Phaseolus and Internet

1. **What is Internet and WWW?**
2. **Modern use**
3. ***Phaseolus* on the Internet**
4. **Legume sites**

What is the Internet?

The Internet is a worldwide, publicly accessible *network of interconnected computer networks* that transmit data by packet switching using the standard Internet Protocol (IP). It is a "**network of networks**" that consists of millions of smaller domestic, academic, business, and government networks.

World Wide Web (WWW)

The World Wide Web (or the "Web") is a **system of interlinked, hypertext documents that runs over the Internet**. With a Web browser, a user views Web pages that may contain text, images, and other multimedia and navigates between them using hyperlinks.

The Web was created around 1990 by the Englishman **Tim Berners-Lee** and the Belgian **Robert Cailliau** working at CERN in Geneva, Switzerland.

Timeline

1960s	Advent of packet-switching network heralds **birth of Internet**
1970s	ARPA introduces network for defense and develops **e-mail** US universities join network
1973	First **intercontinental** network connection (London)
1979	**USENET** is developed, pushing Internet's rapid expansion
1990	Tim Berners-Lee develops the **HTML**
1991	WorldWideWeb **browser and server** software made available by Tim Berners-Lee
1993	**Mosaic**, the first properly developed **graphic web-browser** takes Internet by storm
1995	Amazon launched and **1998 Google** "opens its doors"
2004	Web 2.0: user generated content, collaboration, social networking, tagging, RSS feeds
2006	Number of websites tops the 100,000,000 mark

Use of the Internet

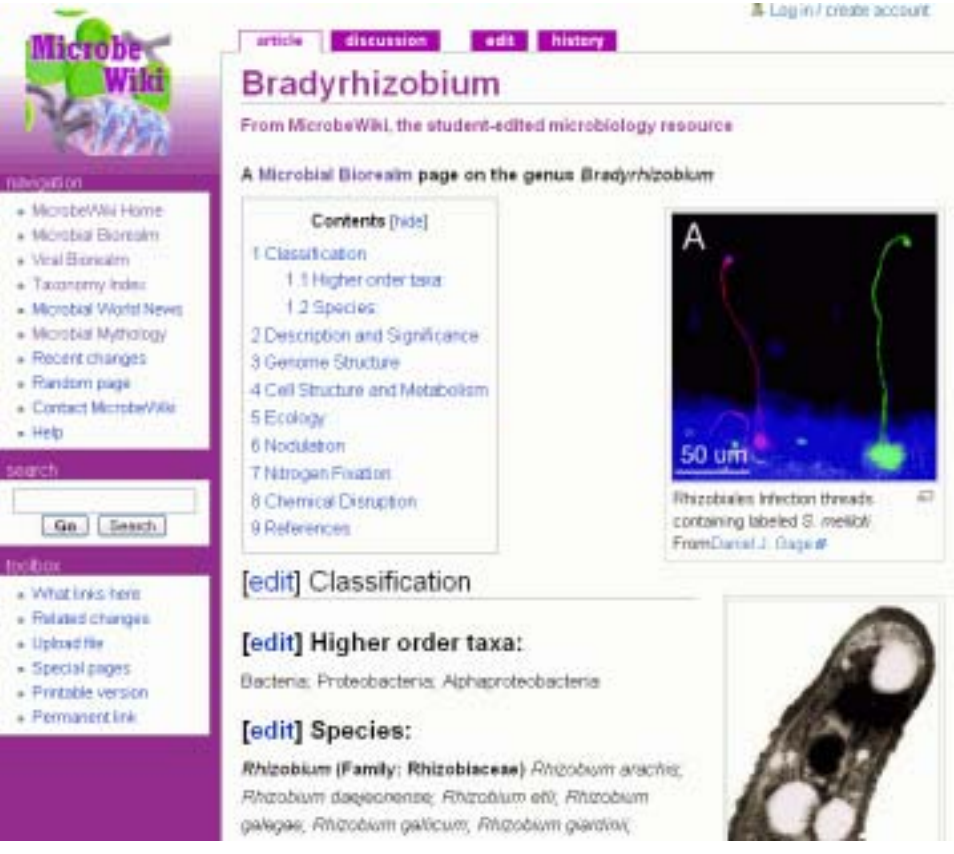
Classical	Modern (Web 2.0)
• email, mailing list, forums • presentation of individuals and groups • static information and database searches	• blog • wiki • social bookmarking and tagging • communities and portals

Blog - (web log)

- Blogs provide **commentary or news on a particular subject**, such as food, politics, or local news.
- combines text, images, and links to other blogs, web pages
- articles in a **reverse chronological order**
- updated **regularly**

Paul Myers (assoc. Prof. Univ. Minnesota)

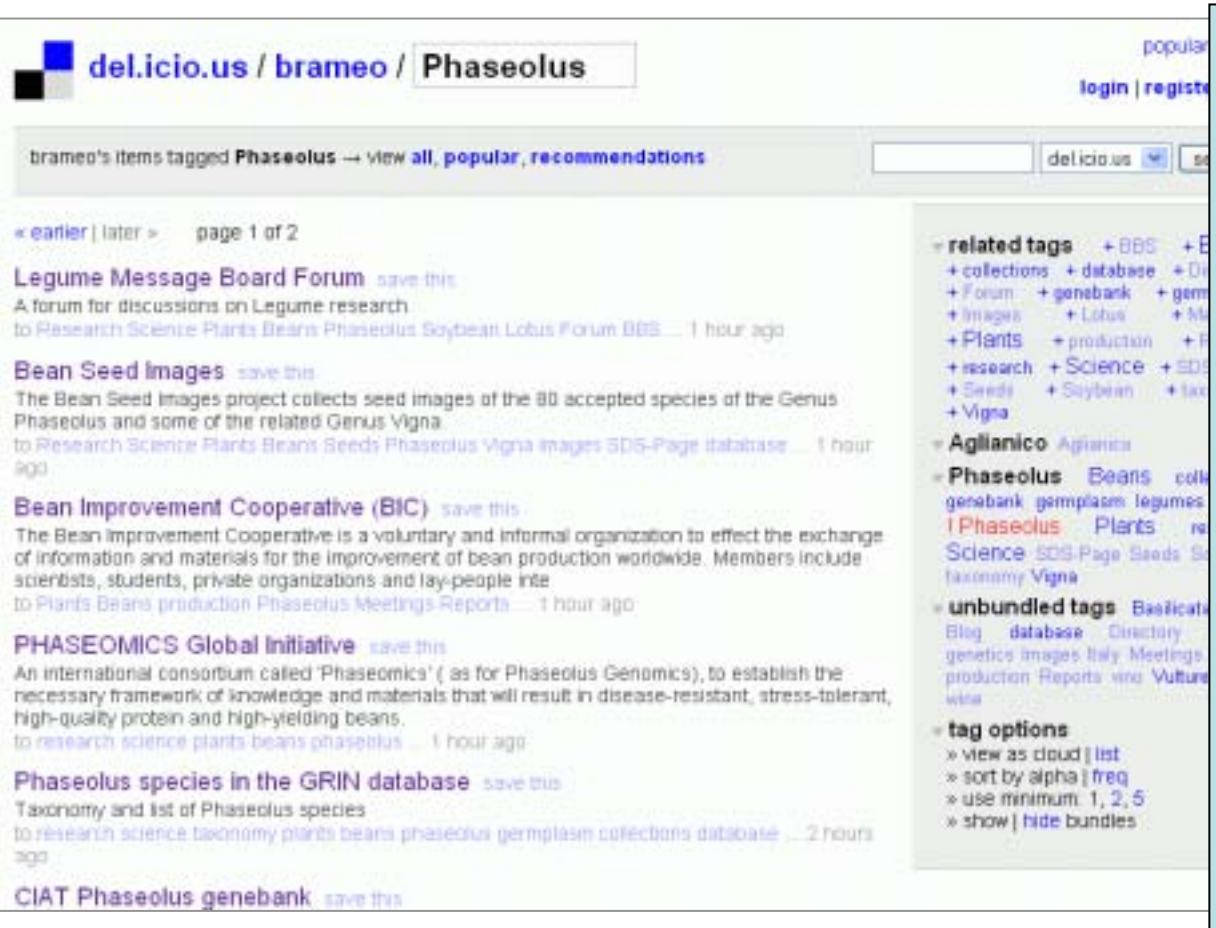
Wiki



A wiki is a:

