



DGR NEWSLETTER

Vol. XII

No. 3-4

JULY-DECEMBER 2013

National Conference of Plant Physiology – 2013 organized at Junagadh

13-16 December 2013, Junagadh

A four-day (13-16 December, 2013) National Conference on 'Current Trends in Plant Biology Research' was organized at Junagadh jointly by the DGR and JAU in association with The Indian Society for Plant Physiology (ISPP), New Delhi.

During the inaugural session, while welcoming the participants, Dr. J.B. Misra, Director, DGR, outlined the historical importance of Junagadh. In his address as the Chief Guest, Dr. S.K. Datta, DDG (CS), ICAR highlighted the importance and role of Plant Physiology in the current scenario of agricultural and plant biology research. In his invited lecture, Dr. K.C. Bansal, Director, NBPGR, New Delhi outlined the achievements made in the areas of modern plant biology research and the future areas for cutting-edge research. The Chairman of the inaugural session Dr. N.C. Patel, Vice-Chancellor, JAU apprised the participants of the significant achievements of JAU in various fields. Dr. C.J. Dangaria, Director of Research, JAU was also present on this occasion. Dr. Madan Pal Singh, Honorary Secretary, ISPP presented an overview of the Conference and Society.

During this four-day event, three memorial award lectures and 25 invited lead lectures were delivered, and 62 oral presentations were made by the eminent scientists. The conference covered six thematic areas during the technical sessions, viz., i) Climate change, abiotic and biotic stresses, ii) Photosynthesis, growth and productivity, iii) Mineral



Dr. S.K. Datta, DDG (CS), addressing the participants

Contents

National Conference of Plant Physiology – 2013	1
A hitherto unknown disease of groundnut noticed in Jodhpur, Rajasthan	2
'Parthenium awareness week'	2
Farm Innovator's Day	3
Research Advisory Committee meeting	4
हिन्दी चेतना मास-2013	4
DGR's 34 th Foundation Day	5
Personnel / Distinguished visitor	5
Institute seminars / Visits abroad / Trainings	6
Participation in conference / workshop / etc.	7
DGR in News	8



Inaugural session of NCPP-13



Cultural programme on the occasion of NCPP-13

nutrition, microbial interactions and biofortification, iv) Plant growth regulators and agrochemicals use in agriculture and horticulture, v) Flowering, tree physiology and quality control of fruits and vegetables and vi) Seed and post-harvest physiology, functional food and nutraceuticals. About 450 participants comprising academicians, researchers, entrepreneurs and representatives of private sector, press and media participated in the inaugural function. Dr. A.L. Singh, Principal scientist and Organizing Secretary of the Conference presented the vote of thanks.

PBS 12032- A source of resistance of late leaf spot and rust

Early leaf spot (ELS; *Cercospora arachidicola*), late leaf spot (LLS; *Phaeoisariopsis personata*) and rust (*Puccinia arachidis*) are the most widely occurring economically important foliar-fungal diseases of groundnut causing >70% loss of pod yield, besides lowering yield as well as quality of fodder. On the 1-9 modified scale, the maximum disease scores for LLS and rust were 8.5 and 8.3, respectively and one PBS 12032 a Spanish genotype, was found resistant to both LLS and rust with disease scores of <3. This genotype having a potential for use as a source of resistance for LLS and rust in groundnut resistance breeding programme, matures in 118 days and yields 1270 kg ha⁻¹ pod with a shelling outturn of 66%.

(Inputs: Narendra Kumar, M.C. Dagla, Ajay B.C. and K.S. Jadon)

PBS 19022 - a large-seeded high-yielding genotype

There are very few large-seeded groundnut varieties, especially amongst the Spanish types, which can be grown in *rabi*/summer season. On the basis of its performance of two summer seasons (2011 and 2012), the advanced breeding line PBS 19022 having hundred kernel weight (HKW) of 63 g and pod and kernel yields of 3097 and 1750 kg/ha has been identified as a large-seeded high-yielding genotype. The other attributes of this genotype are reasonable harvest index (36%), number of mature pods/plant (16), shelling outturn (60%), high oil content (51%), and good protein (22%) and sugar (6%) contents.

