

# ANNUAL REPORT 1998-99



भाकृअनुप  
ICAR


NATIONAL RESEARCH CENTRE FOR ORCHIDS  
INDIAN COUNCIL OF AGRICULTURAL RESEARCH  
SIKKIM



वार्षिक प्रतिवेदन  
ANNUAL REPORT  
1998-99



राष्ट्रीय आर्किड्स अनुसंधान केन्द्र,  
भारतीय कृषि अनुसंधान परिषद, पाक्योंग  
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## Preface

It is a matter of great pleasure for me in presenting the 2<sup>nd</sup> Annual Report (1998-99) of the National Research Centre for Orchids. Being a newly established research centre, every day during this period of two years was a challenging task for development of infrastructure and research opportunities. In consonance with the mandate of this centre, research programmes/projects are being reoriented to suit the immediate and long term needs of orchids, and other bulbous flowering plants.

Orchids are one of the most beautiful creations of the nature having an array of different shapes, sizes and colours. Some of the major thrusts of centre during the year was collection and maintenance of germplasm of orchid species giving special emphasis on commercially important cymbidiums (both hybrids and species). Besides orchids, anthurium and important bulbous flowering plants were collected and maintained in Darjeeling campus, to provide quality planting material to the growers. Multiplication of seasonal flowers on a large scale are being carried out to supply quality seeds.

Considering the research problems and priorities in different areas of floriculture research, scientists are being trained in frontier research areas to acquaint them with advanced technologies of molecular biology, plant biodiversity, post harvest technology etc. This centre also embarked on ambitious plan for low cost poly house for orchid cultivation. It is expected that this centre will be able to sustain and achieve the targets by 2020 through collective wisdom, cooperative efforts and proper planning.

In spite of remote location in hilly terrain, natural calamities and lack of communications, the centre is determined to achieve its goal. It is my privilege to have an excellent team of scientists and staff who have supported to achieve the developments so far made. I am also thankful for kind support provided by the state development authorities in this regard.

It is also worth mentioning to express my gratitude to Padma Bhushan Dr. R.S. Paroda, DG, ICAR and Dr. S.P. Ghosh, DDG (Hort.), ICAR for their support, guidance, encouragement as well as interest in the development of this centre.

I do hope that this centre will flourish more in future.

Pakyong  
August 2000

R.C. Upadhyaya  
Director

## Executive Summary

North East Indian orchids occupy a place of pride in floriculture for their aesthetic value. Natural population of some of the economically important ones are, however, fast disappearing due to extensive collections and habitat destruction. North Eastern India and Eastern Himalayas are the major orchid habitats in the world. However, natural orchid wealth in the country is yet to be judiciously utilized and managed. Unless scientific measures are taken to conserve these horticulturally important species, our country is sure to lose most of the valuable orchid wealth.

In view of the growing demand and export potential of orchids and other high value cut flowers from our country, Indian Council of Agricultural Research established a National Research Centre for Orchids at Pakyong, 32 km from Gangtok in October 1996. Though the centre was established mainly for orchids, other important high value crops like Anthurium, Gladiolus, Lilies and other bulbous flowering plants were also included.

From the very beginning the centre is trying to strengthen the cadre position to build up the backbone. During the period under report, the staff strength was 26, consisted of Director (I/c), 1 Sr. Scientist, 3 Scientists, 5 Technical, 7 Administrative and 8 Supporting. This is the second Annual report of this centre and the salient research achievements during the year 1998-99 are summarized below.

### Collection and evaluation of Germplasm

The centre has taken up collection of available orchids germplasm from various parts of India. 225 species of 60 genera are collected from North Eastern states and Darjeeling district of West Bengal. 212 species of orchids are identified and evaluated for various morphological and floral characters. *Cymbidium*, *Cattleya*, *Dendrobium*, *Paphiopedilum*, *Phalaenopsis*, *Renanthera*, *oncidium* and *Vanda* are commercially important species for cut flower production. Besides species, about 35 *Cymbidium* hybrids are also procured and maintained for further evaluation and improvement. Some of the collected species of orchids are rare and endangered/extinct.

### Standardisation of Agro-techniques

As potting mixture plays an important role in germination, growth and development of orchids, various experiments on potting mixtures were tried for germination and growth of new shoots from pseudobulb of *Cymbidium* hybrids. Equal proportion of leaf mould, FYM and saw dust found to be an ideal medium for germination and rapid growth. Foliar application of organic manures at periodical interval also influences the growth of orchids.

To reduce the pre blooming period, organic manures such as fish meal, neem cake, mustard cake, poultry manure and goat manure are being sprayed at fortnightly intervals. Visual observation shows that spraying of neem cake solution at periodical intervals influences better growth of *Cymbidium* hybrids. Inorganic nutrient spray (NPK mixture) at various concentrations also improves growth of *Cymbidium* hybrids.

Under the ad-hoc project on "Protected cultivation of ornamentals" two trials on the effect of growth regulators BA, GA3 and IAA, and NPK in reducing the pre blooming period of *Cymbidium* hybrid are in progress.

Two low cost poly tunnels made up of bamboo and two net houses have been constructed. Orchids are maintained in these four structures. Studies have been initiated on the performance and cost-benefit ratio of these low cost poly tunnels for providing optimum growing condition for Orchids. The special emphasis in this direction was laid upon considering ultimate users or beneficiaries-the floricultural farmers of the region. This type of low cost poly tunnels will provide vital support for growing Orchids during severe winter. One Green house with microirrigation, heating and cooling facilities and two poly houses with microirrigation have been constructed under the Protectnet project for protected cultivation of orchids and bulbous flowering plants.

Besides orchids, efforts are also made to collect germplasm of various bulbous flowering plants such as *Hippeastrum*, *Hemerocallis*, *Haemanthus*, *Zantadaesia*, *Zephyranthus*, *Lycoris*, *Lillium*, *Crinum*, *Iris*, *Eucaris*, *Gladiolus*, *Anthurium* etc. About 25 species of bulbous flowering plants are collected and being evaluated for various morphological and floral characters for further improvement.

For cut flower production in gladiolus, the varieties Ice gold, Her Majesty and Eight Wonder were found to be most suitable under Sikkim conditions. Planting of gladiolus at 30 cm X 20cm was optimum for quality flower production.

Biotechnology laboratory has been set up with minimum facilities to carry out micro propagation of orchids. Efforts are on to set up full fledged laboratory very soon.

Creation of an Orchid Sanctuary of 4 acres of farm land covered with different species of trees, for *in situ* conservation and study of Orchids is in progress.

The centre has well equipped computer facilities with V-SAT. This will serve for data processing, analysis, interpretation, maintenance and cataloguing information besides, pay bill preparation, auditing and accounting.

The total area has been fenced partially and terrace development is initiated for conducting field trials.