- a web site where a group of people can **add, remove, and edit content** (text, images, videos, documents)
- a **collaborative technology** for **organizing information** on Web sites
- the first wiki (WikiWikiWeb) was developed by Ward Cunningham in the mid-1990s
- **Wikipedia**, an online encyclopedia, is one of the best known wikis

Social bookmarking and tagging



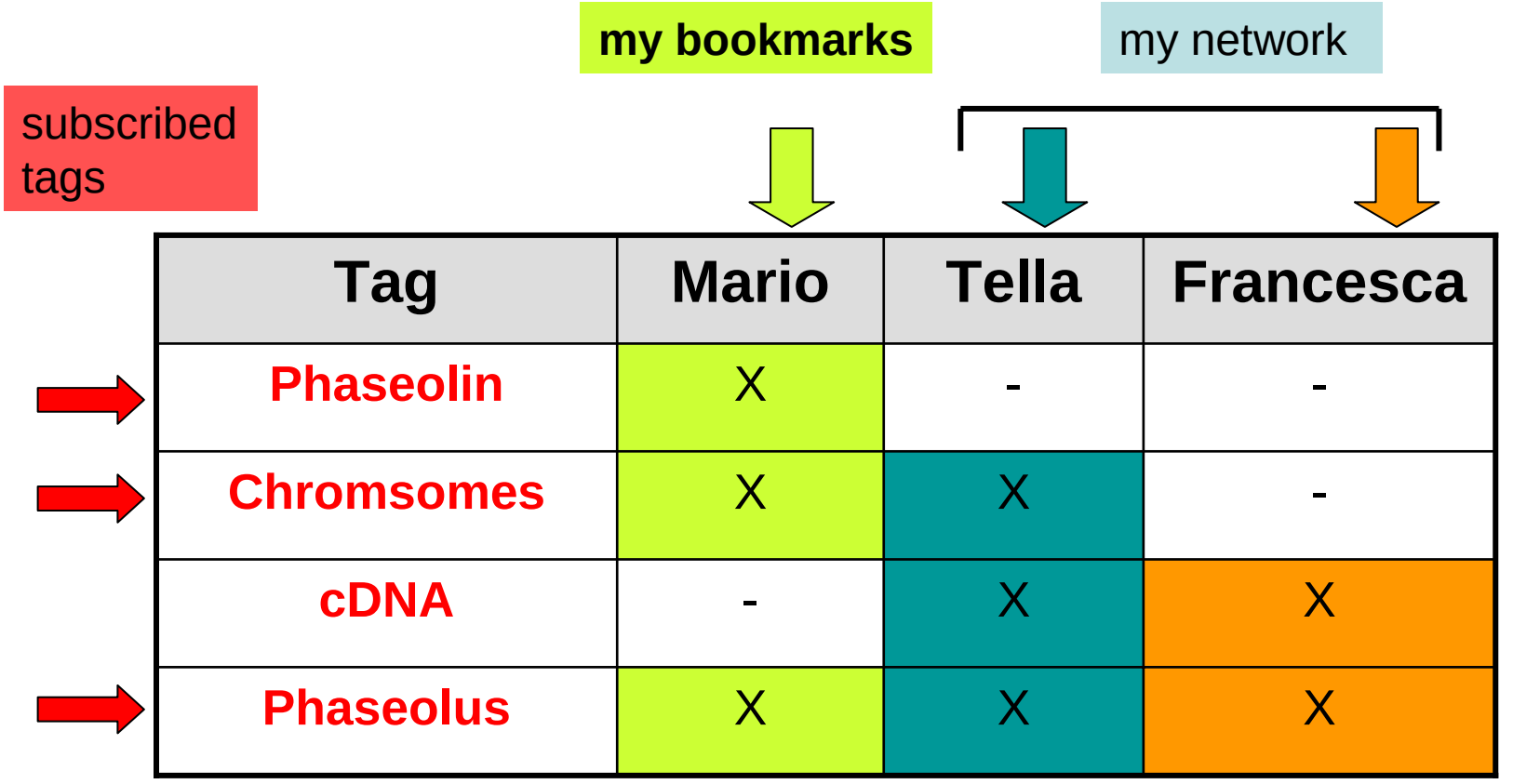
- del.icio.us
- technorati.com

store and share bookmarks on the web

Advantages:

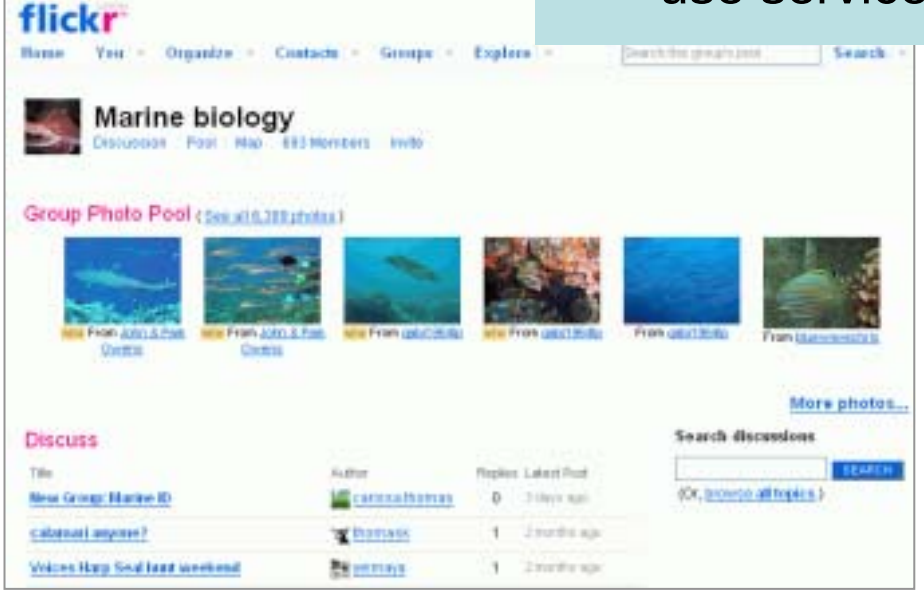
- **use** your bookmarks from **anywhere**
- **share** your bookmarks publicly
- find other people who have interesting bookmarks and add their links to your own collection
- **tagging** (keywords)

How is working social bookmarking/tagging?



Communities and portals

- user registration
- interest groups
- multi-topic
- multi-function:
  - messages
  - forums
  - upload content
  - use services

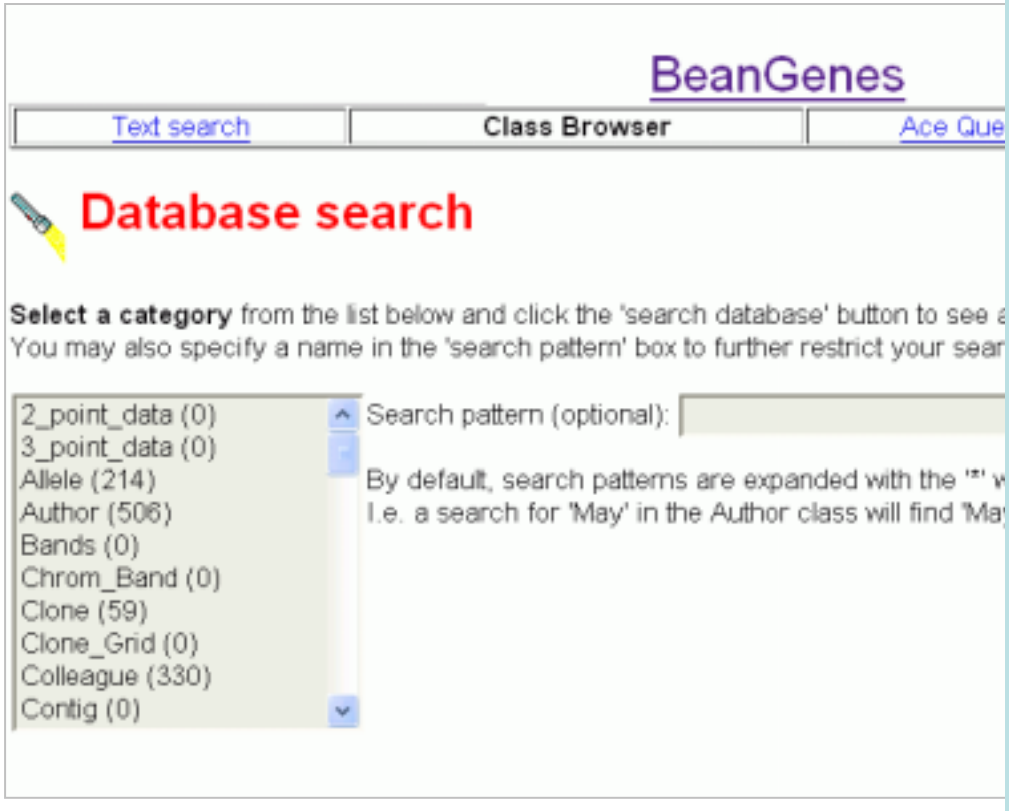


Phaseolus on the Internet

- **Websites and link directories**
- **Genebanks**
- **Sequence and image databases**
- **Group presentation**
- **Communication**