(Inputs: M. C. Dagla, Narendra Kumar and Ajay B.C.)



Seeds and pods of PBS 19022

A hitherto unknown disease of groundnut noticed in Jodhpur, Rajasthan

A disease, reported by a farmer, was observed infecting groundnut crop in the Shergarh Tehsil of Jodhpur, Rajasthan in *Kharif*, 2013. The disease was observed in the crop stands of local spreading variety, Gajraj sown with a spacing of 30 cm between rows on sandy loam soils of an

undulating terrain. The crop was irrigated with sprinklers once in a week for 2-3 hours period. The DGR scientists surveyed the field during the pod formation stage and observed that the plants had died in circular patches growing from the centre. The plants first started to wilt and then died with the leaves intact. The dead plants, uprooted from the centre and at the periphery of the affected patches, did not show any signs of insect-pest, known disease, nutrient deficiency or toxicity on the foliage. There were no symptoms of root-knot nematode infestation. A peculiar phenomenon of the roots of affected plants being very dense with active rhizobium nodules and the primary roots giving rise to fresh axillary stem branches was observed. Neither the drenching of the plants with carbendazim @ 1 g L⁻¹ of water at the periphery of the patches nor the mechanical obstruction by live green gram hedges restricted the spread of the disease to healthy plants. Strangely enough, even the green gram plants exhibited similar symptoms. Further investigations are required to understand this phenomenon.



Affected groundnut fields (death of plants in patches)

Fresh branches arising from tap root system

Spread of disease (infected green gram hedge)

(Inputs: Nataraja M.V., Ranveer Singh, Yogendra Kumar, R.S. Garhwal)

EVENTS

'Parthenium awareness week'

16-22 August 2013, Junagadh

DGR observed 'Parthenium Awareness Week' from 16-22 August, 2013 to make aware and sensitize the DGR staff, farm labourers and inhabitants of nearby villages about harm caused by Parthenium and ways to control it. Dr R.A. Jat, Senior Scientist (Agronomy) delivered a talk on various aspects of Parthenium covering issues like losses caused and the effective control measures. This was



followed by 'search, uproot and destroy' campaign by DGR staff in DGR farm. In his address, Dr Jat informed the gathering that Parthenium entered into India along with wheat that was imported from USA decades ago. This weed is also known as '*Congress grass*' or '*Gajar-ghas*' and has become a serious problem both in agricultural and non-agricultural areas and has spread over 36 million ha since it was first observed in 1955. The weed has become noxious in India, as it not only causes yield losses in agricultural crops, but is also responsible for many skin and breathing related problems both in human and animals. The weed is difficult to control as it can spread both with seeds and vegetative parts and, can complete 2-3 generations in a year. In India, Parthenium is spreading fast as its bio-control agents are not found naturally in India.

(Inputs: Ram A. Jat and N.K. Jain)

Farm Innovator's Day

18 September 2013, Junagadh

A 'Farm Innovators' Day was organized at DGR on September 18, 2013 to acquaint the farmers of Junagadh and the neighbouring districts with the improved technologies of groundnut production. More than 600 farmers from Junagadh, Rajkot, Amreli and Jamnagar districts attended the event.

Dr. N.K. Jain, Principal Scientist, DGR coordinated the programme. At the inaugural session, Sh. P.V. Zala, Senior Technical Officer welcomed all the farmers and dignitaries. Beginning with the ICAR song and followed by lighting of lamp and a documentary film on DGR, Junagadh. In his address, Sh. L.R. Sadia, Deputy Director Agriculture (Extension), Junagadh emphasised on the need for reducing the cost of cultivation by adopting improved package of practices, drip irrigation to judiciously use irrigation water and mechanization of the farm operations. He was of the view that, at village level,

cooperative societies should be established to market the agricultural produce without involvement of middleman. In the years to come, farmers may consider value-addition of groundnut to earn more profit.

Dr. K.S. Detroja, Joint Director Agriculture, Junagadh, who was present as the special guest, urged the farmers to derive maximum benefit from government schemes launched from time to time. He also gave some tips to farmers on scientific cultivation of groundnut including optimum sowing time, method of sowing, integrated nutrient management, spacing and also treatment of seeds with *Rhizobium*. The Chief Guest of the day, Dr. A.M. Parakhia, Director, Extension Education, JAU emphasised on efficient use of natural resources by developing water harvesting structures, use of solar energy, etc. for enhancing productivity and quality of agricultural produce for economic sustainability.