## *Introduction*

National Research Centre for Orchids was established by the Indian Council of Agricultural Research to conduct research on all aspects of Orchids, Gladiolus, Anthurium and Bulbous flowering plants in order to improve their productivity, quality and utility. Commercial floriculture is now raising as a most important agriculture venture throughout the world and is gaining momentum in India from the export angle. In future, India may become a part of commercial map of floriculture if it taps the potential of natural resources. Keeping this in view, Government of India has given more thrust on commercial floriculture in 8<sup>th</sup> plan. The pioneer agriculture organisation, Indian Council of Agriculture Research thus, has established National Research Centre for Orchids to conduct export oriented research on Orchids, Gladiolus, Anthurium and bulbous flowering plants giving emphasis on their production, quality and utilization.

National Research Centre for Orchids is situated at Pakyong, 32-km away from Gangtok. The Centre is located at 1300 meters above MSL on hilly terrain. The average rainfall at Pakyong ranges from 2000-2500mm per annum distributed from April to October and humidity varies from 70-85%, whereas temperature ranges from 5-25°C.

The centre has taken research activities on Orchids and bulbous flowering plants since its inception on the basis of problems and priorities of floricultural research of the country.

## Mandates

For resolving major constraints in production of orchids and other bulbous ornamentals in major growing belt, the centre has mission mode approach with following mandate:

- Collection, characterization, evaluation, conservation and improvement of orchids, anthurium and other bulbous flowering plants.
- Systematic breeding and production of commercial varieties and hybrids of superior quality of orchids, bulbous ornamentals and anthurium for national and international trade.
- Standardisation of agro-techniques for commercial cultivation and package of practices for post-harvest management for domestic and export markets of orchids, anthurium and other bulbous flowering plants.
- Production of quality planting materials of orchids, anthurium and other selected bulbous flowering plants.
- To act as a repository of information and as a centre for giving training on, orchids and other floricultural crops.

## Objectives

- Collection, conservation, characterization and evaluation of germplasm and development of National repository of orchids and bulbous flowering plants.
- Standardisation of agro-techniques for cultivation of orchids, gladiolus, anthurium and lillium with specific emphasis on low cost technology.
- Evaluation of locally adopted orchid species for their suitability as cut flower or potted plant for commercial purpose.
- Standardisation of micro propagation techniques for production of quality planting material on commercial scale.
- Development of export worth orchid lines through a systematic varieties and hybrids development programme.
- Systematic work on disease and pest management of orchids and other bulbous flowering plants.
- Standardisation of post-harvest management practices of cut flowers for trade within National and International markets.

## Infrastructure

### Laboratory

There is no permanent laboratory building for the centre. The existing old quarters are being used for office and laboratories. Some of the equipments viz., electronic balance, pH meter, B.O.D. incubator, oven, growth chamber, UV-VIS spectrophotometer, autoclave, microscope, laminar air flow and lux meter were procured.

### Computer Cell

The center has well equipped computer facilities with V-SAT. This will serve for data processing, analysis, maintenance and cataloguing of information, besides pay bill preparation, auditing and accounting.

### Library

Considering the minimum need of the centre for a library and also its limitations in terms of space, a small library has been developed with 100 books, reports and bulletins. The center has subscribed for only one Orchid journal published by Orchid Society of India, during 1997-1998.

### Field

The centre has 9.98 ha. land. The entire area is bisected by a road and the field area has been fenced partially. The lower side of the road is being planted with the host tree where epiphytic orchids are being maintained in *in situ* condition. The farm has no perennial water source for protective irrigation especially during summer.

### Building

The office has been established in very old quarters of State Agricultural Farm building. The old pesticides and fertilizers godown has been renovated and will be used for the developmental activities of the centre. New laboratory cum administrative complex along with residential quarters for the staff members have been proposed in the IX plan.

### Any other item

Facilities for water, electricity, medical and terrace development have to be developed in active collaboration with the concerned departments. Vehicles the major requirement to travel in this hilly and inaccessible areas are not in sufficient numbers presently. One vehicle is available for the centre and one telephone for the Director's room at Pakyong. Power supply is also erratic.

## Weather Conditions

Mean monthly meteorological data at Pakyong 1998-99

	Temp °C		R.H. (%)		Rainfall (mm)	Light Hours	Evaporation (MM)
	Max	Min	Max	Min			
April	25	14.3	90.6	45.3	200.3	5.3	2.3
May	27.4	17.9	89	55.4	298.1	5.6	2.5
June	27.1	19.3	89.7	64.6	193.9	4.4	2.5
July	25.8	20.5	87.7	77.4	542.8	0.8	0.6
Aug.	25.7	20.2	90.9	76.7	451.8	1.2	0.8
Sept.	26.9	19.4	91.9	65.3	289.2	3.2	1.7
Oct.	26	17.2	93.8	59.3	220.5	4.4	1.7
Nov.	23.3	12.8	94.2	45.4	3.2	5.1	1.3
Dec.	20.4	9	91.7	38.5	—	4.6	0.9
Jan.	16.3	7.4	89.3	45.8	13.7	3.8	1
Feb.	19.3	9.2	87	43.2	63.8	5	1.2
March	20	10.7	83.5	50	222.4	5.2	1.6

## Research Activities

### Project 1: Collection, conservation, maintenance and evaluation of orchid germplasm

D. Barman, R.C. Upadhyaya & Ram Pal

Efforts were being made to collect orchid germplasm during the year 1998-99 from different areas of Sikkim, Darjeeling district of West Bengal, Arunachal Pradesh, Meghalaya and Manipur. During the year, about 65 species and 28 genera of orchids were collected and maintained along with the previously collected germplasm (Table 1). All the germplasm collected till date is conserved in net houses/polyhouses/green house and in *in situ*. Further, evaluated for different economically important characters (Table 2). Efforts will be made for collecting germplasm from other parts of the country and promising species will be utilised for further improvement.

Table 1: Present status of orchid germplasm

#### Acampe sps.

*Acampe pappilosa* Lindl.

#### Acanthephippium sps.

*Acanthephippium striatum* Lindl.

*Acanthephippium sylhetens* Lindl.

#### Acrochaene sps.

*Acrochaene punctata* Lindl.

#### Aerides sps.

*Aerides fieldingii* Williams (Jennings)

*Aerides multiflora* Roxb.

*Aerides williamsii* Warn., Sel.

*Aerides longicarnu*

*Aerides multiflorum*

*Aerides multiflorum* var. *aimsworthii*

*Aerides odoratum* Lour., Fl. Cochinch.

*Aerides recemeferum*

#### Agrostophyllum sps.

*Agrostophyllum brevipes* King & Pantl.

*Agrostophyllum callosom* Reichb. f.

