



NBPGR



Newsletter

National Bureau of Plant Genetic Resources
(Indian Council of Agricultural Research)

ISSN 0971-2232

www.nbpgr.ernet.in

Vol. 30 No. 4



QUARTERLY

October-December 2014

Workshop on Redefining Priorities in the National Action Plan for Genetic Resources

A workshop on 'Redefining Priorities in the National Action Plan (NAP) for Genetic Resources Management in India' was jointly organized by ICAR-NBPGR, New Delhi and National Academy of Agricultural Sciences (NAAS), New Delhi from December 23-24, 2014 at NAAS, New Delhi. A 'NAP on Agrobiodiversity in India' was first developed in 1999 by the NAAS, ICAR and the Indian Society of Plant Genetic Resources (ISPGR), following a series of dialogues, symposia, workshops and meetings. The present workshop was organized to address the priority areas of the 'Second Global Plan of Action (GPA) for Genetic Resources for Food and Agriculture' of the Food and Agriculture Organization's Commission on Genetic Resources for Food and Agriculture (FAO-CGRFA). The NAP(1999) would serve as a baseline for the development of revised NAP on Genetic Resources and help to redefine priorities for national action for their effective management. The revised NAP would also serve as a vision document for all the Bureaus on genetic resources to fulfill their respective mandates based on



Dr S. Ayyappan, Chairing the Inaugural Session, along with Co-Chair, Mr R. Rajagopal; Dr R.B. Singh gracing the session



Dr P.L. Gautam, Chairing the Technical Session I on PGRFA along with Dr S.S. Hanchinal as Co-Chair

identified priorities. Further, it would also contribute towards preparation of the 'First Report on The State of the World's Biodiversity for Food and Agriculture'. The meeting was chaired by Dr S. Ayyappan, Secretary, DARE & DG, ICAR and President NAAS, and Co-Chaired by Mr R. Rajagopal, Additional Secretary, DARE & Secretary, ICAR with Guest of Honour Dr P.L. Gautam, Former Chairman, PPVFRA, Delhi & Chairman, NBA, Chennai. Officials from ICAR, DARE, DAC, PPVFRA, NAAS also attended the workshop. The workshop was organized into technical sessions on *in situ* conservation and management, *ex situ* conservation, sustainable use, building sustainable institutional and human capacities and revisiting NAP for other genetic resources for food and agriculture and presentations on the proposed action plan were made by the lead discussants.

sustainable institutional and human capacities and revisiting NAP for other genetic resources for food and agriculture and presentations on the proposed action plan were made by the lead discussants.

Exploration and Germplasm Collecting

Collecting of wild *Triticeae*, *Cicer* and forage germplasm from Leh, Jammu & Kashmir



Variability in *Elymus nutans* germplasm collected from Leh district of Jammu & Kashmir

Exploration for wild relatives of wheat and barley, *Cicer* and forage germplasm from Leh district (Ladakh region) of Jammu & Kashmir was undertaken for the first time, in September 2014. PAU, Ludhiana collaborated for the collection of wild *Triticeae*. Northern (Nubra Valley), eastern (Changthang Valley) and central (along river Indus) areas of the district between 3300-5100 m were explored. Collections included 87 accessions belonging to *Elymus dahuricus* (20), *E. longearistatus* subsp. *canaliculatus* (4), *E. nutans* (25), *Hordeum brevisubulatum* (1), *Leymus secalinus* (13), *Cicer microphyllum* (5), *Medicago sativa* subsp. *sativa* (3), *M. sativa* subsp. *falcata* (5), *Melilotus officinalis* (6), and others (5). *E. nutans* was noted to be common in almost all altitudinal ranges, especially along field boundaries, roadsides and hill slopes, while *E. dahuricus* occurred mostly along field boundaries. Variability in number of spikelets/n



Elymus longearistatus subsp. *canaliculatus* (PMK-1731) collected from Serthi-Zingral in Leh district

ode and characters of spike (length, colour, thickness) and awn (length and colour) was observed in these species. *E. longearistatus* subsp.