BeanGenes DB

ACEDB Database released in March 1995



Contains:

- published molecular maps of *Phaseolus vulgaris*
- associated with each molecular map are loci and probe information
- gene information that was complied by Dr. Bassett
- the published references

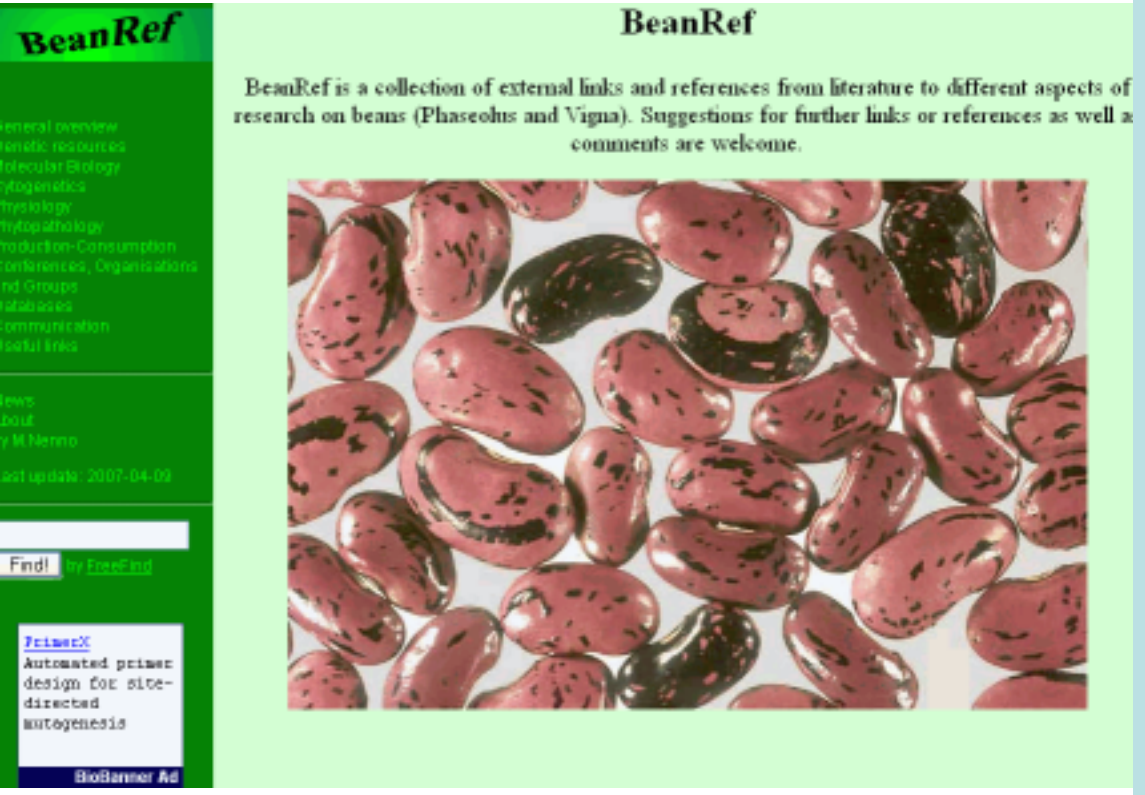
BeanRef history

Contains:

- Links and references to different topics in Phaseolus and Vigna research

- Released in autumn 1995 at Univ Kaiserslautern (DE)
- 1997 CNR at Bari (IT)
- 2002 Milan(IT)

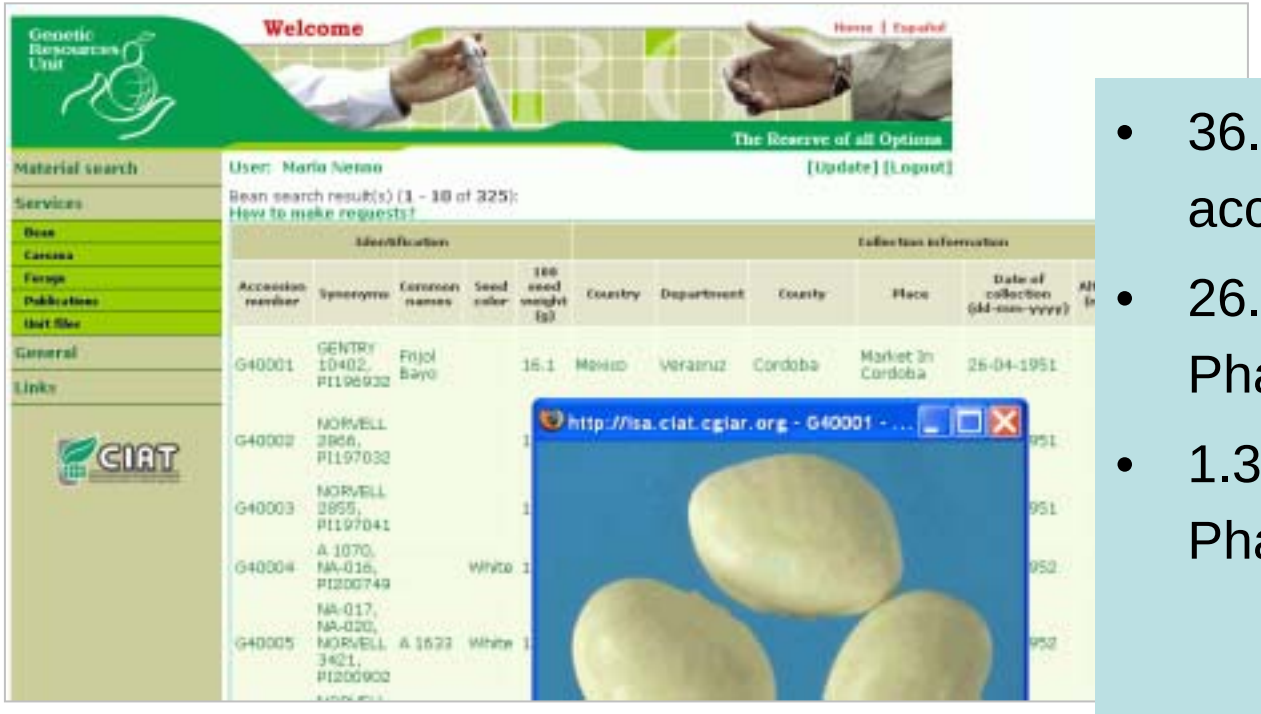
BeanRef today



Links and references:

- germplasm collections, taxonomy,
- molecular biology and genetics, classical and molecular cytogenetics,
- physiology and phytopathology
- production and consumption,
- conferences, organizations, laboratory groups, and
- related databases
- electronic and printed communications