#### Arachnanthe sps.

*Arachnanthe clarkei* Rolfe

*Arachnanthe cathertii*



**Arundina** sps.

- Arundina graminifolia* (D. Don) Hochr.
- Arundina graminifolia* var. *Abhijit-villa*
- Arundina graminifolia* var. *Alba* (D. Don) Hochr.
- Arundina graminifolia* var. *Chinensis*

**Ascocentrum** sps.

- Ascocentrum ampullaceum* var. *supranticum* Pradhan
- Ascocentrum ampullaceum* var. *auranticum*
- Ascocentrum miniatum* (Lindl.) Schltr.

**Bletilla** sps.

- Bletilla hyacintha*

**Bulbophyllum** sps.

- Bulbophyllum affine* Lindl.
- Bulbophyllum hirtum* (Smith) Lindl.
- Bulbophyllum leopardinum* (Wall) Lindl.
- Bulbophyllum bisectum* Lindl.
- Bulbophyllum careyanum* (Hook) Spreng., Syst.
- Bulbophyllum cauliflorum* Hook. fil.
- Bulbophyllum cornucervi* King & Pantl.
- Bulbophyllum ebulbum* King & Pantl.
- Bulbophyllum eublepharum* Reichb. fil.
- Bulbophyllum gamblei* Hook. fil.
- Bulbophyllum gracilipes* King & Pantl.
- Bulbophyllum guttulatum* Wall.
- Bulbophyllum leotanthum* Hook. fil.
- Bulbophyllum listeri* King & Pantl.
- Bulbophyllum protractum* Hook. fil.
- Bulbophyllum reptans* Lindl.
- Bulbophyllum scabratum* Reichb. f.

*Bulbophyllum thomsoni* Hook.f.  
*Bulbophyllum triste* Reichb.fil.  
*Bulbophyllum wallichii* Rchb.f.  
*Bulbophyllum rigidum*

**Calanthe sps.**

*Calanthe maculata* Lindl.  
*Calanthe masuca* D.Don (Lindl.)  
*Calanthe triplicata* (Willemet) Ames.  
*Calanthe chloroleuca* Lindl.  
*Calanthe maxina*

**Cattleya sps.**

**Cerastostylis sps.**

*Cerastostylis teres* (Griff.) Reichb.f.

**Cirropetalum sps.**

*Cirropetalum wallichii* Lindl.  
*Cirropetalum naculosum* Lindl.

**Cleisostoma sps.**

*Cleisostoma armigerum* King & Pantl.  
*Cleisostoma micranthum* (Lindl.) King & Pantl

**Coelogyne sps.**

*Coelogyne cristata* Lindl.  
*Coelogyne barbata* Griff  
*Coelogyne corymbosa* Lindl.  
*Coelogyne flaccida* Lindl.  
*Coelogyne flaccida* x *C. cristata*  
*Coelogyne nitida* (Wall. ex. don) Lindl.  
*Coelogyne ochracea* Lindl.  
*Coelogyne stricta* (D.Don) Schltri.l  
*Coelogyne andersonii*  
*Coelogyne bootanensis*  
*Coelogyne brevipes*  
*Coelogyne caudatum*  
*Coelogyne coespitosum*  
*Coelogyne cornutum*  
*Coelogyne corymbpsa* var.*heteroglossa*  
*Coelogyne cristata* var.*chatsworthii*  
*Coelogyne elata* Hook.  
*Coelogyne flavida* Wall  
*Coelogyne fuscescens* Lindl.  
*Coelogyne fuscescens* var. *Brunie*.Lindl  
*Coelogyne guttatum*  
*Coelogyne massangeana*  
*Coelogyne nitida* var. *alba*  
*Coelogyne nitida* var. *alba* Lindl.  
*Coelogyne ornatissimum*  
*Coelogyne ovalis*, Lindl

*Coelogyne prolifera*  
*Coelogyne punctulata* Lindl.  
*Coelogyne refractum*  
*Coelogyne sarcophyllum*  
*Coelogyne sikkimensis*  
*Coelogyne viriiflorum*

**Cryptochilus sps.**

*Cryptochilus sanguina* Wall.

**Cymbidium sps.**

*Cymbidium devonianum* Paxt  
*Cymbidium aloifolium* (L.) SW.  
*Cymbidium eburneum* Lindl.  
*Cymbidium giganteum* Wall & Lindl.  
*Cymbidium lowianum* Rchb.  
*Cymbidium munronianum* King & Pantl.  
*Cymbidium tigrinum* Parish  
*Cymbidium tracyanum* Hort.  
*Cymbidium elegans* Lindl.  
*Cymbidium hookerianum* Reichb. f.  
*Cymbidium pendulum*



**Dendrobium sps.**

*Dendrobium jenkinsi* Wall. ex Lindl.  
*Dendrobium anceps*. Sw. (wall.ex.Lindl)  
*Dendrobium aggregatum* Roxb.  
*Dendrobium chrysotoxum* Lindl.  
*Dendrobium crrepidatum* Lindl.  
*Dendrobium crepidatum* var. *Assamensis*  
*Dendrobium densiflorum* Lindl.  
*Dendrobium eriaeflorum* Griff.  
*Dendrobium falconeri* Hook  
*Dendrobium heterocrapum* Lindl.  
*Dendrobium nobile* Lindl.  
*Dendrobium pierardii* Roxb.  
*Dendrobium primulinum* Lindl.  
*Dendrobium sulcatum* Lindl.  
*Dendrobium amplum*  
*Denerobium aphyllum*, Roxb.  
*Dendrobium bellatulum* Rolfe.  
*Dendrobium bensonii*  
*Dendrobium bulboflorum*  
*Dendrobium cappillipes* Rchb. f.  
*Dendrobium chrysanthum* Lindl.  
*Dendrobium crassinode*  
*Dendrobium epididatum*  
*Dendrobium farmeri* Paxt.  
*Dendrobium farmosum* Roxb.





*Dendrobium fimbriatum* Hook.  
*Dendrobium fuscescens*  
*Dendrobium gibsonii* Lindl.  
*Dendrobium hookeriana*  
*Dendrobium infundibuliform* Lindl.  
*Dendrobium jenkinsii* Wall ex Lindl.  
*Dendrobium lituiflorum* Lindl.  
*Dendrobium longicornu* Lindl.  
*Dendrobium moschatum* Swartz.  
*Dendrobium nobile* var. *alba*  
*Dendrobium ochreatum*  
*Dendrobium parishii* Reichb. f.  
*Dendrobium pauciflorum* King & Pantl.  
*Dendrobium ramosum*  
*Dendrobium terminale* Par. & Reichb. f.  
*Dendrobium thrysaflorum*  
*Dendrobium transparens* Lindl.  
*Dendrobium williamsonii* Day & Rchb.

**Doritis** sps.

*Doritis taenialis* (Lindl.) Hook. f.