canaliculatus, in contrast, was confined to altitudes above 4300 m, occasionally along roadsides and hill slopes. *Leymus secalinus* was a common species throughout the areas explored below 5000 m, such as salt marshes (on the banks of Pangong Lake), sand heaps, field margins, roadsides, etc. *Cicer microphyllum* was a niche-specific species (4200-4800 m) with little morphological variation, found in pasture lands. Cultivated *Medicago sativa* subsp. *sativa* was often found with sympatric populations of the semi-wild taxa – *M. sativa* subsp. *falcata* and *Melilotus officinalis*. The collected germplasm of all species was sent for conservation in the National Genebank, and a set of wild *Triticeae* and forage germplasm was sent for characterization/evaluation at PAU, Ludhiana and IGFR, Regional Research Station, Srinagar.

Collecting wild rice species from Maharashtra

An exploration for collecting wild rice species from Pune, Satara, Ratnagiri and Raigarh districts of Maharashtra was undertaken during November 2014. A total of 46 accessions comprising wild species *Oryza sativa* var. *spontanea* (7), *O. nivara* (4), *O. rufipogon* (1), *Cucumis hardwickii* (5), *Sesamum malabaricum* (6), *Abelmoschus tetraphyllus* (3), *Corchorus* spp. (2), *Echinochloa crusgalli* (2), *Cajanus scarabaeoides* (2), *Vigna radiata* var. *sublobata* (1), *Sesamum indicum* (1) and other cultivated species germplasm *Panicum miliaceum* (4), *Oryza sativa* (3), *Eleusine coracana* (2), *Ricinus communis* (1), *Vigna mungo* (1) and *Abrus precatorius* (1) were collected. Among the targeted wild rice species germplasm, variability was recorded in plant habit (erect-spreading), pigmentation in stem and internode (green, light purple), panicle characteristics (compact, intermediate, open/



Farmers of Kumbharseth, Raigarh district, Maharashtra assisting in collecting wild rice germplasm

lax) and spikelet characteristics (husk colour, kernel colour, apiculus and glume).

Exploration for collecting wild species in tribal Western Ghats



Abelmoschus angulosus var. *grandiflorus* (left) and an infra specific taxon of *Momordica sahyadrica* (right) collected from Western Ghats

During an exploration mission to Wayanad Wildlife Sanctuary and adjoining areas of Western Ghats in Kerala by NBPGR, Regional Station (RS), Thrissur, a total of 68 collections comprising 14 crop landraces and 54 wild samples were collected. The wild germplasm included species diversity in *Abelmoschus*, *Alpinia*, *Cucumis*, *Momordica*, *Solanum*, *Trichosanthes* and *Vigna*. Tribal communities such as 'Kurichya', 'Paniyar' and 'Kattunaykkan' were also visited in their hamlets. Western Ghats sections of Nelliampathy, Sholayar, Periya Ghat, Nadugani Ghat, Thamarassery Ghat and Palchuram were explored for wild species collection. First time collection of *Trichosanthes tubiflora*, two distinct fruit forms in *T. nervifolia*, a rare *Momordica dioica* form and another unique variant of *M. sahyadrica* were the notable collections made.

Exploration and Germplasm Collecting from Chhatisgarh and Bihar

An exploration mission was undertaken for collection of wild *Oryza* species from Bilaspur, Jashpur, Raigarh and Raipur districts of Chhatisgarh by NBPGR, RS, Cuttack, in collaboration with ICAR-Central Rice Research Institute, Cuttack, during November, 2014. A total of 43 accessions comprising *Oryza rufipogon* (6), *O. nivara* (36) and *O. sativa* var *spontanea* (1) were collected from 39 sites. Variability in habitat, maturity, spikelet, panicle type and awn characteristics was recorded during the exploration.

