



Sarson

news



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Hon'ble Union Minister of Agriculture, Govt. of India, Sh. Sharad Pawar visited mustard field

Hon'ble Union Minister of Agriculture, Govt. of India, Sh. Sharad Pawar and Secretary DARE & DG, ICAR, Dr. S Ayyappan visited the mustard fields at Singna Burj village in Kirawali tehsil, Agra, Uttar Pradesh on Jan 24, 2011. Deputy Director General (Animal Husbandry), Dr. K. M. L. Pathak was also present on the occasion. Dr. S. Ayyappan apprised the Hon'ble Minister about the programmes and activities of the Directorate especially the first hybrid of Indian mustard, NRCHB 506, developed by this Directorate. Director, DRMR,

Dr. J.S. Chauhan informed the Hon'ble Minister about the other varieties developed by DRMR namely NRCDR 2, NRCHB 101, NRCDR 601 of Indian mustard and NRCYS 05-02 of yellow sarson. Hon'ble Minister had a brief discussion with the scientists from DRMR and farmers of the locality about improved varieties of mustard, cost of cultivation, productivity and return from the crop. He also discussed the effect of temperature on mustard, potato and wheat crop.



Sarson family greets Dr. B. B. Singh, new ADG (Oilseeds & Pulses), ICAR, New Delhi



Renowned pulses breeder, Dr. Brij Bhuwan Singh joined the ICAR Head Quarter as Assistant Director General (Oilseeds and Pulses) on Jan 27, 2011. Before joining the new assignment, Dr. Singh was Project Coordinator (MULLaRP) at IIPR, Kanpur (2005-2011). Born on Jan 1, 1955 at Jaunpur, UP, Dr. Singh completed B.Sc. (1975) and M.Sc. (1980) degrees from CSAUA&T, Kanpur and Ph.D. (1985) from BHU, Varanasi. He was Assistant Professor (Genetics & Plant Breeding) (1986-1996) and Associate Professor (1996-1998) at NDU&T, Faizabad and Senior Scientist (1998), Principal Scientist (2002) and Head, Crop Improvement (2002-2005) at IIPR, Kanpur. He has worked extensively on wide

hybridization of *Vigna* and developed 12 varieties and 9 useful genetic stocks of mung bean, urd bean, lentil and pigeon pea. He has published 64 research papers, 6 popular articles, 30 book chapters, 14 research bulletins and 2 books and has mentored 2 M.Sc. students as major advisor and more than 30 M.Sc. and Ph.D students as co-advisor. Dr. Singh is a Fellow of Indian Society of Genetics & Plant Breeding and also of Indian Society of Pulses Research & Development. He has received several awards notable among them are the Best Teacher Award (1997), Best Scientists Award (2003 and 2005) and ISPRD Recognition Award (2009). He visited Syria, Nepal, Bhutan and Bangladesh under several international collaborative projects. The sarson family extends warm welcome to Dr. B.B. Singh and looks forward to march ahead under his guidance.

Sarson vigyan mela-cum-exhibition organized

About 800 farmers, officials from different ICAR organizations, Government of Rajasthan, input agencies, NGOs, press and media participated in the 17th Sarson Vigyan Mela organized at DRMR on Feb 1, 2011. The chief guest Dr. C. D. Mayee, Chairman, ASRB, New Delhi in his inaugural address highlighted the urgency for studies on the impact of climate change and development of resilient technology for the management. He motivated the farmers to adopt the updated package of practices and operate their own farmers club for collective marketing and cautioned them for over exploitation of natural resources and imbalance use of fertilizers which may prove great deterrent in achieving higher productivity in the long run. In his presidential address, Prof. Swapan K. Datta, DDG (Crop Science), ICAR, New Delhi expressed farmers' concern for non-remunerative prices of

the crop produce and suggested different kinds of value addition in oil and meal for farmers' enhanced income. He also felt for creating increased awareness of the consumers about the quality of mustard oil to develop market for the value added products. In his welcome address, Dr. J. S. Chauhan, Director reiterated the commitments of the Directorate for increasing the productivity, improving the quality of oil and strengthening the livelihoods of farmers. 35 progressive farmers from Rajasthan and Uttar Pradesh were felicitated for their contribution in the transfer of rapeseed-mustard technology. Two technical bulletins "Improved varieties of Indian mustard for different climatic condition for seed production" and "Production technology of quality seed of rapeseed-mustard" published in Hindi were also released.



DRMR joins national level monitoring team (NALMOT) for Rajasthan

DRMR participated in the NALMOT activities for monitoring Integrated Scheme for Oilseeds, Pulses, Oil palm and Maize (ISOPOM) sponsored by the Department of Agriculture & Cooperation, Ministry of Agriculture and implemented by the Directorate of Agriculture, Rajasthan. Dr. Pankaj Sharma, Senior Scientist at the Directorate along with representatives from the Directorate of Oilseeds Development, Hyderabad, Directorate of Millets Development, Jaipur, Director of Agriculture, Jaipur, AICRP on Linseed and Agricultural Research Station (MPUAT), Kota visited oilseeds,

pulses and maize production programmes in Jaipur, Sawai Madhopur, Tonk and Dausa districts of Rajasthan during Feb 9-10, 2011. Minikits on mustard hybrid (DMH 1) distributed in Jaipur district were in good condition with some symptoms of white rust stag head and aphid infestation in traces. Minikits in rainfed conditions on Vasundhara variety of Indian mustard had *Orobanche* infestation in the Tonk district. Interaction meetings were also held with the local farmers. The team also suggested minikits on other improved mustard varieties like RB 50, Aravali, RGN 48 under rainfed and NRCDR 2, RGN 73, RGN 13, NRCDR 601 and NRCHB 101 for irrigated conditions.



