



Central legume crops in Israel (2012)

		Acers
Forage	Vetch (<i>Vicia benghalensis</i>)	9000
	Clover (<i>Trifolium alexandria</i>)	16000
	Alfalfa (<i>medicago sativa</i>)	3000
	Pisum	6000
Seed	Cicer	16000
	Arachis	8000
	Pea	5000
	Bean	2500

Israel Plant Gene Bank

(<http://igb.agri.gov.il/main/index.pl>)



Dr. Rivka Hadas

The screenshot shows a web browser window displaying the Israel Plant Gene Bank website. The browser's address bar shows the URL <http://igb.agri.gov.il/main/index.pl>. The website header features the IGB logo on the left, a navigation menu with links for Home Page, Facilities, Search, Seed Request, Team, About, Contact Us, and Login / Registration, and the Agricultural Research Organization (ARO) Volcani Center logo on the right. The main content area is titled "Welcome to Israel Plant Gene Bank" and includes a sidebar with menu items such as Workshops and meetings, Collections, Collection mission, Phylogeographic Information, Research and Publications, Affiliated Institutes, International Relations, Future Plans, Database Management and Sources, and Preservation of Cucurbita germplasm. The main text describes the bank's mission to conserve indigenous plant species. A photograph of the building is shown, with a Hebrew caption below it: "בנק הגנים לצמחי ארץ ישראל" (Israel Plant Gene Bank). The text below the photo explains the bank's role in conserving genetic diversity and its commitment to research and education.

Workshops and meetings

Collections

Collection mission

Phylogeographic Information

Research and Publications

Affiliated Institutes

International Relations

Future Plans

Database Management and Sources

Preservation of Cucurbita germplasm

Welcome to Israel Plant Gene Bank

The bank is responsible for collection, preservation and evaluation of plant species indigenous to Israel including landraces and primitive cultivars.

Our goal is to conserve representative gene pools of species with an untapped economic potential.

בנק הגנים לצמחי ארץ ישראל

יחידו בשימור השונות הביולוגית והגנטית של כלל צמחיית הבר של ארץ ישראל. בשלב הראשון מתמקדת הפעילות בצמחי בר קרובי צמחי תרבות בעלי פוטנציאל כלכלי שימושי, צמחי בר נדירים, אנדמים ובסכנת הכחדה, ומינים חקלאיים עתיקים שגודלו באזור לאורך הדורות. בנק הגנים מקדם מחקר אודות המאגרים הגנטיים ואיתור תכונות חשובות לתועלת האדם והסביבה. מקדם יצירת קשרים ושיתופי פעולה לאומיים ובינלאומיים בנושאים של שימור זרעים ושימור שונות גנטית. בנוסף, מקיים הבנק פעילויות להעלאת המודעות הציבורית בנושאים אלה.



Agricultural Research Organization (ARO) Volcani Center

- Workshops and meetings
- Collections
- Collection mission
- Phytogeographic Information
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- International Relations
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Search : Cicer judaicum

Taxon : e.g. Allium ampeloprasum
 or
 Hebrew name : e.g. שום גבוה



Access number	Flora Palestina	Hebrew name	Old access number	Collector	Collection date	Region	Country of Origin
25563	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה		Alon Singer, Tomer Faraj	2013-04-21	Mount Carmel	ISR
24291	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה		Ofra Fridman	2011-05-09	Samaria Mountains	ISR
24287	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה		Alon Singer, Tomer Faraj	2011-06-09	Philistean Plain	ISR
22532	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	0	Ran Lotan	2009-05-24	Menashe Hills	ISR
19780	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	0	yair ur, dvora shizer	2006-05-10	Mount Carmel	ISR
-3687	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	39954		0000-00-00	Unknown	LBN
-3688	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	39955		1986-01-01	Philistean Plain	ISR
-3689	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	39956		1986-01-01	Philistean Plain	ISR
-19796	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	70359		2003-01-01	Shefela	ISR
-19797	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	70360		2003-01-01	Mount Carmel	ISR
-19798	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	70361		2003-01-01	Unknown	ISR
-19799	Cicer pinnatifidum Jaub. & Sp.	חימצה שסועה	70362		2003-01-01	Unknown	ISR

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Distribution according to the data of the Plants guide.