Another exploration was undertaken for collecting wild *Oryza* species from four districts of Bihar (Sitamarhi, Shohar, Purvi Champaran and

Paschim Champaran) during second half of November, 2014 in collaboration with ICAR Research Complex for Eastern Region, Patna. A total of 24 accessions comprising *O. nivara* (23) and *Oryza rufipogon* (1) were collected from 17 sites. The samples of soil and water from 12 and eight sites, respectively, were collected during the exploration.

Exploration and collecting of buckwheat from Arunachal Pradesh



Buckwheat variability in West Kameng district

An exploration trip was undertaken by NBPGR, RS, Shillong, to Arunachal Pradesh from November 3-16, 2014, for collecting buckwheat (*Fagopyrum esculentum*) germplasm in collaboration with KVKs from East Kameng, West Kameng and Tawang districts. A total of 42 accessions were collected, although overall, crop variability and production were less. It was observed that the farmers are not applying any insecticide or pesticide for this crop. Farmers of East Kameng district were not cultivating this crop mainly because of changed food habits. The crop was not observed in the fields of Tawang district, but in many areas of West Kameng it was still in the farmers fields.

Germplasm Exchange

Import

A total of 21,356 accessions (8,772 germplasm and 12,584 trial material) of different crops were introduced from 28 countries.

Promising introductions

Maize (EC829628-57), **South Africa:** Transgenic lines containing event MON 89034.

Onion (EC828633-40), **AVRDC, Taiwan:** High yielding and good storability.

Rice (EC830646-896), **Indonesia:** Different levels of resistance to Bacterial Leaf Blight, Blast.

Rice (EC836768-83), **Belgium**: Transgenic lines containing *axmi 011* and *bar* genes.

Strawberry (EC829535), **USA**: Improved germplasm of strawberry.

Sunflower (EC816178), **USA**: Male fertility restorer germplasm, resistant to sunflower rust.

Wheat (EC831784), **Mexico**: Core set.

Export

Japan - Horsegram (3 samples) HPK-4, HPKM-192, F2 mapping population.

Austria - *Citrus sinensis* cvs Mosambi and Jaffa; *Citrus paradisi* cv Red Blush.

Plant Quarantine

A total of 67,603 samples of imported material were processed for quarantine clearance. A total of 1,238 samples were X-rayed. A total of 292 samples were found infested/ infected/ contaminated, of which 15 samples were rejected and incinerated. Prophylactic treatments

Interceptions made in imported samples

Pest	Crop	Source/ Country
Fungi		
<i>Tilletia barclayana</i>	<i>Oryza sativa</i>	China, Nepal
Nematode		
<i>Aphelenchoides besseyi</i>	<i>Oryza sativa</i>	Philippines
Insects		
<i>Bruchus lentis</i>	<i>Lens culinaris</i>	Lebanon
<i>B. tristis</i>	<i>L. culinaris</i>	Lebanon

included pesticidal dip/ spray treatment (85), hot water treatment to paddy (463) and tri-sodium phosphate (299).

Number of indigenously collected/ multiplied accessions processed for seed health testing for conservation in National Genebank (NGB) were 4,129 of which 589 samples were X-rayed, and 223 were found infected/ infested/ contaminated. A total of 39 samples were rejected and released for MTS while 4,090 samples were sent to LTS.

Germplasm Characterization and Evaluation

Germplasm evaluation at Shimla

A total of 2,195 accessions of various agricultural crops comprising grain crops (2,037)

and temperate fruit crops (158) were characterized and evaluated at NBPGR, RS, Shimla. In amaranth IC329550, IC313365, IC313250, IC278922 were found superior for inflorescence length, seed yield/ plant and 100-seed weight. Accessions IC52132, IC264881, IC294344, of buckwheat were found superior for no. of inflorescence/plant and plant height. Accessions IC394201, IC524085, IC075061, IC538983 in rice bean were found superior for multiple traits. In kidney bean EC755327, EC755330, EC755392 were found superior for pod length, no. of pods/ plant and days to 80% maturity.