**Epidendron** sps.

*Epidendron radiacum*  
*Epidendron zanthaeum*

**Eria** sps.

*Eria pubescen* (Hook.) Lindl.  
*Eria coronaria* (Lindl.) Rchb. f.  
*Eria flava* Lindl.  
*Eria graminifolia*  
*Eria paniculata* Lindl.  
*Eria pannea* Lindl.  
*Eria pumila* Lindl.  
*Eria radiata*  
*Eria spicata* (D. Don)  
*Eria stricta* Lindl.

**Gastrochilus** sps.

*Gastrochilus calceolaria* (Buch. Ham.) D. Don

**Goodyera** sps.

*Goodyera procera* (Wall. Ex Ker. Gawl.) Hook.  
*Goodyera secundiflora* Lindl.

**Herpysma** sps.

*Herpysma longicaulis* Lindl.

**Kalimpongii** sps.

*Kalimpongii narangittii*

**Liparis** sps.

*Liparis longipes* Lindl.  
*Liparis plantaginea* Lindl.





**Lusia sps.**

*Lusia filiformis* Hook.

**Lycaste sps.**

*Lycaste schumbrunensis* Vindob.

**Mycrostylis sps.**

*Mycrostylis opiculatus*

*Mycrostylis wallichii* Lindl.

**Neogyne sps.**

*Neogyne gardneria* Rehb.f

**Oberonia sps.**

*Oberonia emerginata* King & Pantl.

*Oberonia falcata* King & Pantl.

**Oncidium sps.**

*Oncidium golden shower*

*Oncidium grower ramsey*

*Oncidium spacealatum*

**Ornithochilus sps.**

*Ornithochilus fuscus* Wall

**Otochilus sps.**

*Otochilus porrecta* Lindl.

**Panisea sps.**

*Panisea parviflora* Lindl.

*Panisea uniflora*

**Paphiopedilum sps.**

*Paphiopedilum hirsutissimum* (Lind.) Pfitz.

*Paphiopedilum insigne* (Wall.) Pfitz.

*Paphiopedilum venustum* (Wall.) Pfitz

**Phaius sps.**

*Phaius flavus* Lindl.

*Phaius tandervilliae* (Alt.) Bl

*Phaius wallichii* Lindl.

*Phaius mishmensis* Rehb. f.

**Phajus sps.**

*Phajus blumei* Lindl.

*Phajus blumei* var. *assamensis*

*Phajus mishmensis* Reichb.f.

**Phalaenopsis sps.**

*Phalaenopsis mannii* Rehb. f.

**Pholidota sps.**

*Pholidota imbricata* Hook

*Pholidota articulata* Lindl.

*Pholidota rubra* Lindl.

**Pleione sps.**

*Pleione humilis* (Smith) D. Don  
*Pleione maculata* Lindl.  
*Pleione praecox* (Smith) D. Don

**Podochilus sps.**

*Podochilus cultratus* Lindl.  
*Podochilus khasianus* Hook. f.

**Porpax sps.**

*Porpax meirex* King & Pantl.

**Renanthera sps.**

*Renanthera imschootiana* (Lindl.) Rolfe.

**Rhynchostylis sps.**

*Rhynchostylis praemorsa*  
*Rhynchostylis retuse* (L.) Blume.  
*Rhynchostylis retusa* var. *giganteum*  
*Rhynchostylis retusa* var. *guttata*

**Ritaia sps.**

*Ritaia himalaica* (Hook. f.) King & Pantl.

**Robiquetia sps.**

*Robiquetia spathulata* (Blume) Smith.

**Saccolobium sps.**

*Saccolobium intermedium* Griff.

**Sarcanthus sps.**

*Sarcanthus pallidus* Lindl.

**Stauropsis sps.**

*Stauropsis undulata* Benth.

**Tainia sps.**

*Jainia*

**Thelasis sps.**

*Thelasis longifolia* Hook. f.

**Thunia sps**

*Thunia alba* Rehb. f.  
*Thunia marshalliana* Rehb. f.  
*Thunia venosa* Rolf.

**Tylostylis sps.**

*Tylostylis discolor* (Lindl.) Hook. f.

**Vanda sps.**

*Vanda coerulea* Griff. ex. Lindl. \*  
*Vanda alpina* Lindl.  
*Vanda coerulea* x *Vanda roxburgii*  
*Vanda cristata* Lindl.  
*Vanda stangeana* Rehb. f.  
*Vanda teres* (Roxb.) Lindl.  
*Vandawroth*  
*Vanda parashii* Veitch & Riechb. f.  
*Vanda teres* var. *candida* Rehb. f.

**Vandopis sps.**

**Zygopetalum sps.**

*Zygopetalum intermedium* Loddiges

Table 2: Morphological and floral characters of Orchids

Species Name	LEAF		Spike Length (cm)	Month	FLOWER		IMPORTANT FEATURES	
	No.	Len. (cm)			Colour	Number		Size
<i>Aerides fieldingii</i>	8	8.8-15.5	30-31	End of May	Whitish pink.	49-51	1.8	Heart shape, Lip white with purple striation. Epiphyte.
<i>Aerides multiflorum</i>	12	19.5-2.2	28-29.5	June	Dark purple with white mixed.	23-30	1.2-1.8	Lip hastate, dark pink, shining, flat, base & tip acute. Epiphyte.
<i>Aerides multiflorum</i> var. <i>aimsworthii</i>	6	17.0	19.5	June	Purple flushed with white.	16	1.5	Lip spear shape, purple striation in the disc region. Light pink in remaining parts, fragrant, Epiphyte.
<i>Aerides odoratum</i>	5-13	18-19	23	June	White blotches at tip.	24-35	2.5	Lip white, 3-lobed, midlobe linear crose at margin, spur present and incurved, fragrant. Epiphyte.
<i>Aerides williamsoni</i>	8	14-22	24	Mid May	White flushed with purple.	26	1.9	Lip spear shape, purple. Dark purple at base. Epiphyte.
<i>Arachnanthe clarkei</i>	8	12.5-16	20.5	June	Apple green			Used for cut flower, fragrant, extinct. Epiphyte
<i>Ascocentrum ampullaceum</i> var. <i>supriatum</i>	9	13-14	18	March-Apr.	Deep pink.	25-30	8-1.0	Lip, light pink in colour with extended spur, cuspidate. Good for pot plants, long lasting flower. Terrestrial.
<i>Ascocentrum ampullaceum</i> var. <i>aurantiacum</i>	6	5.5-7	3-4	April-Mar.	Orange red.	8-12	1.2-1.6	Lip, yellow tinged with orange colour, long lasting flower. Good for pot plants. Terrestrial
<i>Ascocentrum miniatum</i>	3-5	10-13	6.5	May	Orange red.	22	1.1	Lip yellow, sidelobes raised up. Attractive flower, good for pot plants. Terrestrial.
<i>Bletilla hyacintha</i>	4	24-28	15-20	march	Pink	5-6	3.5-4.0	Lip light pink, wavy margin, terminal portion purple, bilobed serrated ridges at centre. Terrestrial.
<i>Bulbophyllum guttulatum</i>	1-2	10-11	7-5	March	Light yellow with purple tip.	2-4	1.0	Sides of lip is purple, folding type. Hood shaped. Epiphyte.
<i>Bulbophyllum scabratum</i>	1-2	9	4-4.5	March		6-9		Lip yellow, spear shaped, folding type. Terrestrial
<i>Calanthe triplicata</i>	5	22.2-24	32.2	May-June	White	15	2.8	Lip white with bilobed tip, side lobe giving a patal look, spreading, extinct. Terrestrial.
<i>Coelogyne elata</i>	2	40-43	27	may	Off white.	7	2.6	Lip white tubular at basal region. Spotted brown spur present. Terrestrial.
<i>Coelogyne flaccida</i> × <i>Coelogyne cristata</i>	2	24-30	20-22	March	Pure white.	6-8	5.5-7	Lip white, yellow blotches at centre with 3 rows of yellow fringes. Epiphyte.