While welcoming the gathering, Dr. J.B. Misra, Director, DGR, mentioned that groundnut is no more regarded as a mere important oilseed crop as its use as supplementary foodstuff was growing day by day owing to its nutritive value both for humans and animals. Programme coordinators/subject matter specialists from various KVKs of Junagadh, Dhoraji, Amreli and Targadia (Rajkot) also addressed the farmers and highlighted their various activities and advised the farmers to visit and participate in KVK's programmes. Progressive farmers Sh. Rameshbhai Pansuria and Smt. Hirbaiben Lobi shared their experiences by elaborating on how the farmers could get more benefit from groundnut crop by adopting low cost cultivation practices.

Further, Smt. Heerbaiben, a tribal women farmer from Jambur (Talala) told that she has initiated a cooperative movement by developing a *Mahila Mandal* of rural tribals for preparation of organic manure with the use of farm wastes and selling it at a very cheap rate for agricultural use.

A technical bulletin for scientific cultivation practices of groundnut in Gujarati language was also inaugurated by the dignitaries for use of farmers and stakeholders. On this occasion, an exhibition was also organised in which, besides DGR, eighteen firms manufacturing/supplying pesticides, fertilizers, implements and seeds displayed their products. Farmers took keen interest in this exhibition and got benefitted. After inaugural session, a series of lectures on best management practices including improvement, production and protection aspects of groundnut cultivation were delivered. During the discussion session, various queries raised by the farmers were answered by the scientists of the Directorate.

On this day, a competition was also organised for farmers. The farmers were given an opportunity to display their plant samples of groundnut. These exhibits were evaluated by an expert committee and as a token of recognition of their efforts in promoting good agricultural practices; some utility items were given away to these



Inauguration of Farm Innovators Day-2013



Farmers at DGR on the occasion of Farm Innovators Day-2013

farmers as prizes. The farmers were taken round the experimental field of DGR to acquaint the farmers about the research activities going on and appreciate the impact of various technologies on growth and other yield attributes of groundnut plants. Information pamphlets and brochures describing (in Gujarati) various aspects of groundnut were distributed to farmers free of cost. Dr K.A. Kalariya, Scientist, DGR, thanked all the guests and farmers for their active and constructive participation.

Research Advisory Committee (RAC) Meeting

26-28 September 2013, Junagadh

The 14th meeting of Research Advisory Committee was held at DGR, Junagadh from 26th-28th September, 2013. Due to his poor health, Dr. S.K. Patil, Chairman RAC (VC, Indira Gandhi Krishi Vishwavidyalaya, Raipur) had nominated Dr. Masood Ali, (Ex-Director, IIPR, Kanpur) as the chairman. Other members who had participated in the meeting were Dr. M.B. Chetti (Dean, UAS, Dharwad), Dr. S.N. Gurha (Ex. PS, IIPR, Kanpur), Dr. A.M. Parakhia (Director of Extension Education, JAU), Dr. J.B. Misra (Director, DGR), Ms. Hirbaiben I. Lobi (Progressive Farmer, Jambur, Junagadh), and Shri. J.K.B. Gunde (Progressive Farmer, Kolhapur, MH). Dr. S.K. Bera (PS, DGR) was the Member Secretary of 14th RAC meeting.

Presentations on ongoing research projects were made by the PIs or co-PIs which were discussed meticulously and the work plan was customized as per the remarks of the RAC. In their concluding remarks, Chairman and the members of RAC appreciated the research work that has been done at DGR and pointed out the need for reorienting the research plan on certain areas.