Among fruits, walnut accessions IC20065, IC538533, EC02782 for nut weight, IC 014618, IC20112 and EC38833 for shell softness were found promising. In pear, EC126286, EC027810 were found superior in pulp juiciness and TSS and in apple Super Chief IC349910 and EC044521 were found superior for TSS, pulp taste juiciness and fruit colour.



Accession IC20112 of walnut found superior for shell softness and kernel colour

Characterization of Linseed

A total of 51 linseed accessions were characterized for 11 traits using three check varieties (Kiran, Garima and H-Local) at NBPGR, RS, Srinagar. These comprised local collections as well as those received from NBPGR, RS, Akola. Based on seed yield/plant (g) some of the superior accessions identified were IC597270 (3.05g); IC597275 (3.02g); IC597278 (2.95g); IC597268(2.94g) and IC597269 (2.89g) compared to best performing check Garima (1.18g).

Chemical evaluation of *Mucuna*

The L-Dopamine (%) of seeds of 25 accessions of *Mucuna* spp. were evaluated at NBPGR, RS, Cuttack. Five accessions (IC599330, 599336, 599342, 599290 and 599350) with high L-dopa (more than 7%) were identified.

Wild edible *Cucumis* of North-eastern India – Taxonomic circumscription and use as potential vegetable crop

Cucumis hystrix Chakrav. is a wild relative of cucumber occurring in North-eastern India. In taxonomic literature, *C. muriculatus* Chakrav. is treated as synonym of *C. hystrix*. Detailed morphological analysis and crossability studies carried out at NBPGR, RS, Thrissur, revealed that these are two distinct species, and *C. muriculatus* Chakrav. deserves resurrection as a valid species. Its collection from states of Mizoram and Arunachal Pradesh are new distribution records for India. Both occur wild, gathered as vegetables, and found to have potential as a cultivated vegetable in humid tropics. Tender fruits of *C. muriculatus* are similar to gerkhin (*C. sativus*) in taste and are non-bitter. An average vine yielded 130 fruits spanning over a harvest period of 70 days. Having wide adaptability and amenable to cultivation through seeds, it needs to be popularised as a vegetable crop across humid tropical and sub-tropical regions. Six collections of *C. muriculatus* and one of *C. hystrix* have been conserved at NBPGR, RS, Thrissur.



Fruits of *Cucumis hystrix* (left) and
C. muriculatus (right)

Black Gram Germplasm Registered

Germplasm IC144901 of black gram with resistance to mungbean yellow mosaic virus, developed by N.K. Gautam, Manas Kumar Bag, T.V. Prasad, Sushil Pandey, Anirban Roy, Neeta Singh, Babu Ram and M. Dutta has been registered (INGR 14056) by the Plant Germplasm Registration Committee (PGRC) of ICAR.

Genomic Resources and Bioinformatics

Germplasm diversity and fingerprinting analyses

Germplasm of pearl millet and kodo millet available at NGB, were fingerprinted by polymorphic SSR and SCoT markers, respectively. Similarly, 165 wheat varieties

selected for drought tolerance studies were genotyped using SSR markers. In safflower, 20 registered germplasm were analyzed with 10 genomic SSR markers. DNA fingerprinting of 72 chickpea cultivars was completed with 30 SSR markers located across all eight chromosomes. A mini-core was developed from NE India rice collection using molecular markers. Genotyping has also been completed with 10 SSR markers on 300 rice mini-core. Genotyping with 25 SSRs for mothbean, 45 SSRs for *Cucumis* and 45 SSR and SRAP markers in *Lathyrus* were completed to facilitate association analysis. In teasel gourd, diversity analysis of 83 accessions was carried out at 51 of the 71 STMS loci that were transferable from bitter gourd.

Genomic resources generation

Transcriptomic data were generated for mothbean (10,063), *Cucumis* (26,307) and *Lathyrus* (40,475) to prospect for new genes and alleles for abiotic stress tolerance. Additionally, RAD sequencing generated 15,256, 35,498 and 45,376 SNPs in above mentioned three crops, respectively, and these were used for SNP haplotyping of the core collections of mothbean (250), *Cucumis* (230) and *Lathyrus* (250). Whole genome sequence of sesame with 85x coverage of genome was completed.

