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
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*
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

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.nbegr.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)
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](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
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