



# National Herbarium of Cultivated Plants: A Resource for Study of Crop Genepools



**Division of Plant Exploration and Germplasm Collection**

ICAR-National Bureau of Plant Genetic Resources  
Pusa Campus, New Delhi 110 012, India



## National Herbarium of Cultivated Plants (code 'NHCP')

- ◆ Located: at ICAR-National Bureau of Plant Genetic Resources, New Delhi; occupies a place among 25 major Indian herbaria
- ◆ Taxa represented: mainly of cultivated and wild/ weedy relatives, potentially important taxa, native or introduced species for use in breeding
- ◆ Additional material: seed economic product and carpological samples as complementary collections

### Holdings

- ◆ Herbarium specimens: 23,665
- ◆ Seed samples: 3094; Economic products: 720 (representing 267 families, 1,521 genera and 4,271 species)

### NHCP

- ◆ Established in 1985 and located in a wing of the ICAR-NBPGR, Old Campus, New Delhi
- ◆ Specimens housed in specially constructed herbarium cabinets (space savers) with storage capacity upto 50,000 specimens



*Allium hookeri*



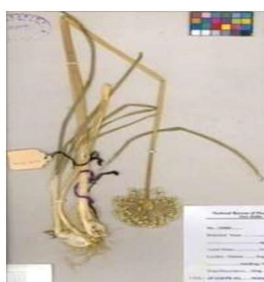
*Allium humile*



*Allium stracheyi*



*Allium tuberosum*



*Allium cepa* var.  
*aggregatum*



*Ocimum*  
*americanum*



*Amaranthus tristis*  
(=A. tricolor)



*Abelmoschus*  
*enbeepeegearense*



*Populus pamirica*



*Arachis pintoi*



*Lactuca tatarica*



*Centrosema molle*





## NATIONAL HERBARIUM OF CULTIVATED PLANTS

### Significant Features

- ♦ **Uniqueness:** differs in mandate from other herbaria across the country:
  - emphasis on representation of variability in crops (as cultivars, primitive landraces, wild forms, etc.)
  - wild relatives of crop plants (CWR) from different agro-ecological habitats
- ♦ **Rare cultivars:** as herbarium/seed variability/diversity
- ♦ **Services provided:** reference collections for identification, taxonomic study, resource for teaching on plant taxonomy, ethnobotany/economic botany
- ♦ **Information resource:** scientific/technical input on identification, validation and diversity distribution in India
- ♦ **Teaching:** with Post Graduate School, Indian Agricultural Research Institute, New Delhi
- ♦ **Trainings:** taxonomic know-how on taxa of plant genetic resources relevance



### Significant Holdings

- ♦ ~ 350 crop plants of India under genera: *Triticum*, *Oryza*, *Abelmoschus*, *Sorghum*, *Avena*, *Coix*, *Echinochloa*, *Colocasia*, *Corchorus*, *Cucumis*, *Brassica*, *Momordica* and *Vigna*



## NATIONAL HERBARIUM OF CULTIVATED PLANTS

- ◆ 550 crop wild relatives (species number in parenthesis) under genera: *Oryza* (21), *Sorghum* (6), *Vigna* (25), *Cajanus/Atylosia* (10), *Allium* (29), *Abelmoschus* (15), *Solanum* (30), *Cucumis* (11), *Trichosanthes* (9), *Piper* (21), *Curcuma* (24), *Rosa* (19) and *Prunus* (16)

### Active Linkages

- ◆ Forest Research Institute, Dehra Dun, Uttarakhand
- ◆ Botanical Survey of India (all regional circles)
- ◆ CSIR-NISCOM (Wealth of India) Herbarium, New Delhi
- ◆ University of Delhi, Delhi

### New Records

- ◆ New taxon: *Abelmoschus tuberculatus*, *Herpetospermum operculatum*
- ◆ New taxa added: species under *Vigna*, *Abelmoschus*, *Cucumis*
- ◆ New recorded uses/ information: *Solena amplexicaulis*, *Abelmoschus manihot* var. *tetraphyllus*