Gene cloning and allele mining

The full-length coding sequence (CDS) of *FAE1* (Fatty acid elongase 1) gene was cloned from 20 centrally released varieties of Indian mustard (*Brassica juncea*). The molecular characterization of *FAE1* gene of each variety revealed presence of two homolog belonging to expected A and B genome of Indian mustard respectively. Members of ADC (ADC1 and 2) and AdoMetDC (AdoMetDC 1, 2 and 3) gene family cloned in a TA vector were sequenced for further analysis to identify the nucleotide variation between tolerant and susceptible cultivar of rice. Allelic diversity for HKT2:1 gene of wheat implicated in conferring salt tolerance has been analyzed. The functional domain of this gene has been analyzed for presence of SNPs among 20 wheat genotypes comprising both tolerant and susceptible lines. Promising nucleotide variations observed in the HKT2:1 coding region among the salt tolerant and susceptible genotypes that can be exploited for discriminating lines differing in tolerance.

TRAINING COURSE, FIELD DAY AND WORKSHOP

Training Course on 'Role of Germplasm Diversity in Nutritional Security'



Participants of the training course with Dr K.C. Bansal, Director, NBPGR

A model training course on 'Role of Germplasm Diversity in Nutritional Security' was held at NBPGR, New Delhi from November 20-27, 2014. The course sponsored by Directorate of Extension (DoE), Department of Agriculture and Cooperation (DAC), Ministry of Agriculture was organized at NBPGR. Twenty four participants from eight states namely, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Uttar Pradesh, West Bengal, Arunachal Pradesh, Manipur and Kerala participated in the training.

Dr Bhag Mal, Former Coordinator, Bioersity International and Senior Consultant, APAARI inaugurated the function on November 20. The training comprised 29 lectures and six practicals/visits related to germplasm diversity and nutritional security. Training was imparted by experienced resource persons from different organizations like APAARI, PPV&FRA, NIN (ICMR), ICAR, CAZRI, IARI, NBPGR etc. Two special lectures, one on GM Technology by Dr K.C. Bansal, Director, NBPGR, and another on Plant Variety Protection and Farmers Right Act by



Dr S.K. Datta, DDG (CS), awarding certificates to the trainees

Dr R.C. Agrawal, Registrar General, PPV&FRA were also delivered. The training was concluded on 27th November, 2014 and Dr S.K. Datta, DDG (CS), ICAR was Chief Guest of the function. He expressed his concern about the malnutrition among children and majority of Indian population suffering from hidden hunger. He emphasized the importance of germplasm diversity to meet this challenge and urged that NBPGR should take lead in bringing awareness among the higher officials of State Government Extension agencies. Dr S.K. Mishra, Joint Director (Extension), DoE expressed his happiness over the organization of the training.

Germplasm Field Day



Breeders selecting the sunflower germplasm in field at UAS, GKVK, Bengaluru

Sunflower germplasm field day was organized by NBPGR, New Delhi in collaboration with Directorate of Oilseed Research (DOR), Hyderabad and AICRP on Sunflower, University of Agricultural Sciences (UAS), GKVK, Bengaluru at GKVK, Bengaluru during October 17-18, 2014. Dr D.P. Kumar, Vice-Chancellor, UAS, GKVK, Bengaluru inaugurated the Field Day which was attended by Dr K.S. Varaprasad, Project Director, DOR, Hyderabad, Director (Research), UAS, Dr R.K. Tyagi, Head, Division of Germplasm Conservation, NBPGR, New Delhi and several distinguished dignitaries and sunflower breeders from different states. A total of 1,101 accessions (953 exotic and 148 indigenous accessions) from National Genebank of NBPGR, 369 accessions from DOR and more than 1,000 accessions from UAS including inbred lines, confectionary types, high oleic R X R genepool, CMS A&B lines, newly developed CMS lines and high oleic hybrids were grown in the field for characterization and evaluation. The breeders selected the germplasm for the specific traits for use in their breeding programmes.