Centro Internacional de Agricultura Tropical (CIAT) genebank

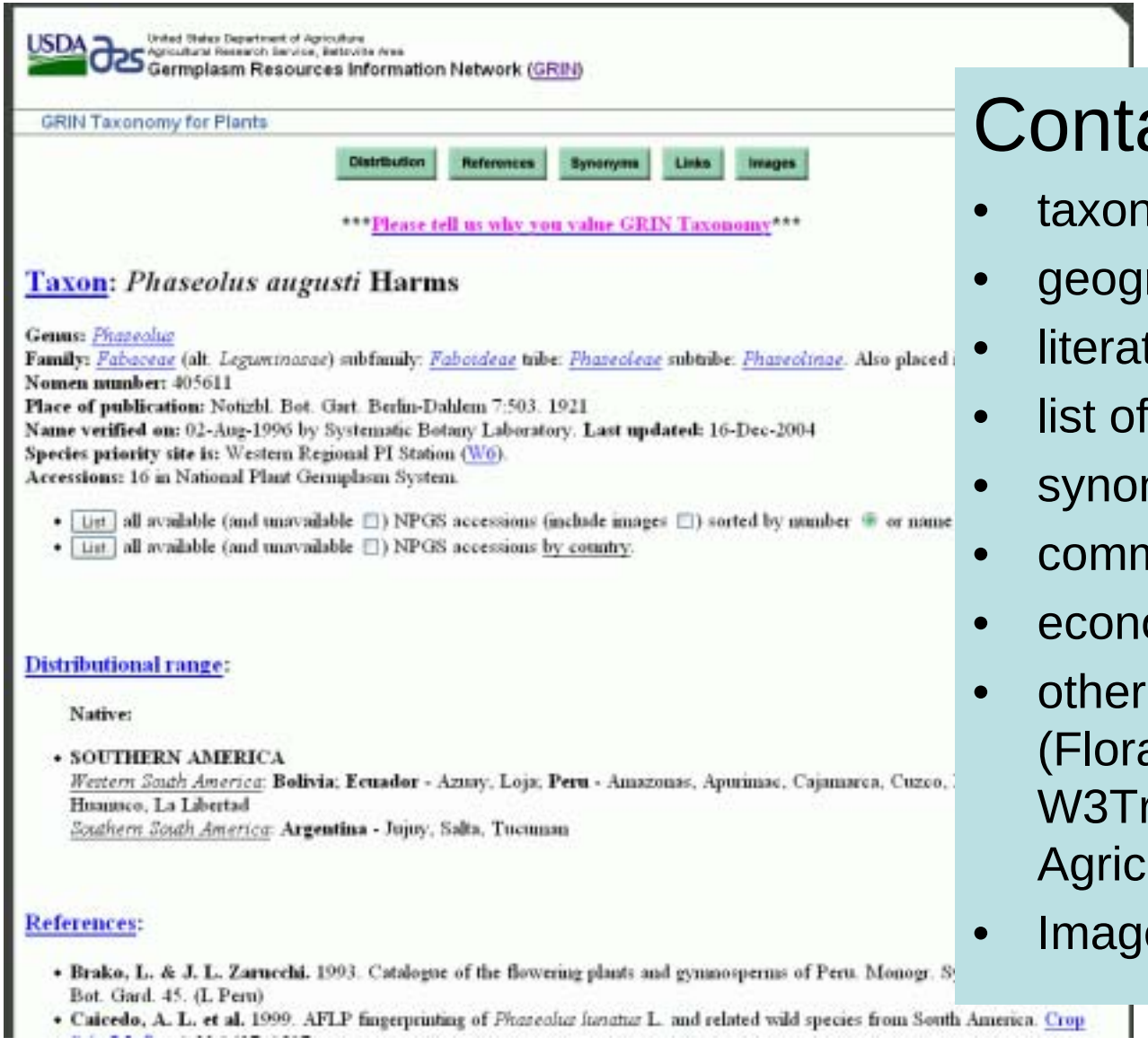


- 36.000 Phaseolus accessions
- 26.500 cultivated Phaseolus vulgaris
- 1.300 wild Phaseolus vulgaris

USDA Phaseolus Genetic Stock Collection

- National Plant Germplasm System (NPGS)
- located in Pullman, WA
- many P. species
- GRIN (Germplasm Resources Information Network)

GRIN Taxonomy DB



USDA ARS United States Department of Agriculture, Agricultural Research Service, Beltsville Area
Germplasm Resources Information Network (GRIN)

GRIN Taxonomy for Plants

Distribution | References | Synonyms | Links | Images

Please tell us why you value GRIN Taxonomy

Taxon: *Phaseolus augusti* **Harms**

Genus: *Phaseolus*
Family: *Fabaceae* (alt. *Leguminosae*) subfamily: *Faboideae* tribe: *Phaseoleae* subtribe: *Phaseolinae*. Also placed
Nomen number: 405611
Place of publication: Notizbl. Bot. Gart. Berlin-Dahlem 7:503. 1921
Name verified on: 02-Aug-1996 by Systematic Botany Laboratory. **Last updated:** 16-Dec-2004
Species priority site is: Western Regional PI Station (W6).
Accessions: 16 in National Plant Germplasm System.

- List all available (and unavailable ☐) NPGS accessions (include images ☐) sorted by number or name
- List all available (and unavailable ☐) NPGS accessions by country.

Distributional range:

Native:

- **SOUTHERN AMERICA**
  Western South America: **Bolivia**; **Ecuador** - Azuay, Loja; **Peru** - Amazonas, Apurimac, Cajamarca, Cuzco,
  Huanuco, La Libertad
  Southern South America: **Argentina** - Jujuy, Salta, Tucuman

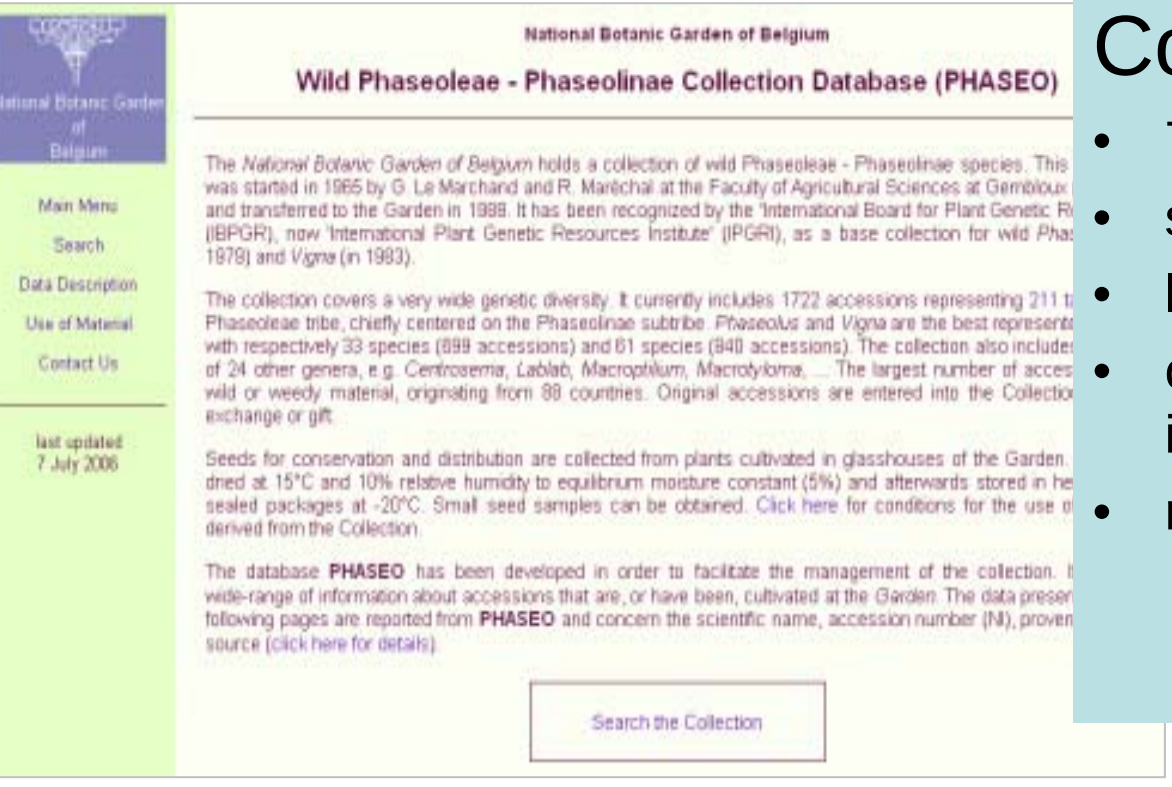
References:

- **Brako, L. & J. L. Zarucchi.** 1993. Catalogue of the flowering plants and gymnosperms of Peru. Monogr. S
  Bot. Gard. 45. (L Peru)
- **Caicedo, A. L. et al.** 1999. AFLP fingerprinting of *Phaseolus lunatus* L. and related wild species from South America. Crop