*Abelmoschus angulosus*

*Crotalaria assamica*

*Cucumis dipsaceus*

*Piper attenuatum*

### Virtual Herbarium

- ◆ Over 3,500 species of crop genepools (~7,000 images) are maintained as Virtual Herbarium
- ◆ Herbarium digital resource along with data configured in web-based software in collaboration with AKMU (for exotic taxa; crop wild relatives)
- ◆ Web Linkage: <http://www.nbpgr.ernet.in:8080/nhcp/>

Images linked to database for quick access on a family-wise and genus-wise basis and unique identity numbers assigned to herbarium specimens (HS numbers)

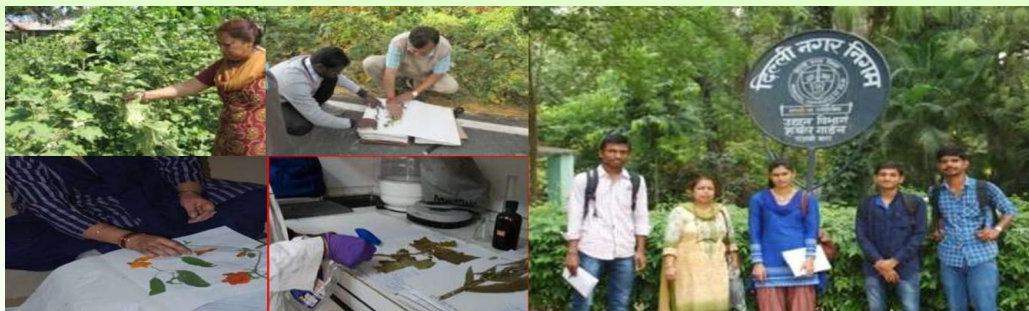




## NATIONAL HERBARIUM OF CULTIVATED PLANTS

### Basic Studies

- ◆ Taxonomy of crop plants of Indian region
- ◆ Representation of difficult to 'process' groups
- ◆ Representation of crop cultivars, diversity/variability in PGR
- ◆ Herbarium preservation using eco-friendly methods



### Facilities

- ◆ **Herbarium laboratory:** processing, drying, poisoning
- ◆ **Net-house:** grow-out of material for authentication/ validation, additions through seed material/vegetative propagules
- ◆ **GIS lab:** geo-referencing of collected specimens
- ◆ **Herbarium library:** selected books/ literature
- ◆ **Outdoor study:** field study in herbal garden, Biodiversity Parks, etc.

- ◆ **Strengthening:** The NHCP accepts unique and unrepresented genetic resources (as herbarium specimens, seed and economic products) for build-up.
- ◆ **Encourages:** depositing vouchers for future reference and resource for studies on PGR.
- ◆ **Guidelines:** available for use and consultation of NHCP (<http://www.nbpgr.ernet.in>).