Wild (central) legume accessions in the Israeli Gene Bank

Genus	Genus	Species	No of accession in IGB	No of sp. in Israel	Genus	Genus	Species	No of accession in IGB	No of sp. in Israel
Pisum				3	Lathyrus				24
	Pisum	fulvum	12			Lathyrus	pseudocicera	2	
	Pisum	syriacum	2			Lathyrus	ochrus	10	
	Pisum	elatius	2			Lathyrus	gloeosperma	4	
Vicia				15		Lathyrus	spathulatus	4	
	Vicia	palaestina	12			Lathyrus	inconspicuus	1	
	Vicia	tenuifolia	3			Lathyrus	setifolius	3	
	Vicia	lathyroides	1			Lathyrus	sphaericus	6	
	Vicia	narbonensis	9			Lathyrus	aphaca	13	
	Vicia	villosa	6			Lathyrus	marmoratus	4	
	Vicia	sativa	18			Lathyrus	clymenum	2	
	Vicia	basaltica	1			Lathyrus	nissolia	2	
	Vicia	galeata	8			Lathyrus	lentiformis	6	
	Vicia	galilaea	2			Lathyrus	cassius	3	
	Vicia	hulensis	3			Lathyrus	blepharicarpus	5	
	Vicia	hybrida	2			Lathyrus	hirsutus	1	
	Vicia	ervilia	3		Lupinus				
	Vicia	esdraelonensis	2			Lupinus	palaestinus	6	7
	Vicia	cypria	3			Lupinus	pilosus	11	
Cicer				1		Lupinus	luteus	9	
	Cicer	judaicum	8			Lupinus	angustifolius	17	
Lens				3		Lupinus	micranthus	4	
	Lens	orientalis	4						
	Lens	ervoides	3						
	Lens	culinaris	2						



Genetic resources for peanut breeding in Israel

Dr. Ran Hovav

Mr. Ilan Hedvat



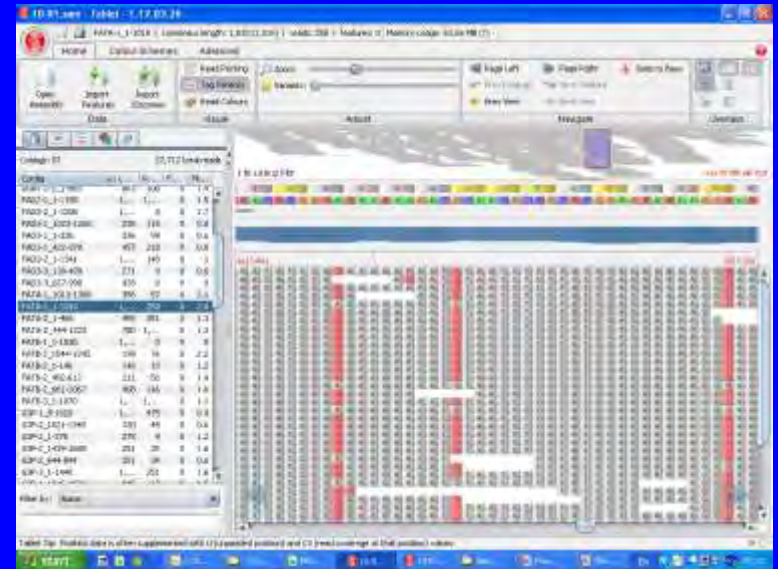
ARO Peanut and Polyploid Crops Research Lab

Peanut Genetics and Breeding



Polyploidy research

- Gene expression
- Seed oil metabolism



A-Genome

B-Genome



Features of the peanut industry in Israel

- ~ 8000 acres.
- All “ Virginia type”.
- 50% “Within Shell” – export to Europe (Italy, Germany, Nederland).
- 50% local use, mostly “without shell”.
- Grown under (>99%) irrigation.
- Limited sandy lands.



Harari

Hanoch

Breeding goals:

- **Resistance to biotic traits.**
- **Improving shell color.**
- **Improving nutritional quality (oil components).**
- **Improving yield under water limiting conditions.**

Resistance to biotic traits:

- *Streptomyces scabies*
- “Fusarium” pink stains



Peanut genetic resources at ARO

Large size (>3000) mutant population
(with mutation rate every ~ 500Kbp)



World-wide collection of > 700 peanut varieties



Extensive breeding program including ~200
advanced lines and cultivars



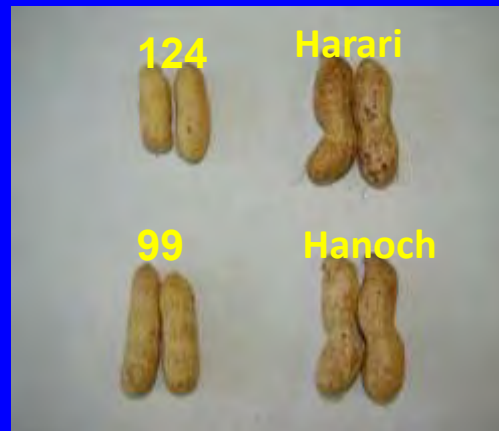
Usage of the world peanut collection:

- Tolerance to pod wart (*Streptomyces*).
- Improving shell color.
- Introducing high oleic peanut.
- The genetics of pod filling under water limiting conditions.



