765	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1766	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1767	<i>Psophocarpus tetragonolobus</i>	NifTAL Project, Maui, Hawaii	N. Marianas	NifTAL original
1768**	<i>Gliricidia sepium</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
1769**	<i>Gliricidia sepium</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
1770**	<i>Gliricidia sepium</i>	NifTAL Project, Maui, Hawaii	Mexico	NifTAL original
1771	<i>Inga jinicuil</i>	NifTAL Project, Maui, Hawaii	Mexico	No synonyms
1772	<i>Cyamopsis tetragonoloba</i>	NifTAL Project, Maui, Hawaii	Arizona, USA	No synonyms
1773	<i>Cyamopsis tetragonoloba</i>	NifTAL Project, Maui, Hawaii	Arizona, USA	No synonyms
1774	<i>Acacia pennatula</i>	NifTAL Project, Maui, Hawaii	Mexico	No synonyms

Section D

Strains of Rhizobium indexed alphabetically by  
parent host.

TAL Rhizobium Strains Indexed Alphabetically by Parent Host

<u>Parent Host</u>	<u>TAL Number</u>
Acacia albida	1457-1459, 1507, 1508
auriculaeformis	1446-1450
bivenosa	1433
farnesiana	1436
holosericea	1518
koa	300-302, 881, 882
mangium	1521, 1522
mearnsii	63, 111, 112, 126, 132-134, 179, 180, 940-942, 1031, 1384-1389
mellifera	1512-1514
mimosoides	851
nilotica	1515-1517
nubica	1462, 1519
pennatula	41, 42, 44, 152, 158, 1401, 1594-1596, 1774
senegal	1428, 1429
seyal	1460, 1461, 1509-1511
sieberana	1426
species	1427, 1430-1432, 1434, 1435, 1437, 1438, 1440, 1441
tortilis	1547-1551
Aeschynomene americana	719
brasiliiana	720
species	717, 718, 1011
Albizia chinensis	1529
falcataria	45, 46, 48, 72, 1100, 1101, 1520
julibrissin	1528
lebbek	351, 352, 362-365, 1129, 1536-1538, 1597
moluccana	1299, 1300, 1533
stipulata	1122
Alysicarpus vaginalis	722-724, 857, 1281
Anthyllis tetraphylla	685, 686
vulneraria	782, 785-787, 1283-1285
Arachis glabrata	16
hypogaea	75, 156, 159, 162, 164, 175-177, 181, 221, 236, 295, 298, 308, 311, 313, 314, 324, 325, 332, 388, 416-419, 464-466, 474-476, 478, 481-484, 565, 568, 725, 964-968, 1000, 1062, 1081, 1268, 1269, 1276, 1277, 1368-1371, 1463, 1505
padifolia	1278
prostrata	699
Argyrolobium calycinum	1170
Astragalus aboriginum	1357-1359
alpinus	1353
americanus	1356, 1360-1362
cruciatus	682

Astragalus (cont.)	
eucosmus	1354, 1355
membranaceus	1327
species	62, 1330
toxicos	1326
wootoni	1328, 1329
Ateleia herbert smithii	37-40
Bauhinia species	726
Cajanus cajan	20, 36, 120, 121, 130, 131, 191, 225, 243, 255, 256, 389, 609, 610, 624-628, 646, 859, 970-979, 998, 1039, 1065, 1074-1076, 1120, 1124, 1125, 1127, 1128, 1130-1136, 1464-1468
Calliandra calothyrsus	1, 2, 33, 80, 1503, 1504, 1506, 1543-1546
inaequilatera	1456
species	1451-1453
surinamensis	1454, 1455
Calopogonium caeruleum	727
mucunoides	651, 817, 818
species	92
Canavalia ensiformis	201, 373, 906, 907, 1077
gladiata	643
sericea	206-208
species	731, 1144, 1374
virosa	579
Caragana arborescens	1287-1290, 1323-1325
Cassia chamaecrista	1275
fasciculata	1271, 1272, 1274
glauc	948
leschenaultiana	114, 118, 119, 135-137, 264, 277, 296, 297, 345, 552, 554
nictitans	1270, 1273
species	245, 249, 250
Centrosema brasiliianum	728
fashola	93
pubescens	84, 270, 467, 471, 652, 653, 655, 688, 813-816, 837-840, 854, 855, 984, 1029
species	194, 1146
Cicer arietinum	57, 203, 204, 210, 217, 219, 224, 226, 229-231, 238, 239, 257, 262, 263, 312, 315-323, 326-331, 333-342, 385, 480, 619-623, 669, 1008, 1010, 1012, 1103-1112, 1148
Clitoria laurifolia	819
rubiginosa	729, 730
species	901
ternatea	273, 285-287, 1282, 1286, 1588-1593
Colutea arborescens	1294, 1295



Coronilla cretica	222
species	732
varia	18, 1291
Crotalaria anagyroides	858
brevidens	1054
incana	1043
juncea	469, 491, 580, 607, 733, 734
mucronata	347, 1142
natalitia	566
ochroleuca	567
paulina	1380
species	122, 287, 292, 294, 850, 1035, 1066
striata	844
Cyamopsis tetragonoloba	1772, 1773
Desmanthus virgatus	276
Desmodium barbatum	202
canum	281, 282, 529, 1009
cinereum	572
distortum	741
heterophyllum	742, 853
intortum	124, 125, 492, 538-544, 567, 691, 821, 1044, 1147
ovalifolium	820
sandwicense	278-280, 284, 549, 550
species	246-248, 251, 735-738, 896, 923, 987-989
tortuosum	272, 288
triflorum	186, 271
uncinatum	127-129, 569, 822
uniflorum	743
Dolichos biflorus	747, 748, 992, 1260
lablab	66
sericeus	581
Ebenus pineria	792
Enterolobium cyclocarpum	47, 49, 58-61, 71, 1530
Eriosema englerianum	64
Erythrina indica	69, 749
poeppigiana	1539-1542
Galactia regularis	1297
species	750-752
striata	193, 753-755
Galega officinalis	1292, 1293
Gliricidia sepium	3-8, 1768-1770