<i>Coelogyne flaccida</i>	2	22.2-23	19-29	March-Apr.	Creamish white.	5-10	4-5.5	Lip white, winged at region, side of terminal centre white 3-ridges present, scented. Epiphyte.
<i>Coelogyne nitida</i>	2	16.5-18	15-19	April	Pure white.	7-9	3-3.5	Lip white, midlobe 2-heart shaped yellow spots present, scented. Epiphyte.
<i>Coelogyne nitida</i> var. <i>alba</i>	2	19-26	14-17	April	Pure white	5-7	2-2.3	Lip white, extinct. Epiphyte.
<i>Cryptochilus sanguina</i>	4-6	9-10	16	June	Red	15	Tubular	Sepals & petals fused giving a tubular look. Terrestrial/Lithophyte.
<i>Cymbidium devonianum</i>	3-4	4-59	25-47	April	Greenish brown, blotches.	20-41	3.0-3.5	Lip greenish tassled with brown or purple base white with pink spots. Epiphyte/Terrestrial.
<i>Cymbidium eburneum</i>	5-12	53-62	20-30	March	Pure white.	2-3	10.10.5	Lip white, funnel shaped base, centre yellow. Terrestrial.
<i>Cymbidium tigrinum</i>	3-4	16-18	20.6-27.3	March	Parrot green.	5-6	4.8	Lip white base. Tip acute with brown lines on it. Side lobes purple. Good for cut flower. Epiphyte.
<i>Dendrobium aggregatum</i>	1	6-8	7.5-12	April	Yellow.	6	2.7-3.4	Lip flat, bilobed, side & mid coloured with orange. Epiphyte.
<i>Dendrobium anceps</i>		4.5		May	Greenish yellow.	1-2		Lip long, undulated greenish yellow. Epiphyte.
<i>Dendrobium aphyllum</i>				April-May	Light pink.	2-3	3.5-4.3	Lip funnel shape, mid extended in a circular fashion, cream colour margin & lip fringed. ornamental beauty. Epiphyte.
<i>Dendrobium aureum</i>				Dec	Light yellow.	2-3	4-6	Lip greenish yellow with brown striations in the midlobe, pubescent, sweet scented. Epiphyte.
<i>Dendrobium crassinode</i>	1-3	11-11.2	12.2-14	April-May	Yellow.	9-12	2.7-3.0	Lip fimbriate margin, disc greenish yellow. Flower yellow attractive, extinct. Epiphyte.
<i>Dendrobium crepidatum</i>	2			April	White with purple	2-3	4.5-4.6	Lip flat, undulated margin. The base and mid region greenish yellow, tip purple. Flower attractive. Epiphyte.
<i>Dendrobium densiflorum</i>	4-5	15-17	23.5-26	April	Yellow.	30-43	3.8-4.5	Lip orange/fringed at all margin region. Used for ornamental beauty. Epiphyte.
<i>Dendrobium falconeri</i>		3.1-3.9		May	Light pink at base	1	4	Lip disc region dark purple, mid white, margin undulated. Sidelobe yellow colour. Epiphyte.
<i>Dendrobium farmeri</i>			11	April	Pinkish white /purplish white	12	3.0-3.5	Lip flat, side lobe folded to form funnel look, remaining area oval shape, tip of lip purple, pubescent. Epiphyte.

<i>Dendrobium fimbriatum</i>	12-14	7.5-7.6	4-5	April-May	Orange yellow.	4-8	2.8-3.0	Lip yellow fringed, wrinkled, midlobe purple blotch at centre, red striation at internal sidelobes. Epiphyte.
<i>Dendrobium gibsonii</i>	15				Orange yellow.	1		Epiphyte.
<i>Dendrobium infundibulum</i>	5	7-7.5		April	pure ivory	3-4	10	Lip white, bilobed, orange colour in the mid region. Used for indoor culture. Epiphyte/ Terrestrial.
<i>Dendrobium jenkensii</i>	1	2-3.1	5.1	April	Yellow.	1	3	Lip extended flat, slightly bilobed, disc orange in colour. Epiphyte.
<i>Dendrobium nobile</i>	7	8-9.5		Feb.-March	white with purple blotch on sepals	5-12	6-7.5	Lip creamish white, blotched tip purple colour base, good for cut flower, indoor culture Epiphyte.
<i>Dendrobium nobile var. albiflorum</i>					Pure white.	2-3	6.2-6.8	Lip white/lemon yellow. Mid inverted, funnel shaped, slightly pubescent, extinct. Epiphyte/ Terrestrial.
<i>Dendrobium pierardi</i>			36-43		White with purple spot on flower.	19-24	3.2	Lip white, disc parrot green, remaining area white. Purple streaks at top. Good for cut flower. Epiphyte.
<i>Dendrobium primulinum</i>				March	white with purple tinge.	2-8	6	Lip lemon yellow, velvet pubescent, funnel base, wide mouth, cut flower. Epiphyte.
<i>Dendrobium ramosum</i>				March	Yellow	2-3	-	Lip funnel shaped, wavy at tip, side lobes incurved red striations in the side lobe. Epiphyte.
<i>Dendrobium transparens</i>			55-60	April	Purple.	11-16	4.7-5	Lip white, acute tip coloured with purple. Purple striation present. Good for cut flower. Epiphyte
<i>Dendrobium williamsonii</i>		0.8		Feb.	Pale green,	2-3	4-6.2	Lip wavy, fringed, fimbriate, orange blotch purple striation in the centre. Good for pot plants. Epiphyte/Terrestrial.
<i>Epidendrum radiacum</i>	10-20	12-12.5	44	April-June	Red	19	2.5-3.0	Lip cross shaped, emerges from the centre, mid & tip region flat, fringed, bilobed, yellow centre, endangered. Epiphyte.
<i>Erta paniculata</i>	9-11	17-18	11-18	Jan.	Greenish yellow purple striation.	50-55		Lip tip faintly folded outward. 3-4 spikes/plant emerges terminally Epiphyte/Terrestrial.