A view of 14th RAC meeting

ICGV 86590: Phosphorus-use-efficient groundnut genotype

Low availability of phosphorus in soil is one of the limiting factors affecting peanut productivity by reducing its leaf area and dry weight. There is ample evidence to suggest that peanut genotypes differ in their ability to tolerate low P availability. In a field experiment conducted in calcareous soils at DGR Junagadh under three different phosphorus levels, low-P (0 kg P₂O₅/ha), moderate-P (50 kg P₂O₅/ha) and high-P (100 kg P₂O₅/ha). Plant samples were collected at 40, 60 and 120 days after sowing. Growth parameters namely leaf area ratio, net assimilation rate, leaf dry weight, shoot dry weight, root dry weight, leaf weight ratio, root to shoot ratio, relative growth rate, relative whole leaf expansion rate, phosphorus efficiency and pod yield were measured. On the basis of P-efficiency index, genotype ICGV 86590 was found to be P efficient. This genotype is an option under P-limiting conditions to get reasonably high yields. Alternatively, it may be used in breeding program to develop location specific phosphorus-use-efficient genotype.

(Inputs: Ajay B.C., M.C. Dagla, Narendra Kumar, A.D. Makwana and H.N. Meena)

हिन्दी चेतना मास-2013

मूँगफली अनुसंधान निदेशालय, जूनागढ़ में 5 सितम्बर से 4 अक्टूबर 2013 तक 'हिन्दी चेतना मास-2013' मनाया गया। डॉ. जितेन्द्र भूषण मिश्र, निदेशक एवं अध्यक्ष-राजभाषा, द्वारा इस कार्यक्रम का उद्घाटन 5 सितम्बर 2013 को डीजीआर प्रेक्षागृह में किया गया। डॉ. मनेश चन्द्र डागला, वैज्ञानिक एवं प्रभारी-हिन्दी अधिकारी ने, निदेशालय परिवार के सभी सदस्यों का स्वागत किया तथा निदेशालय में हुई राजभाषा से संबंधित प्रगति के बारे में जानकारी दी। डॉ. अमृत लाल सिंह, प्रधान वैज्ञानिक तथा डॉ. रिकू डे, प्रधान वैज्ञानिक ने पूरे निदेशालय परिवार को इस सुअवसर पर बधाई दी। निदेशक महोदय ने सभी सदस्यों को इस कार्यक्रम के लिए शुभकामनायें प्रेषित कीं तथा निदेशालय में हिन्दी को बढ़ावा देने के लिए प्रोत्साहित भी किया। उन्होंने आशा जताई कि इस निदेशालय द्वारा बहुत जल्द ही राजभाषा के लिए निर्धारित लक्ष्य को प्राप्त कर लिया जायेगा। उद्घाटन समारोह के अंत में श्री लोकेश कुमार (तकनीकी सहायक एवं सदस्य सचिव, राजभाषा समिति) ने निदेशक महोदय, तथा संपूर्ण निदेशालय परिवार का अपनी एवं राजभाषा कार्यान्वयन समिति की तरफ से हार्दिक आभार प्रकट किया।

'हिन्दी चेतना मास-2013' के दौरान चार प्रतियोगिताओं (आशुभाषण, निबंध लेखन, मौखिक प्रश्नोत्तरी एवं सामान्य हिन्दी ज्ञान) का आयोजन किया गया। 08 अक्टूबर 2013 को आयोजित समापन समारोह की अध्यक्षता डॉ. अमृत लाल सिंह, प्रधान वैज्ञानिक ने की। इस अवसर पर डॉ. के.पी. बाकु, राजकीय कला महाविद्यालय, राणावाव, पोरबंदर मुख्य अतिथि के रूप में पधारे। विभिन्न प्रतियोगिताओं के विजेताओं को डॉ. के.पी. बाकु, डॉ. अमृत लाल सिंह, डॉ. राधाकृष्णन तथा डॉ. ऐ.एल. रत्नकुमार के कर

कमलों द्वारा पुरस्कृत किया गया। तदोपरांत निदेशक महोदय ने मुख्य अतिथि को स्मृति चिन्ह भेंट कर सम्मानित किया।