Contains:

- taxonomy
- geographic distribution
- literature references
- list of NPGS accessions
- synonyms
- common names (lang)
- economic importance
- other plant datbases (Flora Europea, W3Tropicos, ILDIS, ePIC, Agricola, Entrez)
- Images

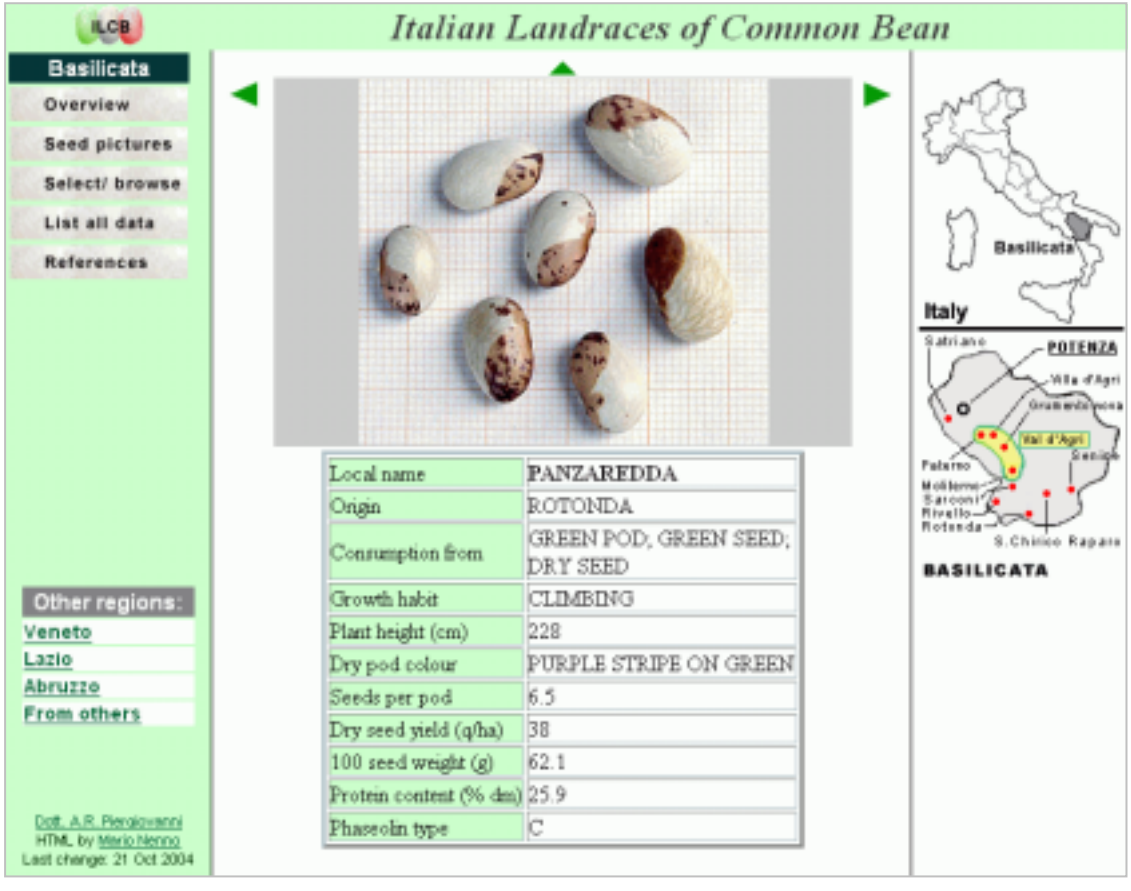
Wild Phaseoleae - Phaseolinae Collection Database (PHASEO)



Contains:

- 700 Phaseolus acc.
- status
- location and altitude
- collector and donor information
- related accessions

Italian Landraces of Common bean(ILCB)



Contains:

- 96 Italian landraces
- local name
- origin
- growth habit
- seed description
- 100 seed weight
- protein content
- phaseolin type
- seed images

Bean Improvement Cooperative (BIC)

Bean Improvement Cooperative

- Home
- Annual Reports
- Registration
- Meetings
- Review Articles
- Research Techniques
- BIC Committees
- Genetics
- BIC Awards
- Links

BIC Annual Reports 1998-2006

BIC annual reports volumes 41 through 49 are attached as links. If you have difficulty downloading the files, CD versions are available for the cost of $15.00 by contacting BIC President Dr. James D. Kelly at kellyj@msu.edu.

Current year 2006 BIC report volume 49 can be obtained by joining the BIC - see details on registration form on the attached page.

- BIC 2002 Annual Report
- BIC 2003 Annual Report
- BIC 2004 Annual Report
- BIC 2005 Annual Report
- BIC 2006 Annual Report

Gepts Lab

UCDAVIS Plant Sciences

CROP EVOLUTION, DOMESTICATION, AND BIODIVERSITY - PAUL GEPTS LAB AT UC DAVIS

- Home
- Lab Members
- Research
- Phaseolus-Vigna Genome Mapping
- Education and Teaching
- Plant Breeding Education at UC Davis
- Lab Meetings
- CATG Initiative
- Phaseomics V Meeting
- Outreach
- Links

Publications

(in reverse chronological order; **for publications listed by themes, click here**)

Updated April 15, 2007

2007 Chambers KJ, Brush SB, Grote M, Gepts P Describing maize (*Zea mays* L.) landrace persistence in the Bajio of Mexico: A survey of 1940s and 1950s collection locations. Econ Bot 61:60-72 **Pdf version** (© 2007 Society for Economic Botany)

2007 Martínez-Castillo J, Zizumbo-Villareal D, Gepts P, Colunga-García-Marín P. Gene flow and genetic structure in the wild–weedy–domesticated complex of *Phaseolus lunatus* L. in its Mesoamerican center of domestication and diversity. Crop Sci. 47:58–66 DOI 10.2135/cropsci2006.04.0241 **Abstract / Pdf version** (© 2007 Springer Verlag)

2006 Feleke, Y., R.S. Pasquet and P. Gepts. Development of PCR-based chloroplast DNA markers that characterize domesticated cowpea (Vigna unguiculata ssp. unguiculata var. unguiculata) and highlight its crop-weed complex. Plant Systematics and Evolution 262: 75–87 DOI 10.1007/s00606-006-0475-0 **Abstract / Pdf version** (© 2006 Springer Verlag)

2006 Gepts P. Plant genetic resources conservation and utilization: the accomplishments and future of a societal insurance policy. Crop Science 46:2278–2292.DOI:10.2135/cropsci2006.03.0169gas **Abstract / Pdf version** (© 2006 Crop Science Society of America).

2006 Gepts P, Hancock J. The future of plant breeding. Crop Science 46: 1630-1634 DOI: 10.2135/cropsci2005-12-0497op. **Abstract / Pdf version** (© 2006 Crop Science Society of America).

2006 Martínez-Castillo J, Zizumbo-Villarreal J, Gepts P, Delgado-Valerio P, and Colunga-GarcíaMarín P. Structure and genetic diversity of wild populations of Lima bean (*Phaseolus lunatus* L.) from the Yucatan peninsula, Mexico. Crop Sci 46: 1071-1080 doi:10.2135/cropsci2005.05-0081. **Abstract / Pdf version** (© 2005 Crop Science Society of America).