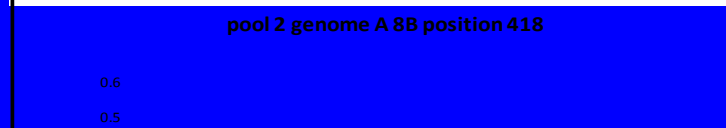
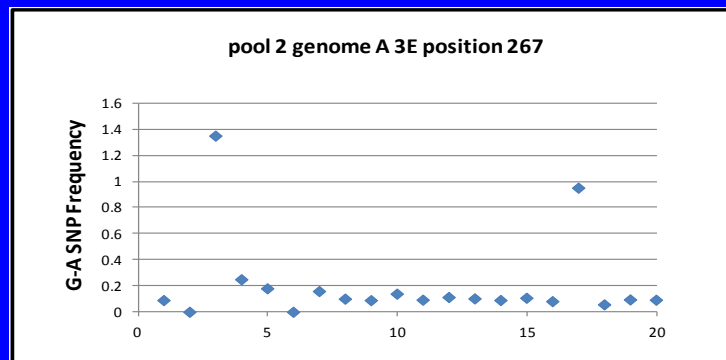
Hanoch

Line 111



Usage of the peanut mutant populations:

- Tolerance to pod wart (*Streptomyces*).
- “Instant” bunch types peanut.
- High oleic peanut.
- High stearic peanut for All Natural Peanut Butter industry.
- low oil and low palmitic peanut.





Chickpea Breeding and Development

Dr. Shmuel Galili

Dr. Ran Hovav

Dr. Joseph Hershenhorn



Features of the chickpea industry in Israel

- “local national food” (Humus).
- 16000 Acers.
- 100% local use.
- Grown under irrigation (300-350 kg/Dunam) or without irrigation (150-200 kg/Dunam).





Breeding goals:

- **Resistance to biotic traits**
- **Resistance to abiotic traits**
- **Improving nutritional quality**
- **Improving yield**
- **Suitability for mechanical harvesting**
- **Suitability for fresh harvesting**



Resistance to biotic traits:

- **Ascochyta blight**
- **Fusarium wilt**
- **Botrytis cinerea**
- **Downy mildew (Peronospora)**
- **Orobanche Broomrape**
- **Cuscuta campestris**



Resistance to abiotic traits:

- ALS herbicide

Improving nutritional quality:

- Increasing polyphenols and antioxidant activity
- Increasing total fibers





Genetic resources:

- **More than 300 accessions derived from more than 30 countries**
- **EMS mutant population with about 2,500 families**

Fusarium wilt selection

Sensitive

Resistance



Breeding plots





Field trail

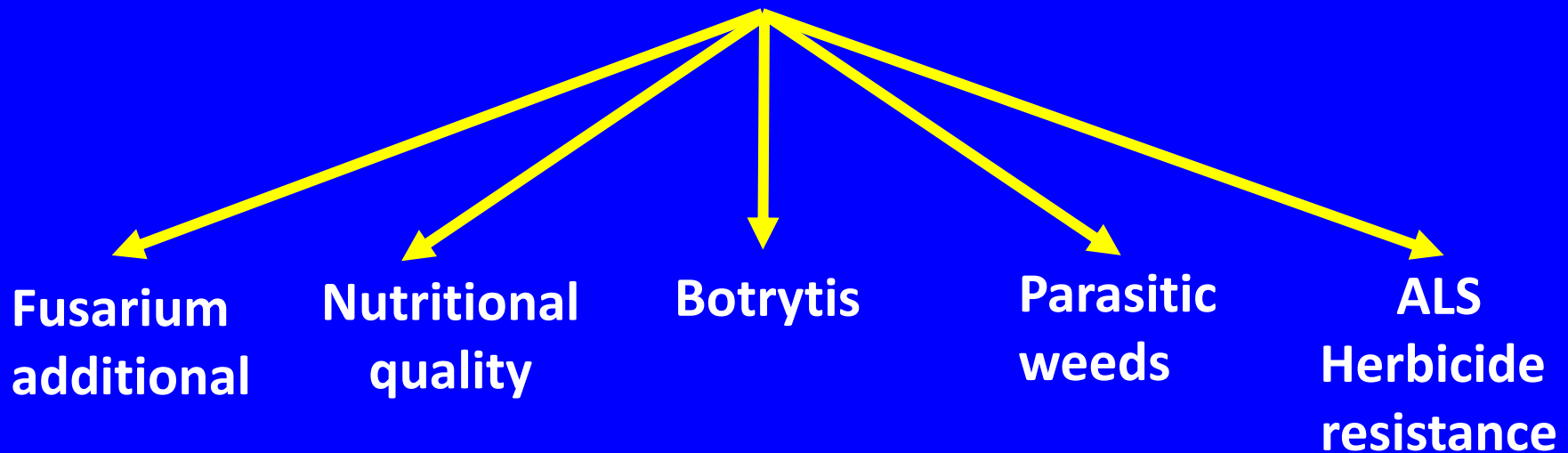


New cultivars



EMS mutants population

2,500 families derived from line resistant to:
Ascochyta blight, Fusarium wilt with high yield





EMS mutants population





ALS resistance





WT line