Dr D.P. Kumar, Vice Chancellor, UAS, discussing with sunflower breeders

Workshop on Capacity Building for the Implementation of ITPGRFA in India

ICAR-NBPGR together with The Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA) jointly organized a Workshop on Capacity building of the implementation of ITPGRFA in India from 17-18 November, 2014 at Deendayal Research Institute, Chitrakoot.

The objective of this Workshop was to enhance awareness among stakeholders as well as improving the implementation of the ITPGRFA in

India. This included discussion on the incentives/disincentives material under the Multilateral System (MLS) of the Treaty and ways to overcome these disincentives. Stakeholders represented in the workshop were ICAR institutes, representatives from Ministry of Environment and Forests, State Governments, reputed NGOs involved in agricultural development activities and other relevant institutions. Besides, two NGOs Peermade Development Society, Idukki, Kerala and Humana People to People India, New Delhi, which were the beneficiaries of first and second cycle of projects under Benefit Sharing of the ITPGRFA were also invited to make presentations on the project outcomes and on the issues related to conservation of plant genetic resources in their areas. Invited lectures on multilateral system of the treaty, germplasm exchange through bilateral, multilateral channel and also through CGIAR Centres were made. Some selected Krishi Vigyan Kendra (KVK), under ICAR, leading the 'Lab to Land Programme' of ICAR system displayed the regional wealth of farmer's varieties and promising crop germplasm at the exhibition organized as a side event to this workshop.

PERSONNEL NEWS

Awards and Honors

Dr Amit Kumar Singh, Scientist, Division of Genomic Resources, NBPGR, New Delhi, has secured a prestigious internationally competitive fellowship, **Endeavor Research Fellowship - 2015** awarded by Govt. of Australia to pursue Post-doctoral research in the area of advance genomics. Additionally, he has also been awarded a competitive grant from Science and Engineering Research Board, DST, Govt. of India, for conducting research on 'Identification and analysis of SNP haplotypes in HKT family transporter genes of wheat for their association to salt tolerance'.

Drs M. Latha, V.A.M. Nissar, Y.C. Roy, K.V. Bhat and S. Mani received **Best Poster Award** for poster entitled 'Genetic Resources of wild *Vigna* species – A treasure house for broadening the genetic base in cultivated *Vignas*' during the National Symposium on 'Crop Improvement for Inclusive Sustainable Development' under the theme on Conservation and Utilization of the

PGR, at PAU, Ludhiana, Punjab, November 7-9, 2014.

Drs A. Kandan, J. Akhtar, B. Singh, D. Pal, D. Chand and P.C. Agarwal received **Best Poster Presentation Award** for the poster entitled 'Rapid and sensitive detection of seed-borne pathogen *Collectotrichum capsici* in *Capsicum annum* using loop-mediated isothermal amplification assay' presented in the 6th Indian Horticultural Congress-2014, organized by Indian Society of Horticulture, at Coimbatore during November 6-9, 2014.

Dr T.V. Prasad, Senior Scientist (Entomology), Division of Germplasm Evaluation, NBPGR, New Delhi, was elected as the **Life Fellow** of the Entomological Society of India, New Delhi.

Deputations Abroad

Dr Rekha Chaudhury, Principal Scientist, Tissue Culture and Cryopreservation Unit, NBPGR, New Delhi, attended the Annual Scientific Conference, 50th Anniversary Celebration & Annual General

Meeting of the Society for Low Temperature Biology (SLTB) at The Royal Botanic Gardens, Kew, Jodrell Laboratory from October 8-10, 2014. She delivered an invited lecture on 'Crop Cryogenbanking at NBPGR-India'.