<i>Glycine javanica</i>	468
<i>max</i>	99-110, 115, 149, 150, 153-155, 205, 211-216, 240, 291, 299, 307, 376-379, 383, 384, 390, 391, 401, 409-415, 427-435, 487-489, 494, 496, 559-561, 629-633, 649, 650, 694, 756, 757, 778, 823-825, 841-843, 847, 856, 860-879, 884, 885, 911-913, 932-937, 944-950, 952, 953, 985, 1059, 1063, 1139, 1245-1258, 1363
<i>Hedysarum alpinum</i>	1332, 1334-1336
<i>carnosum</i>	614
<i>coronarium</i>	73, 588, 611, 616, 635-637, 793, 797, 802, 803
<i>mackenzii</i>	1333, 1337-1340
<i>umbellatus</i>	1341, 1342
<i>Indigofera arrecta</i>	1033
<i>brevicalyx</i>	1037
<i>endecaphylla</i>	254, 289
<i>hirsuta</i>	760, 761
<i>kirilowii</i>	1263
<i>species</i>	470, 563, 759, 826, 1038
<i>suffruticosa</i>	283, 290, 350, 530-532, 1141, 1261
<i>Inga jinicuil</i>	1771
<i>Lablab purpureus</i>	14, 15, 88, 116, 117, 165, 197, 237, 368, 642, 671, 672, 1060, 1061
<i>Laburnum vulgare</i>	1262
<i>Lathyrus hirsutus</i>	634
<i>maritimus</i>	1237, 1238
<i>Lens culinaris</i>	54, 56, 268, 275, 343, 638, 640, 954, 1318
<i>esculenta</i>	955, 956, 1057, 1058
<i>Lespedeza stipulacea</i>	1265
<i>striata</i>	1264, 1266, 1267
<i>Leucaena diversifolia</i>	1562-1568
<i>lanceolata</i>	1572
<i>leucocephala</i>	21, 82, 144, 582, 583, 589-599, 721, 762, 829, 880, 995, 996, 1005, 1006, 1067, 1143, 1145, 1381, 1404, 1405
<i>shannoni</i>	29, 35, 66, 1569-1571
<i>Lotononis bainesii</i>	690, 903-905
<i>Lotus americanus</i>	178
<i>angustissimus</i>	1319
<i>corniculatus</i>	94-96, 185, 198, 234, 744, 929-931, 1310, 1311, 1314-1317
<i>edulis</i>	680, 681
<i>hispidus</i>	924
<i>lamprocarpus</i>	1321, 1331
<i>palustris</i>	639, 654
<i>pedunculatus</i>	43, 168, 187, 925
<i>rectus</i>	1322
<i>species</i>	928

Lotus (cont.)	
suaveolens	1320
subbiflorus	927
uliginosus	244, 1312, 1313
Lupinus albus	1102
angustifolius	764, 765
arboreus	1301
mutabilis	407, 1303
nanus	1302, 1305, 1306
species	1406, 1407
Macroptilium atropurpureum	123, 537, 555, 557, 558, 899, 1439
lathyroides	147, 258-261, 265-267, 274, 346, 348, 354, 408, 883, 886, 957
Macrotyloma africanum	309, 835, 836
uniflorum	310, 1576-1583
Medicago aculeata	804-807
arabica	1175
ciliaris	697, 698
hispida	1162, 1163
indica	1502
laciniata	700
lupulina	1495, 1497-1501
minima	139, 142
murex	677-679, 692
polymorpha	1477, 1479, 1480, 1482, 1484-1487, 1490, 1491, 1493
sativa	148, 380, 444, 745, 746, 763, 770, 774-776, 781, 921, 1149-1155, 1159, 1161, 1164-1166, 1171-1173, 1372, 1373, 1408, 1409, 1483, 1496
species	269, 356, 381, 920, 922
Melilotus alba	808, 809, 1156-1158, 1160, 1167
indica	1478, 1481, 1488, 1489, 1492, 1494
sulcata	701, 788-791
Mimosa invisa	74, 571, 575, 576, 586, 846
pigra	1001
pudica	138, 1002
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## Appendix I

Information required to complete a strain data record

# Appendix I

## Information required to complete a strain data record

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 RHIZOBIUM GERMPLOSM RESOURCE - University of Hawaii NifTAL Project and MIRCEN Rhizobium strain TAL \_\_\_\_\_  
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Rhizobium strain TAL \_\_\_\_\_ Parent host : \_\_\_\_\_ Subfamily: \_\_\_\_\_  
 Common names: \_\_\_\_\_ Uses : \_\_\_\_\_  
 Receipt by NifTAL \_\_\_\_\_ Courtesy of : \_\_\_\_\_ From : \_\_\_\_\_  
 Form received \_\_\_\_\_ Collected : \_\_\_\_\_  
 -----

Fast/slow Host for authentication : Effectiveness :  
 grower : \_\_\_\_\_  
 Acid/alkali Other host tests :  
 producer : \_\_\_\_\_  
 Culture \_\_\_\_\_  
 form : \_\_\_\_\_  
 Last purity \_\_\_\_\_  
 check : \_\_\_\_\_  
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Comments : \_\_\_\_\_  
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This strain also known as : \_\_\_\_\_ Collected in : \_\_\_\_\_

Availability of antisera : \_\_\_\_\_ Availability of antibiotic resistant mutants : \_\_\_\_\_  
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