डॉ. के.पी. बाकु ने निदेशालय परिवार को संबोधित करते हुए हिन्दी भाषा के बारे में काफी रूचिकर जानकारियाँ दीं। उन्होंने हिन्दी भाषा को बढ़ावा देने के लिए विभिन्न हिन्दी साहित्यों की भूमिका के बारे में काफी विस्तार से बताया। डॉ. अमृत लाल सिंह ने अपने संबोधन में मुख्य अतिथि को अपने एवं निदेशालय परिवार की तरफ से धन्यवाद दिया, तथा निदेशालय के सभी सदस्यों को ज्यादा से ज्यादा कार्यालय का कार्य हिन्दी में करने के लिए प्रोत्साहित किया। कार्यक्रम के अंत में डॉ. अनिता मान ने धन्यवाद ज्ञापन किया। इस तरह 'हिन्दी चेतना मास-2013' इस निदेशालय पर बड़े ही उत्साह, प्रेम, उमंग तथा जिम्मेदारी के साथ मनाया गया।



डॉ. के. पी. बाकु-मुख्य अतिथि, श्री लोकेश कुमार-तकनीकी सहायक, को पुरस्कार प्रदान करते हुए

प्रधान वैज्ञानिक डॉ. अमृत लाल सिंह, मुख्य अतिथि डॉ. के. पी. बाकु को स्मृति चिन्ह भेंट करते हुए



सामान्य हिंदी ज्ञान प्रतियोगिता में भाग लेते प्रतिभागी

(आदान: मनेश चन्द्र डागला, वैज्ञानिक एवं हिन्दी अधिकारी)

DGR's 34th Foundation Day

01 October 2013, Junagadh

DGR celebrated its 34th Foundation Day on October 01, 2013. Dr. I.U. Dhruj, ADR, JAU, Junagadh was the chief-guest on the occasion. The programme began with an invocation song, after that Dr. Radhakrishnan welcomed all the guests. Dr. Dhruj in his address remembered the days



Inauguration of DGR Foundation day

when DGR was established and its everlasting scientific and social association with its neighbouring Junagadh Agricultural University. In a felicitation programme, the senior most employees in each category, viz. Scientific, Technical, Skilled Support and Administrative staff were felicitated for their services. A cultural programme was also organised in which the DGR project employees performed. The programme was concluded by vote of thanks by Dr. Anita Mann and a group photograph was taken.



Cultural programme by DGR staff on the occasion of Foundation Day

PERSONNEL

Superannuation

Dr. R.S. Tomar, Technical Officer (T-6) superannuated on October 31, 2013.



Dr. A.P. Mishra, Senior Scientist, Statistics, superannuated on November 30, 2013.



Resignation

Dr. Sakkira Begum, Scientist, Plant Breeding, resigned from DGR, Junagadh w.e.f. August 29, 2013 on her selection in the Indian Forest Services.



DISTINGUISHED VISITOR

Members of Food and Veterinary Office (FVO) – one of the directorates under the Directorate General for Health and Consumers of the European Commission visited DGR along with APEDA, New Delhi, members on October 26, 2013.



INSTITUTE SEMINARS

Date	Speaker	Topic
Aug. 19, 2013	Ajoy Saha	'Simultaneous Analysis of Pendimethalin, oxyfluorfen, imazethapyr and quizalofop- <i>p</i> -ethyl by LC-MS/MS and safety evaluation of their harvest time residues in peanut'
Aug. 19, 2013	Debarati Bhaduri	'Variable accumulation of phosphorus in groundnut cultivars under influence of soil salinity'
Aug. 23, 2013	Sakkira Begum	'Outcome of orientation training at JAU, Junagadh'
Sept. 02, 2013	R.S. Yadav	'Phosphorus availability and uptake as influenced by different management practices under groundnut cultivation in calcareous vertisols'
Sept. 04, 2013	K.K. Pal	'Sequencing of Metagenomes: Finding a Needle in the Haystack?'
Dec. 05, 2013	G.P. Mishra	'Application of biometrics and bioinformatics tools in crop improvement research'
Dec. 07, 2013	J.B. Misra	'Cracking the mystery of photorespiration'
Dec. 30, 2013	P.P. Thirumalaisamy	'Phenotyping of groundnut genotypes for resistance to <i>Sclerotium</i> stem rot' and 'Incongruity in fixing maximum permissible limits of aflatoxins in peanuts'

VISITS ABROAD



Dr. A.L. Singh, Principal Scientist, Plant Physiology and **Dr. Ajay B.C.**, Scientist, Plant Breeding attended 17th International Plant Nutrition Colloquium (IPNC) which was held in Istanbul / Turkey, at the Istanbul Convention and Exhibition Center (ICEC), from August 19-22, 2013. The main theme of this colloquium was