<i>Eria pubescen</i>	16-17			March-Apr	Parrot green	3-5		Lip having parrot green tip Basal region brown, rounded slightly undulated, yellow, spear shaped. Epiphyte.
<i>Eria radiata</i>	2-3	14.3-16	4.0	March	Greenish yellow brown striation.	11	1.5-1.7	Midlobe of lip yellow having brown arrow shape. Sidelobe incurved, form a channel with brown blotches. Epiphyte/Terrestrial.
<i>Eria spicata</i>	5	19-27	8-11.5	June	creamish pink.	20-30	1.0	Lip reduced at base, red in colour. Terrestrial.
<i>Eria stricta</i>		10.6	8.0	Feb.	Silvery white.	15-20		Terrestrial.
<i>Gastrochilus calceolaris</i>	3	10.1	3.0	March	Parrot green with brown spot.	3	1.5	Lip sac shaped, yellow with brownish red markings. Midlobe white, fringed with brown spots at centre. Epiphyte.
<i>Lusia sps.</i>		8.5-9		March	Greenish white inter. purple. ext.	5	0.5-0.6	Epiphyte.
<i>Microstylis wallichii</i>	5-6	9.5-15	18.5	May end	Apple green. old flower purple.	15		Lip hollow look, purple, small barrel shape structure
<i>Otochilus porrecta</i>	3	8-15		Dec.	pure white.	8	1.5	Drooping recemes, good for hanging. Epiphyte.
<i>Panisea uniflora</i>	2	2.1		May	Lemon yellow.	1	2.3	Sidelobes of lip light brown. At base 3-orange spots found from which 3 brownish lines appear. Epiphyte.
<i>Paphiopedium hirsutissimum</i>	4	20-38	13.5	March-May	Sepals light green.	1	12.13.5	Lip parrot green, saccat, with brown or black dots on it. Good for pot plants, long lasting flower. Terrestrial.
<i>Phaleonopsis manii</i>	6	5.5-22	5.6-16.5	April-May	Greenish yellow with brown blotch	4-9	2.8	Long lasting flower, extinct. Epiphyte.
<i>Renanthera imschootiana</i>	13-18	10.2-12	37-47	April-May	Orange red.	14	4.5-5.0	Lip red, side lobes triangular, red, cut flower, indoor culture, long lasting flower, extinct. Epiphyte.
<i>Rhynchostylis retusa</i>	7-9	12-17	29-47	June	White with pink blotches.	60-105	1.3-1.5	Lip base white, dark purple at mid region. Ornamental, drooping receme. Epiphyte.
<i>Vanda cristata</i>	6-7	12.5-16	1.7-3.5	May	Apple green.	2-4	1.5-2.5	Lip white with yellow tinge, dragon head shaped tip, maron blotches on it, long lasting flower. Epiphyte.
<i>Vanda parishii</i>	3-4	7-13.5	11	May	Light green with brown spots.	3	2.7	Lip base white with purple striation. Mid & tip giving an anchor look, purple, lasting flower. Epiphyte.
<i>Vanda teres var. candida</i>		18-20		Feb	White	1	5.5	Lip bilobed, curled inwards, used for ornamental beauty.

**Project 2:** Development of agro-techniques for commercial scale production of orchids and bulbous plants in open and protected condition.

D. Barman, R.C. Upadhyaya & Ram Pal

#### Effect of nutrient spray on pre blooming period of *Cymbidium* hybrid

Investigations were aimed at to study the influence of foliar application of NPK on pre blooming period of *Cymbidium* hybrid var. Cooks Bridge. The experiment was laid out in CRD design with 12 treatments. Each treatment was repeated three times. The different nutrient combinations were sprayed at fortnightly intervals and observations on plant height, leaf length width of leaf, no. of leaf, no. of pseudobulb, length of pseudobulb, girth of pseudobulb and number and number of shoots/pseudo bulbs are being taken at regular intervals.



#### Effect of organic manure on flower quality of *Cymbidium* hybrid

Nutrients supplied to the plant through organic form found to be beneficial due to its continuous availability and efficient utilisation for growth and development. Keeping this in mind investigation is taken up using various organic manures (mustard oil cake, goat manure, poultry manure, fish meal and neem cake) for improving the flower production and quality of *Cymbidium* hybrid. One kg of manure was soaked in 25 lts. of water and the supernatant solution was used for spraying at fortnightly intervals.

#### (i) Effect of growth regulators on pre blooming period of *Cymbidium* hybrid.

The experiment has been laid out using various concentrations of BA (100, 200, 300 ppm), GA 3 (100, 200, 300 ppm) and IAA (250, 500, 750 ppm) to study their influence on growth and flowering of *Cymbidium* hybrid. Plant growth substances are being sprayed at monthly intervals. Each treatment is replicated five times in CRD. Observations such as plant growth, number of pseudo bulbs, length and girth of pseudobulb, number of leaves, shoot length, length & width of leaves, days taken for flowering and flower characters etc. are being recorded.

#### (ii) Effect of N, P, & K on growth and flowering of *Cymbidium* hybrid.

Investigation was undertaken to study the influence of foliar spray of 3 macronutrients at various concentrations (N-10, 20, 30; P-10, 20, 30 and K-10) and combination (18) at weekly intervals. Various growth parameters like number and length of pseudobulb, girth of pseudobulb, number of leaves per shoot, length of shoot etc. are being recorded at monthly intervals. Since it is a perennial crop results will be presented during next year.



**AD-HOC PROJECT****Project : 1. Protected cultivation of Ornamentals**

Date of Start	: November 1997
Date of termination	: April 2000
Principal Investigator	: Dr. R.C. Upadhyaya
Amount sanctioned	: 12 lakhs

**Achievements**

The construction of one green house and two poly houses were completed in December, 1998 and the following experiments were laid out in these structures under this project:

**Standardisation of agro-techniques for cut flower production of gladiolus**

Ram Pal and D. Barman

**(i) Evaluation of cultivars for cut flower production**

Nine varieties of gladiolus viz., Black Beauty, Rippling Water, Summer Pearl, Eight Wonder, Ice Gold, Tiger Flame, Her Majesty, American Beauty and Jester were evaluated for growth and performance during 1998. The results indicated (Table 3) that maximum number of florets (19) and long spike (94 cm) were recorded in Eight Wonder and Jester respectively. Maximum number of cormels (109) was recorded in Ice Gold. Ice Gold was early to flower (66 days) with maximum plant height (65 cm) at flowering. Ice Gold, Her Majesty and Eight Wonder were found to be promising varieties for Sikkim conditions. Further investigations were conducted again to confirm these results.