Phaseolus Seed Protein Group (PSPG)

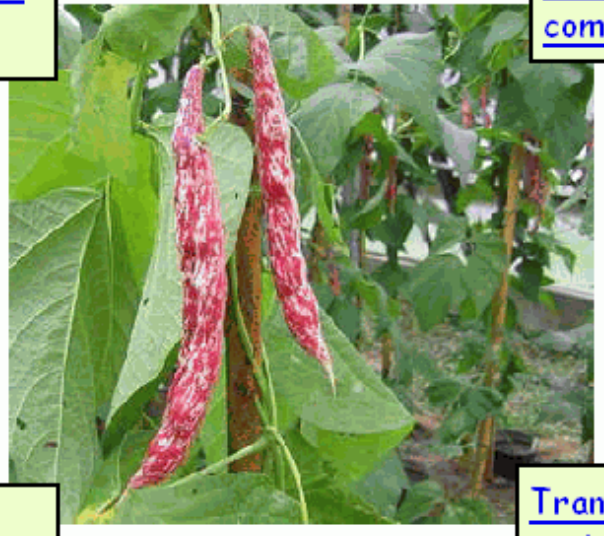
PSPG

- About PSPG
- Activities
- Patents
- Members & Collaborators
- Links
- Press communications

Present ongoing research activites

Bean seeds improvement

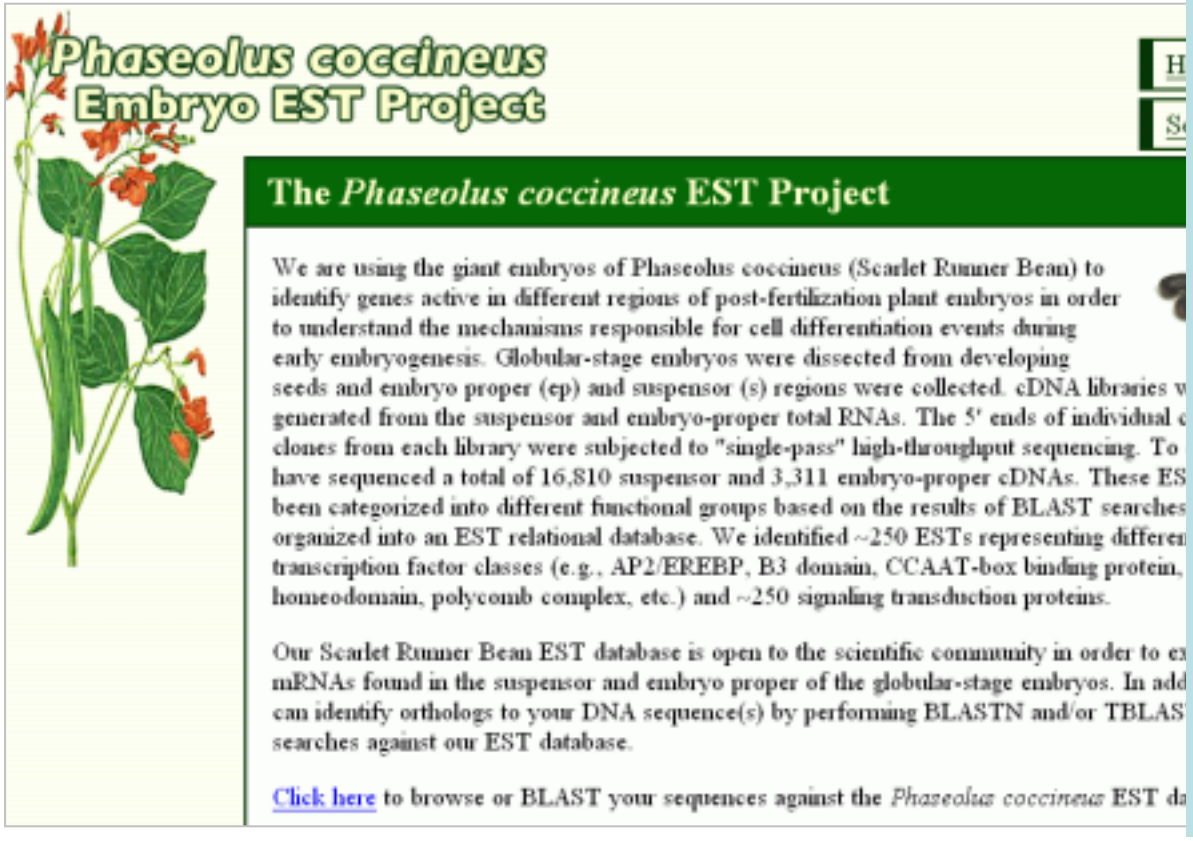
Modulation of nutritionally active compounds



APA locus organization and evolution

Transcriptional analysis of the UPR in bean cotyledons

Phaseolus coccineus EST DB



Contains:

- Cell differentiation events during early embryogenesis
- 16.000 suspensor
- 3.000 embro-proper
- categorized into different functional groups based on the results of BLAST searches

Phaseolus vulgaris physical map

Contains:

- WebFPC: display contigs
- WebChrom: contigs and genetic markers aligned to chr.
- WebBSS:BLAST your sequence against sequenced clones
- WebFcmp: compare one fp against all

Phaseomics site

PHASEOMICS

Global Initiative
Transformation workgroup
Est workgroup
Genetic Resources and Libraries
Partner links
Links to Phaseolus related sites
Meetings pictures
Link to exchange grants page
Feedbakc

Laste update:
2004-02-26

PHASEOMICS Global Initiative

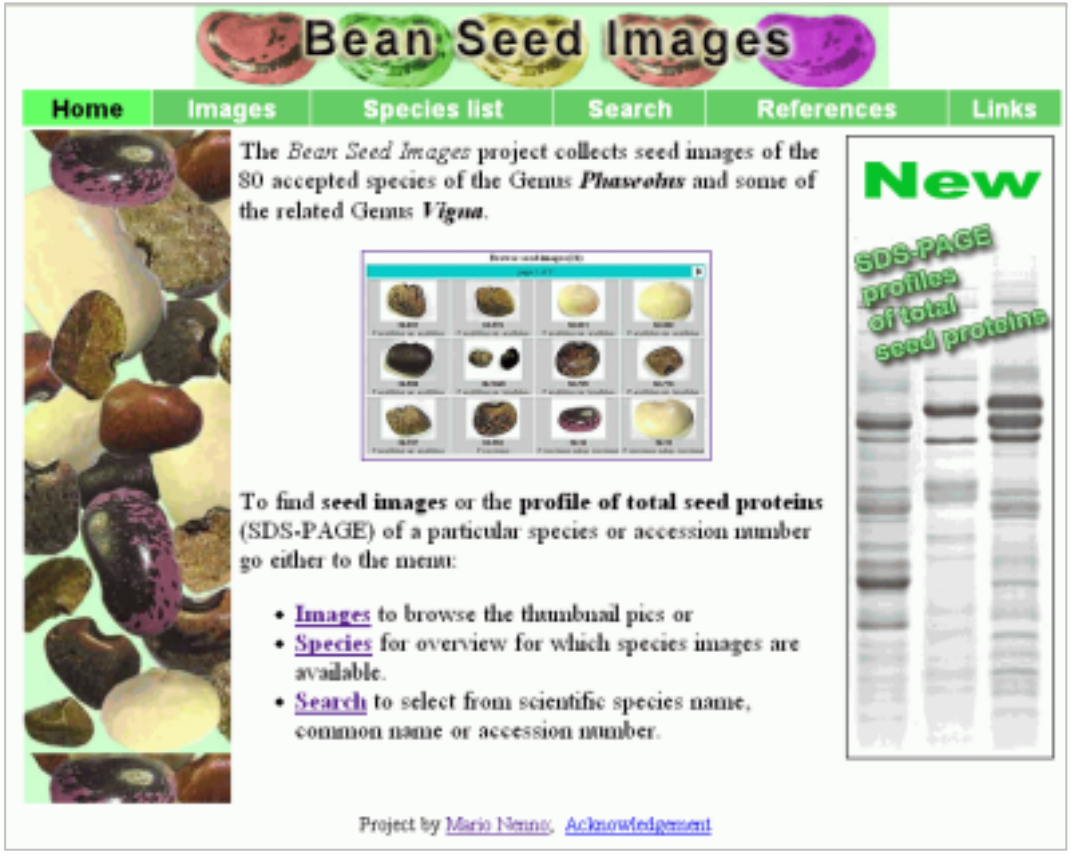
- Introduction
- The Phaseomics initiative
- Partners

Introduction

Beans are one of the most ancient crops of the world. Together with maize and cassava, they have been a dominant staple in the low to mid-altitudes of the Americas for millennia. Beans (Phaseolus spp. L) are extremely diverse crops in terms of cultivation methods, uses, the range of environments to which they have been adapted, and morphological variability. They are found from sea level up to 3,000 metres above sea level, are cultivated in monoculture, in associations, or in rotations. Beans are consumed as mature grain, as immature seed, as well as a vegetable (both leaves and pods). Their genetic resources exist as a complex array of major and minor gene pools, races and intermediate types, with occasional introgression between wild ancestors and domesticated types. Beans are thus a crop that is adapted to many niches, both in agronomic and consumer preference terms. As fruit (pods) can be obtained in as little as two months, rotations are possible with other crops during short growing seasons. Short bush growth habits offer minimal competition and permit inter-planting with other species, for example, in reforestation projects or among fruit trees or coffee plantations during the early years until the main crop can be exploited. At the other extreme are aggressive climbers found at higher altitudes on subsistence farms where a few plants are maintained as a sort of insurance and are continually harvested for about six months. Over the past twenty years, beans have also been increasingly cultivated on a commercial scale, and are now offered in national, regional and international markets.