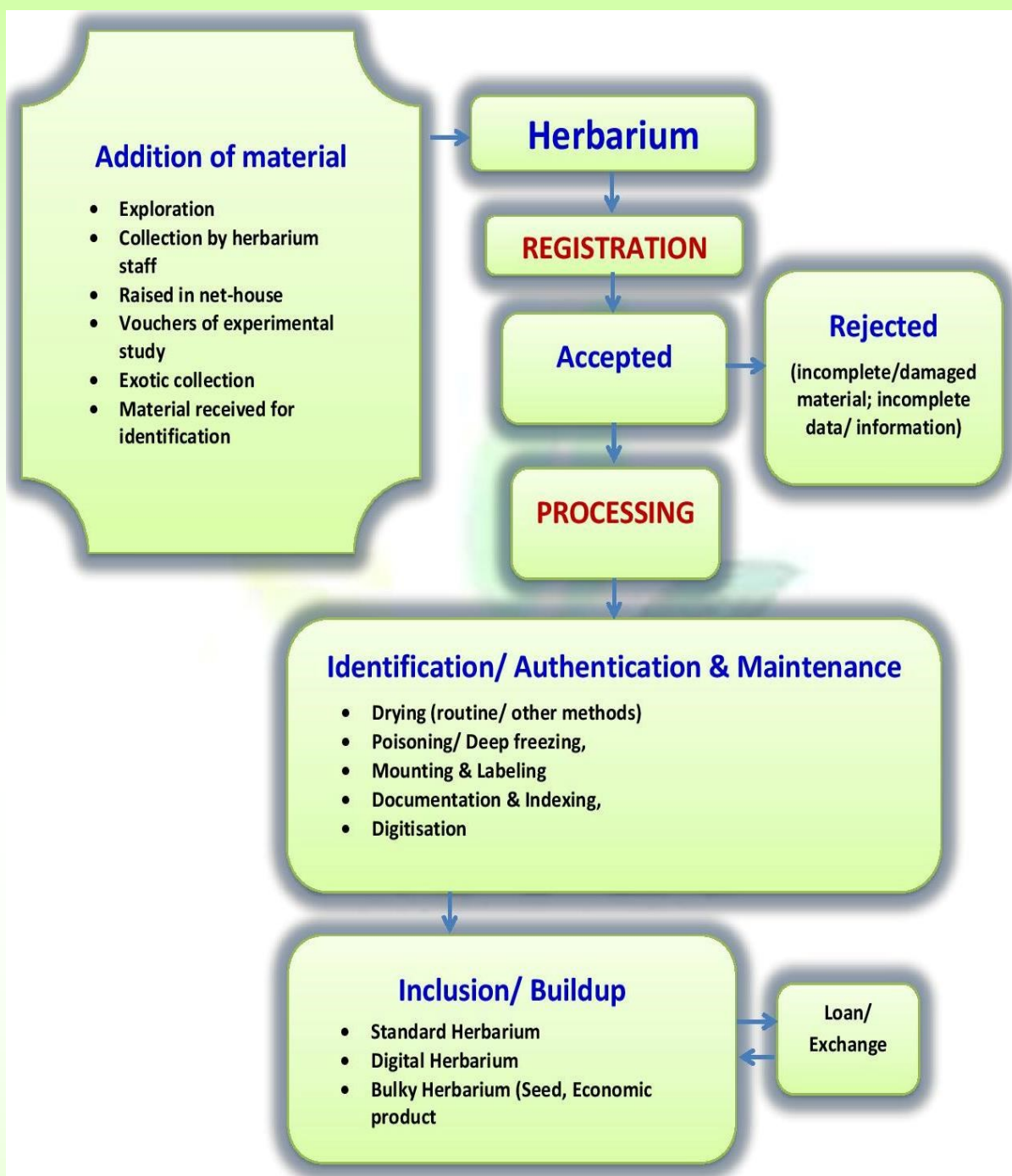
### Regional Stations contributing :

- ◆ NBPGR Regional Station, Akola, Maharashtra
- ◆ NBPGR Regional Station, Bhowali, Uttarakhand
- ◆ NBPGR Base Centre, Cuttack, Odisha
- ◆ NBPGR Regional Station, Hyderabad, Andhra Pradesh
- ◆ NBPGR Regional Station, Jodhpur, Rajasthan
- ◆ NBPGR Base Centre, Ranchi, Jharkhand
- ◆ NBPGR Regional Station Umiam, Shillong, Meghalaya
- ◆ NBPGR Regional Station, Shimla, Himachal Pradesh
- ◆ NBPGR Regional Station, Srinagar, Jammu and Kashmir
- ◆ NBPGR Regional Station, Thrissur, Kerala





## NATIONAL HERBARIUM OF CULTIVATED PLANTS



**Compiled by** Anjula Pandey & SP Ahlawat

For further details, contact: Dr. Anjula Pandey (anjula.pandey@icar.gov.in); Call at: 011-25848405, National Herbarium of Cultivated Plants (NHCP), Division of Plant Exploration and Collection, ICAR-NBPGR, New Delhi 110 012, India

**Technical input** : Ms. Rita Gupta

**Layout & design** : Mr. Shashi Kant Sharma