**Table 3: Performance of gladiolus cultivars at Sikkim conditions**

Variety	Plant Ht. (cm)	Leaf		Days for flowering	Spike length (cm)	No. of flowers	Flower diameter (cm)	No. of cormels per plant	
		No	Length (cm)						
American Beauty	42.2	8.0	29.7	2.5	71	75.5	15	9.8	16.3
Black Beauty	61.4	8.4	48.9	3.5	71	72.1	17	12.4	33.6
Eight Wonder	53.3	8.3	41.3	3.3	76	78.3	19	8.8	26.5
Her Majesty	57.2	7.5	43.5	2.7	72	76.6	14	9.2	99.2
Ice Gold	65.1	8.4	55.4	2.7	68	86.6	14	9.0	109.1
Jester	43.9	6.2	35.0	3.7	72	94.2	18	10.8	33.6
Rippling Water	42.8	7.3	36.4	3.1	71	78.2	17	9.4	6.7
Summer Pearl	50.1	7.7	41.8	3.2	71	71.4	16	8.6	49.7
Tiger Flame	44.3	6.3	36.2	3.1	76	74.3	16	9.2	55.2



(ii) Spacing cum varietal trial

To find out the optimum plant density and suitable cultivars for cut flower production, investigation was carried out using ten cultivars of gladiolus viz., American Beauty, Eight Wonder, Summer Sunshine, Her Majesty, Summer Pearl, Jester, Tiger Flame, Rippling Water, Black Beauty and Ice Gold at three spacing i.e., 20 cm x 20 cm, 30 cm x 20 cm & 30 cm x 15 cm. Results indicated that planting at 30 cm x 20 cm spacing was optimum for obtaining quality flowers. Most of the cultivars performed well at 30 x 20cm spacing. Maximum spike length (95 cm) and number of flowers/spike (19) were recorded in the cultivar Jester.

## Seminar/Symposium/Workshop

Dr. R.C. Upadhyaya, Director and Dr. D. Barman, Scientist (Hort.) attended International Festival of Orchids, organised by Orchid Society of Arunachal, Itanagar, 17-18<sup>th</sup> April 1998.

Dr. D. Barman, Scientist (Hort.) attended National Seminar on Management strategies for North Eastern Hill Ecosystem at ICAR Research Complex for NEH Region, Barapani, 8-10 August, 1998.

Mr. Sunil Kumar, T-II-3 (Computer) attended ARIS workshop and Seminar on Linux held during 5-7 March, 1999, at NBPGR, New Delhi.

## Training

Dr. D. Barman and Mr. Ram Pal, Scientists (Horticulture) attended training programme on "Protected cultivation of flowers" held at Institute of Himalayan Bioresource Technology, Palampur, Himachal Pradesh from 10-14 November, 1998.

## Budget Expenditure

### Statement of budget and expenditure for the year 1998-99

(Rupees in Lakhs)				
Sl. No.	Head of Account	Budget allocation 1998-99	Revised estimate 1998-99	Actual expenditure
1.	(a) Establishment charge	Rs. 20.00	Rs. 20.00	Rs. 20.00
	(b) Wages	Nil	Nil	Nil
2.	Travelling allowance	Rs. 2.00	Rs. 2.50	Rs. 2.50
3.	Other charges including equipment's	Rs. 40.00	Rs. 22.50	Rs. 22.50
4.	Works			
	Special repair	Nil	Nil	Nil
	(a) Major works	Rs. 30.00	Nil	Nil
	Total	92.00	45.00	45.00

## Personalia (1998-99)

### I. SCIENTIFIC

Sl. No.	Name	Designation
1.	Dr. R.C. Upadhyaya	Principal Scientist (Hort.) and Director (I/c)
2.	Dr. V. Nagaraju	Senior Scientist (Biotechnology)
3.	Dr. D. Barman	Scientist (Hort.)
4.	Shri Ram Pal	Scientist (Hort.)
5.	Dr. S.P.Das	Scientist (Plant Breeding)

### II. TECHNICAL

1.	Shri. P.B. Subbha	Tech. Asst. (T-II-3)
2.	Miss Pema Choden Bhutia	Tech. Asst. (T-II-3) Horticulture
3.	Shri Sunil Kumar	Tech. Asst. (T-II-3) Computer
4.	Shri G.B. Mukhiya	Field Farm Tech. (T-1)
5.	Shri D. Bhujel	Field Man (T-1)
6.	Shri R.C. Gurung	Technical Asst. (T-1) Driver

### III. ADMINISTRATION

1.	Shri Davis Joseph	Asst. Admn. Officer (On deputation)
2.	Miss Lakit Lepcha	Assistant
3.	Shri D. Banerjee	Steno grade II, P.A. to the Director (On deputation)
4.	Shri Rajat Kr. Das	Sr. Clerk
5.	Shri Abhay Kumar	Sr. Clerk (On deputation)
6.	Mrs. Diki Bhutia	Jr. Clerk
7.	Mrs. Dilmaya Subbha	Jr. Clerk

#### IV. SUPPORTING STAFF

- |                               |            |
|-------------------------------|------------|
| 1. Shri. S.K. Tamang          | S.S.G - IV |
| 2. Shri T.B. Sing             | S.S.G - II |
| 3. Shri Gopal Brahmin         | S.S.G - II |
| 4. Shri Phigu Tshering Bhutia | S.S.G - I  |
| 5. Shri Dawa Bhutia           | S.S.G - I  |
| 6. Shri Tularam Dulal         | S.S.G - I  |
| 7. Miss Meena Kumari Chettri  | S.S.G - I  |
| 8. Shri Trilok Singh Balmiki  | S.S.G - I  |

#### V. AD-HOC PROJECT

- |                 |                     |
|-----------------|---------------------|
| 1. Kumari Rajni | Sr. Research Fellow |
|-----------------|---------------------|

#### APPOINTMENTS AND TRANSFERS (1998-99)

##### APPOINTMENT

- |                      |                                     |          |
|----------------------|-------------------------------------|----------|
| 1. Dr. V. Nagaraju   | Sr. Scientist (Biotechnology)       | 08.03.99 |
| 2. Dr. S.P. Das      | Scientist (Plant Breeding)          | 23.11.98 |
| 3. Shri Davis Joseph | Asst. Admn. Officer (on deputation) | 30.08.99 |
| 4. Shri Abhay Kumar  | Sr. Clerk (on deputation)           |          |

##### TRANSFER

1. Shri P.H. Singh, Sr. Scientist (Pl. Pathology), transferred to Central Potato Research Institute, Shimla (H.P)
2. Shri Ram Pal, Scientist (Hort.) transferred to NRCO, Darjeeling Campus.
3. Shri G.B. Mukhiya, T-1, transferred to NRCO, Darjeeling Campus.
4. Shri S.K. Tamang, SSG - III, transferred to NRCO, Darjeeling Campus.