Diets of subsistence level farmers in Africa and Latin America often contain sufficient

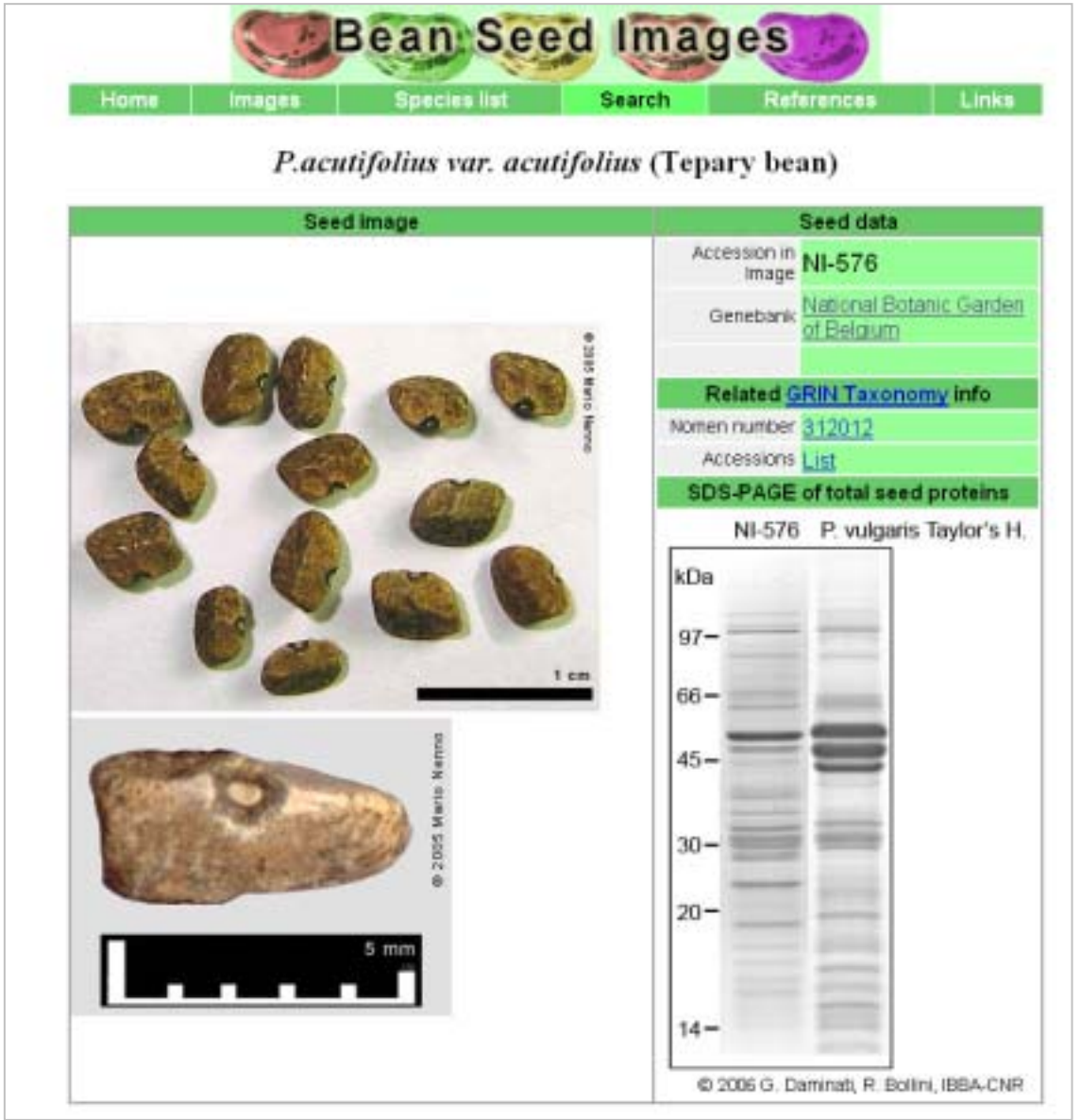
Bean seed images



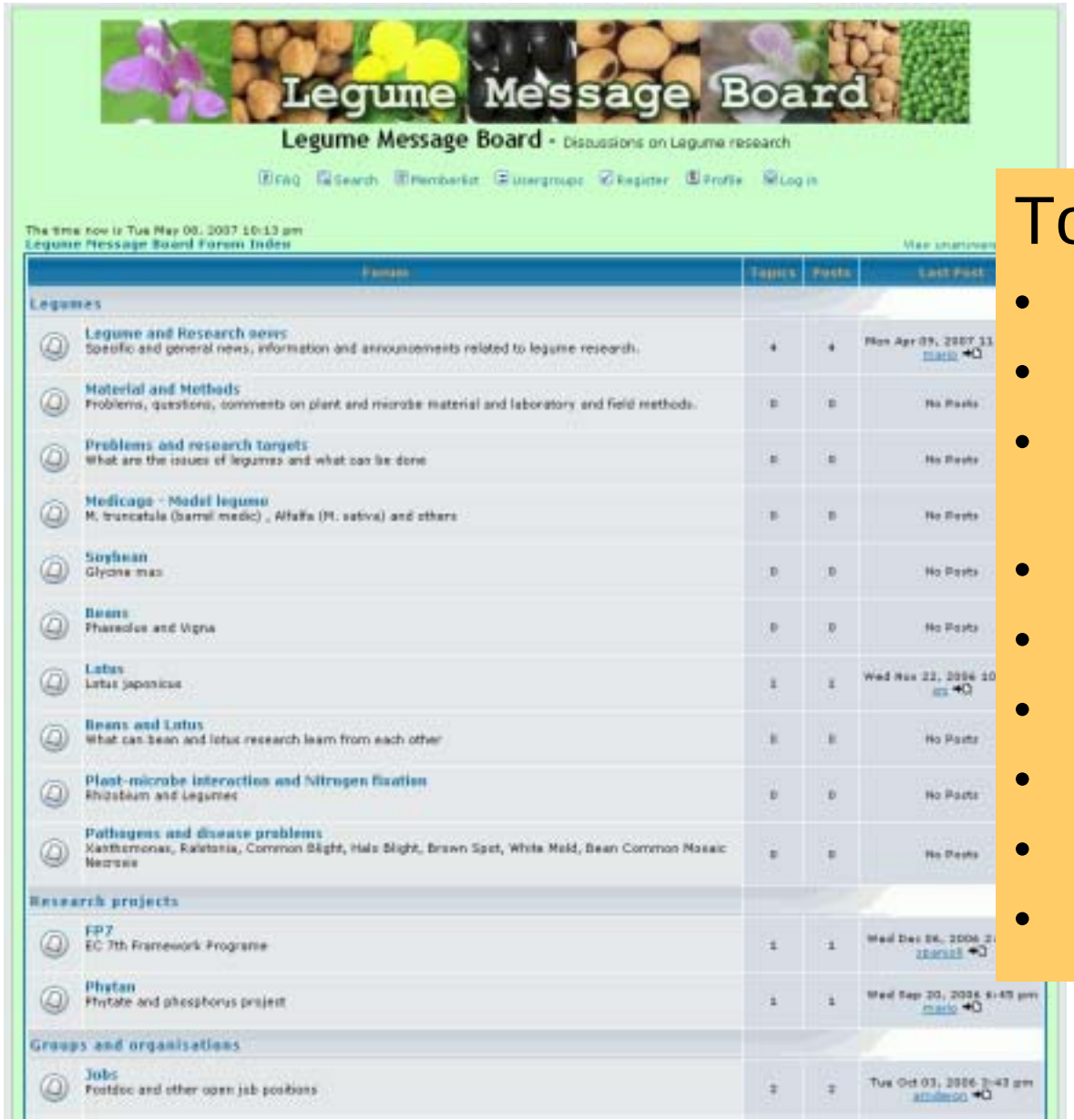
Contains:

- Seed images from available Phaseolus sp.
- seed images (macro) lateral and hilum region
- Phaseolus species list
- search for scientific name, common name and accession number
- links to genebanks
- links to GRIN DB
- SDS-PAGE profiles

Bean seed images – example



Legume Message Board



Topic:

- general discussion
- material & methods
- Phaseolus, medicago, soybean, lotus
- Plant-microbe interaction
- Pathogens
- research projects
- job announcements
- work group presentations
- started 2006

Legume sites

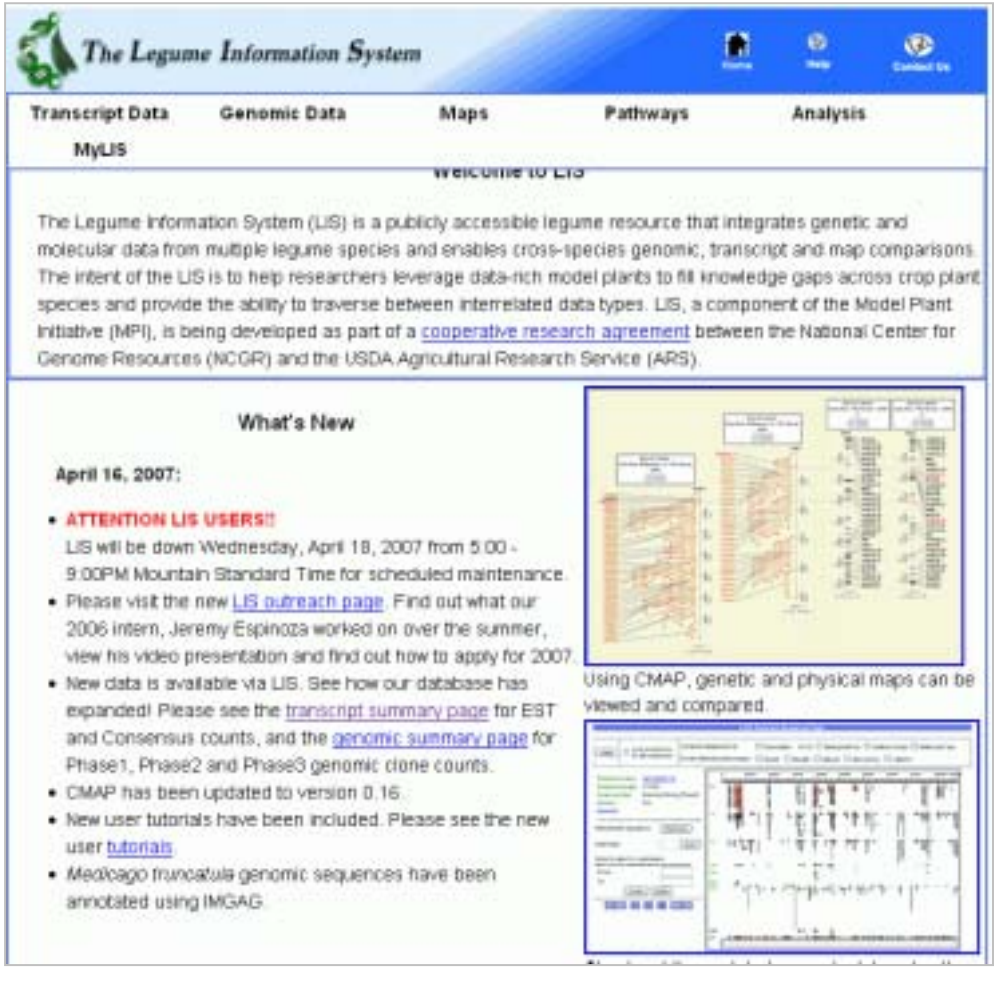
- ILDIS
- Legume Informations system (LIS)
- Medicago sequencing project

International Legume Database & Information Service (ILDIS)

Contains:

- To document and catalogue the world's legume species diversity
- Legume web
- taxonomy
- accepted/common names
- synonyms
- descriptors
- Use and notes
- geographics records
- sources
- literature references

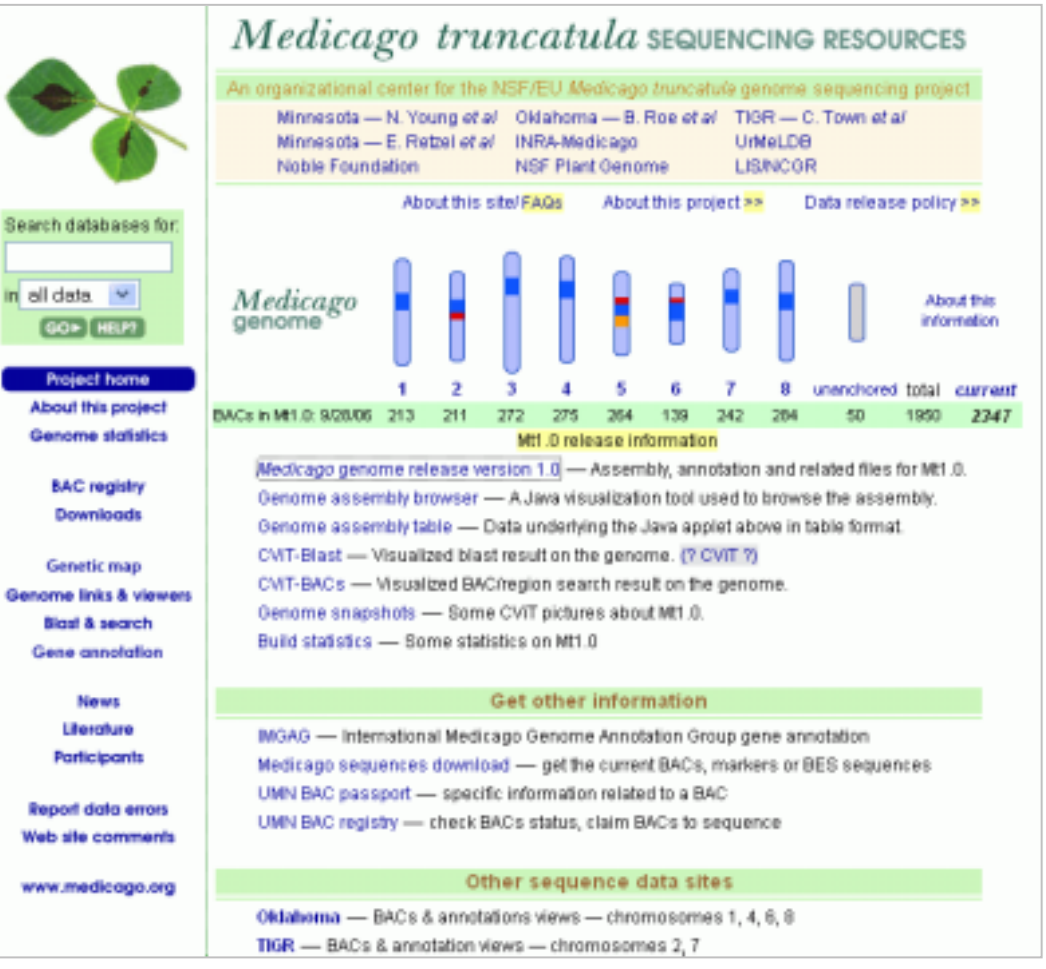
Legume Information System (LIS)



Contains:

- Integrate genetic and molecular data of legumes to enables cross-species comparison
- Transcript data
- Genomic data
- Maps
- Pathways
- Analysis
- Forum
- Link to the Legume information Network (LIN)

Medicago sequencing project



Contains:

- About sequencing the Medicago truncatula genome
- Genome views
- Blast searches
- Links: Medicago, Legumes
- Phonebook

Conclusions

- more *presentations,* since only few groups and individuals are visible online
- more *collaborations*
- a *common virtual meeting point* to present results, discuss together, find funding partners

Thanks

- **Phaseolus Seed Protein Group (PSPG)**
  - Dr. Roberto Bollini
  - Dr. Francesca Sparvoli
  - Dr. Incoronata Galasso

- Links at: www.nenno.it/Beanref/
- My blog: www.nenno.it/brameoblog/