"Plant nutrition for nutrient and food security"

Dr. K.S. Jadon (Scientist, Plant Pathology) visited USA for 12 weeks (September 23, 2013 to December 15, 2013) under Norman E. Borlaug International Agricultural Science and Technology Fellowship Program, funded by the USDA-Foreign Agricultural Service. He worked with Dr. Barbara B. Shew (Research Assistant Professor and Director, Department of Plant Pathology) at NC State University, Raleigh, NC on "Peanut Risk Management Decision Support System (DSS) and Weather based Disease Advisories".



Dr. G.P. Mishra (Senior Scientist, Plant Breeding) attended an international training on "Application of Biometrics and Bioinformatics Tools in Crop Improvement Research" at Nairobi (Kenya) from November 04-09, 2013 which was fully funded by the ICRISAT, Patancheru, Hyderabad.



TRAININGS

Season Long Training Programme (SLTP)

The Directorate of Plant Protection, Quarantine & Storage (DPPQ&S), Faridabad, through Central Integrated Pest Management Centre (CIPMC), Baroda organized a "Season Long Training Programme" (SLTP) on Groundnut for 30-days (September 16, 2013 to October 15, 2013) at DGR, Junagadh. There were total 40 participants from JAU, Department of Agriculture, Gujarat and officials from DPPQ&S, Govt. of India. The training was inaugurated by Dr. N.C. Patel, Hon'ble Vice Chancellor of Junagadh Agricultural University, Junagadh. Dr. S.N. Sushil (Plant Protection Advisor, Deptt. of PPQ&S, Faridabad) presided over the programme. Other dignitaries who were present on this occasion included Dr. B.R. Shah (Director of Agriculture, Gujrat State Agril. Deptt., Gandhinager), Sh. Ram Asre (Addl. Plant Protection Advisor, IPM, Deptt. of PPQ&S, Faridabad), Sh. B.V. Vasoya (Dy. Director, Gujrat State Agril. Deptt., Gandhinager) and Ms. Rita Matta (CIPMC, Baroda). Dr. J.B. Misra, in his inaugural address, put emphasis on the need of such long trainings on single crop and encouraged the participants to make full use of that. The training was successfully completed on October 15, 2013 in which participants' feedback was quite good and they felt satisfied from this training.



Inaugural session of SLTP

PARTICIPATION IN CONFERENCE/ WORKSHOP/ SEMINAR/ SYMPOSIA/ MEETINGS/ TRAINING PROGRAMMES

Name	Programme	Venue	Date
Anita Mann	Training on 'Recent Advances in Proteomics for Biomarker Discovery'	NDRI, Karnal	July 08-17, 2013
G.P. Mishra All Scientist	'Foundation Course Training July 2013' 'Season Long Training Programme on IPM in Groundnut' by DPPQ&S and CIPMC, Vadodara	NAARM, Hyderabad DGR, Junagadh	July 15-27, 2013 September 16 to October 15, 2013
Ajay B.C.	Training on 'Plant Genetic Resources and Gene bank management'	ICRISAT, Hyderabad	October 07-12, 2013
D. Bhaduri	National Seminar on 'Developments in Soil Science – 2013' in 78 th Annual Convention by Indian Society of Soil Science	CAZRI, Jodhpur	October 23-26, 2013
G.P. Mishra	'RFD review meeting of Nodal and Co-nodal officers'	Krishi Bhawan, New Delhi	October 29, 2013
Anita Mann	Training on 'Advanced Omics Techniques for Improvements in Plant and Human Health'	IARI, New Delhi	November 15 to December 05, 2013
M.C. Dagla	Training on 'Pre-breeding and crop improvement in legumes'	ICRISAT	December 09-20, 2013
All Scientists	National Conference of Plant Physiology-2013 on 'Current Trends in Plant Biology Research'	Junagadh	December 13-16, 2013

PHOTO GALLERY



Students learning seed production technique in groundnut



संसदीय राजभाषा समिति की बैठक (18 अप्रैल, 2013, नई दिल्ली)



Independence Day celebration