## Visitors



Visitors	Organization	Date
Dr. B. Lal	Head, Soil Science Division, ICAR Research Complex for NEH Region, Barapani, Meghalaya	19.5.98
Dr. S.P. Ghosh	Deputy Director General (Horticulture) ICAR, Krishi Bhawan, New Delhi - 110001	22.12.98
Dr. S.P.S. Raghava	Project-Coordinator (Floriculture), ICAR Division of Floriculture & Landscape Gardening, IARI, Pusa, New Delhi - 110012	16.3.99
Mr. Dil Bahadur Thapa	Minister cum MCA, Govt. of Sikkim	16.7.98
Chaudhary Randhir Singh	His Excellency the Governor of Sikkim	16.7.98
Dr. K.C. Dalal	Director, NRC on Medicinal & Aromatic Plants Boriani, Anand, Gujarat	21.11.98
Dr. A.P. Singh	Senior Scientist, Division of Floriculture & Landscape IARI, Pusa, New Delhi	23.11.98
Dr. R.L. Misra	Senior Scientist, Division of Floriculture & Landscape gardening, IARI, Pusa, New Delhi.	23.11.98
Mr. Ganesh K Pradhan	Director, Accounts and Administration training Institute, Gangtok, Sikkim	23.11.98
Mr. T.D. Lachungpa	Sr. Floriculturist, Gangtok	23.11.98
Mr. T.D. Chaudhary	Sr. Architect, C.P.W.D., Calcutta	24.11.98
Dr. K.S. Chauhan	Vice Chancellor, RAU, Pusa, Bihar	27.11.98
Mr. R. Subbha	Addl. Director, Horticulture Division,	10.12.98
Mr. G.K. Gurung	Principal Director, Horticulture Govt. of Sikkim	15.12.98
Mr. H.R. Sharma	Secretary, Building and Housing Govt. of Sikkim	16.12.98
Dr. A.S. Chauhan	Scientist I/C, B.S.I, Gangtok	22.12.98
Mr. B. Jukerji	BSI, Gangtok	22.12.98
Dr. K.C. Mishra	Joint Director, ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	22.12.98
Mr. Ram Samujh	Plant Protection Officer, C.I.P.M.C, Gangtok	22.12.98
Dr. K.K. Singh	Scientist, G.B. Pant Institute, Gangtok	22.12.98
Mr. A.P. Krishna	Scientist, G.B. Pant Institute, Gangtok	22.12.98
Dr. D.N. Singh	Officer I/C, R.R.C., (Ay), Tadong, Gangtok	22.12.98
Mr. R.N. Tewari	Research Officer (Botany), R.R.C (Ay) Gangtok	22.12.98

Dr. Patiram	Sr. Scientist (Soil Science), ICAR Research Complex for NEH Region Sikkim Centre, Tadong	12.2.99
Mr. K.C. Pradhan	Ex Chief Secretary, Govt. of Sikkim	26.3.99
Mr. A.W.K. Langstich	Accountant General, Gangtok, Sikkim	28.3.99

## हिन्दी सारांश

भारत के उत्तर-पूर्वीय क्षेत्र को अलंकृत फूलों वाले आर्किडस के उद्भव का एक विशिष्ट केन्द्र माना जाता है। आर्किडस फूलवाले पौधों का सबसे बड़ा कुल है, जिसके असंख्य वर्ण संकर और प्रभेद हैं। इनकी सम्भवतः 22,000 प्रजातियाँ और 700 जातियाँ पाई जाती हैं। इस आर्किड सम्पदा का संरक्षण करने के उचित उपाय नहीं किये गये तो इनमें से बहुत सी आर्किड प्रजातियों का अस्तित्व समाप्त हो जायेगा। इस जाति की महत्ता को देखते हुए भा.कृ. अनु.प. ने राष्ट्रीय आर्किडस अनुसंधान केन्द्र की स्थापना की। यह केन्द्र सिचिकम राज्य की राजधानी गैंगटोक से 32 कि.मी. दूर पाक्योंग में स्थित है।

यह केन्द्र पिछले दो सालों से फूलों पर शोध कार्य एवं इस सम्बन्ध में जरूरी विकास व्यवस्था प्रदान करने में कार्यरत है। वैज्ञानिकों एवं अन्य कर्मचारियों के सहयोग से केन्द्र इस छोटे से समय में अपना योगदान पूर्ण रूप से कर रहा है।

इस वर्ष केन्द्र ने जरूरी उपकरणों की खरीद की, जिससे कि शोध कार्य सुचारु रूप से चलाया जा सके। वर्तमान में केन्द्र पर कम्प्यूटर सेल, पुस्तकालय एवं इन्टरनेट सेवा उपलब्ध है। इस अनुसंधान केन्द्र पर पानी, बिजली की व्यवस्था प्रदान कर दी गई है। प्रक्षेत्र पर टेरेस का विस्तार एवं विकास किया गया है, जिससे कि ढलान का उचित उपयोग किया जा सके। इस केन्द्र पर बहुत से कार्य हिन्दी में किये जाते हैं जिससे राष्ट्र भाषा एक विकास का उचित माध्यम बने।

केन्द्र पर पाली हाऊस का निर्माण हो गया है और वह सुचारु रूप से कार्य कर रहे हैं, इसमें से पाँच पाली हाऊस कम लागत वाले स्थानीय तकनीक पर आधारित है। एक ग्रीन हाऊस भी बन गया है और उसका उपयोग आर्किड के उत्पादन में हो रहा है। इस संस्थान में इस समय एक प्रमुख वैज्ञानिक, 2 वरीय वैज्ञानिक, 3 वैज्ञानिक तथा तकनीकी, प्रशासनिक और सहायक कर्मचारी कार्यरत हैं। एक अनुसंधान सहायक परियोजना में कार्य कर रहा है।

ढाँचागत विकास के कार्य के रूप में फार्म की घेराबन्दी का कार्य किया गया। प्रयोगशाला सह प्रशासनिक भवन हेतु रेखांकन आदि स्वीकृति हेतु भा.कृ.अनु.प. को भेज दिया गया है। निकट भविष्य में स्वीकृति प्राप्त होते ही प्रथम किस्त के लो.नि.वि. को जमा कर दिया जाएगा। स्थायी निर्माण कार्यों के अन्तर्गत फार्म भवन के प्रथम तल पर तीन कमरों का निर्माण कराया गया ताकि इसे प्रशासनिक ब्लॉक की तरह प्रयोग किया जा सके। पुराने राज्य सरकार से प्राप्त गोदाम को कॉन्फ्रेन्स हॉल में नवीकरण के पश्चात परिवर्तित किया गया है







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