Dr Sundeep Kumar, Senior Scientist, Division of Genomic Resources, NBPGR, New Delhi, attended 'Heat and Drought Wheat Improvement Consortium Conference' held at Germany from December 2-4, 2014. During the meeting, he presented a proposal on 'Association mapping for identification of genes/QTLs for heat tolerance in wheat'. He also attended the first interactive meeting of the 'Global Expert Working Group on Wheat Phenotyping' on December 5, in Frankfurt, Germany.

Retirements

Mrs M.K. Gaulathu, SSS, NBPGR, RS, Thrissur superannuated on October 31, 2014.

Mrs R.S. Latha Devdas, P.S., Division of Germplasm Conservation, NBPGR, New Delhi superannuated on November 30, 2014.

Mr Ram Karan, SSS, NBPGR, Issapur Farm superannuated on December 31, 2014

Appointments

Dr S.C. Dubey, Principal Scientist (Plant Pathology) appointed as Head, Division of Plant Quarantine, NBPGR, New Delhi, w.e.f. November 10, 2014.



Dr Sunil Archak, Senior Scientist (Plant Biotechnology) appointed as ICAR National Fellow, w.e.f. November 27, 2014.

Transfers

Dr Rakesh Srivastava, Senior Scientist, Division of Germplasm Evaluation, NBPGR, New Delhi, transferred to NBPGR, RS, Srinagar w.e.f. October 8, 2014.

Mr N.K. Gautam, Scientist Division of Germplasm Evaluation, NBPGR, New Delhi, transferred to NBPGR, RS, Ranchi w.e.f. October 8, 2014.

Dr Mohar Singh, Senior Scientist, Division of Germplasm Evaluation, NBPGR, New Delhi, transferred to NBPGR, RS, Shimla w.e.f. October 10, 2014.

Dr Ruchi Bansal, Scientist (Plant Breeding) joined Division of Germplasm Evaluation, NBPGR, New Delhi, on transfer from Directorate on Medicinal and Aromatic Plants, Anand, Gujarat, w.e.f. November 3, 2014.



Dr M. Abdul Nizar, Senior Scientist, NBPGR, RS,

Akola, transferred to NBPGR, RS, Thrissur w.e.f. December 29, 2014.

Promotion

Mr M.S. Rathore, promoted from Senior Technical Officer to Assistant Chief Technical Officer w.e.f. February 24, 2011.

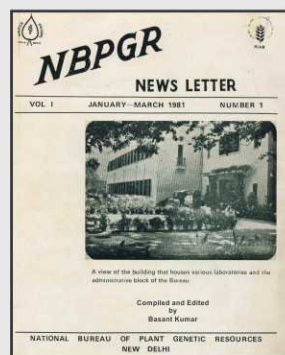
Obituary



Mr Basant Kumar, Retired Scientist, Germplasm Exchange Division, NBPGR, New Delhi, left for his heavenly abode on November 29, 2014, at the age of 85. Born in a farmer family in Aligarh district of Uttar Pradesh, he studied B.Sc. (Agriculture) from B.R. College, Agra, joined service

at Pusa (Bihar) in 1954 and subsequently moved to IARI, New Delhi, where he completed his M.Sc. (Ag.). He worked on wheat breeding. Later he moved to ICAR headquarters where he worked as Editor to the Newsletter 'Kheti'. Subsequently, he moved to NBPGR in 1981 and worked in the Germplasm Exchange Division where he meticulously maintained the records for Indigenous Collections (IC). He also worked on genetic resources of moth bean (*Vigna aconitifolia*). Interestingly, Mr Basant Kumar was the Editor of the inaugural issue of the NBPGR Newsletter, published in 1981.

Even after his superannuation from NBPGR in 1989, Mr Basant pursued his passion for plants by planting and tending to many species in and around his residential vicinity (Naraina Vihar, New Delhi). Mr Basant Kumar is survived by three sons and a daughter. The NBPGR family pays tribute to one of its very dedicated and humble scientist.



Inaugural issue of NBPGR News Letter

Published by

DIRECTOR

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

Compilation and editing

Anuradha Agrawal, Kavita Gupta and Lalit Arya

Computer assistance

Vijay Kumar Mandal