Son of a DRMR employee cracked IIT JEE 2011

Mr. Devkant Singh alias Durgesh, S/o Sh. Ramnarayan, Technical Officer, DRMR Bharatpur has cracked IIT JEE 2011. He secured 922nd rank in the SC/ST merit list and offered a seat in Mechanical Engineering at IIT, Indore. The Sarson family congratulates young boy and his family for this stupendous achievement, takes pride in his success and wishes him all the successes in future.



Brain storming meetings for enhancing rapeseed-mustard production

Rajendra Agricultural University, Pusa (Bihar), Feb 12, 2011

DRMR organized a brain storming meeting to identify ways for enhancement of rapeseed-mustard productivity in Zone V, comprising Bihar, Jharkhand, West Bengal, Chhattisgarh, Orissa and North Eastern states which was attended by 25 scientists and research managers. The zone which contributes 12.3% to production from 19.5% acreage in India, has a realizable yield gap of 22-53% as indicated by the frontline demonstrations. Dr. J. S. Chauhan, Director, DRMR while presenting an overview of oilseeds scenario informed about the national expectation of two-fold increase in the rapeseed-mustard production by the end of 12th five year plan and sought suggestions, approaches for programme formulation and matching logistics and budget requirements to achieve the target. The meeting suggested following state-wise action plan.



- Immediate submission of proposals of newly developed varieties of toria (TS 36, TS 38, TS 46, TS 66 and TS 67) for Assam and Indian mustard varieties (Rajendra Suflam and Rajendra Anukool) for Bihar for notification and producing adequate quality seeds.
- Evaluation of Indian mustard varieties (NPJ 112, Pusa Agrani, Pusa Mahak, Kanti, EJ 17) to identify suitable short duration genotypes for rice fallows of Assam, Bihar, Jharkhand and West Bengal and that of yellow sarson (YSH 401, NRCYS 05-02 and Pitambari) for West Bengal and develop suitable agronomic management practices.
- To start a centralized crossing programme at the Dholi centre and distributing segregating populations to all the centres in the Zone for which need based contingency will be provided by DRMR, Bharatpur.
- A joint collaborative project on "Farmer participatory varietal selection of rapeseed-mustard for enhancing production in rice fallows of eastern India" will be developed by Dholi centre for submission to Department of Agriculture & Cooperation, Ministry of Agriculture, Govt. of India.

GBPUA&T, Pantnagar (Uttarakhand), May 17-18, 2011

Several distinguished research managers and scientists from the ICAR, New Delhi; DRMR, Bharatpur; IARI, New Delhi; GBPUA&T, Pantnagar, CCSHAU, Hisar, CSKHPKV, Kangra and PAU, Ludhiana participated in the meeting for enhancing rapeseed-mustard productivity in Zone II and Zone III, covering the states of Jammu & Kashmir, Punjab, Haryana, Delhi, UP, Uttarakhand, MP and parts of Rajasthan. These states together hold vast potential to substantially enhance the production of rapeseed-mustard in the country.

Dr. J. S. Chauhan, Director, DRMR apprised the participants about an overview of the status of rapeseed-mustard crops in the country and the future projected demand for edible oils in the coming decades. Dr. B. B. Singh, ADG (O&P), ICAR, New Delhi called for genetic enhancement of yield by introgressing resistance to biotic and abiotic stresses



and by changing the plant architecture of Indian mustard to improve harvest index. He also called for strengthening selected AICRP-RM centres by creating need based infrastructure in the 12th five year plan. Dr. B. S. Bisht, Hon'ble Vice Chancellor, GBPUA&T, Pantnagar in his address highlighted significant achievements of the University in rapeseed-mustard research and expressed concern about widening gap between demand and supply of oilseeds in the country resulting into huge import of edible oils. Dr. D. P. Singh, former Director Research, GBPUA&T, Pantnagar who was chairman of the technical sessions recommended to go for massive wide hybridization programme to solve the problems of abiotic and biotic stresses and yield *per se* and development of early maturing varieties tolerant to abiotic stresses. The group finally recommended that to ascertain a focused and target oriented research during 12th five year plan, the programmes should be developed in network project mode, especially

- Development of hybrids and enhancing level of heterosis in Indian mustard
- Utilization of wild and related crucifers for photo insensitivity, enhancing tolerance against biotic and

abiotic stresses and broadening the genetic base of Indian mustard

- Marker assisted selection for quality improvement

In review meeting of Biochemistry & Plant Physiology research programmes under AICRP-RM, Dr. Maharaj Singh, Senior Scientist (Plant Physiology) presented the status of plant physiological research for last 30 years (1980-2010) and enlisted the promising strains of rapeseed-mustard having tolerance for different abiotic stresses. Dr. (Mrs.) Manju Bala, Senior Scientist (Biochemistry) presented the status of research in biochemistry. As per recommendations of the review meeting, biochemical and molecular characterization of identified strains showing tolerance to salinity and high temperature during seedling/terminal stage should be taken up at the earliest. The plant physiology research programme should elucidate mechanism / basis of tolerance for abiotic stresses, in general, and drought stress in particular. The Biochemistry research programme should take up the issue of association mapping for various stresses, in general, with an adequate focus on the biotic stress tolerance. It was also recommended that only those centres which have some basic infrastructure should be further strengthened for biotechnological/ biochemical work during 12th plan.

DRMR, Bharatpur (Rajasthan), June 27-28, 2011

Agronomists, Entomologists and Plant Pathologists working at different centres under AICRP-RM met at DRMR during June 27-28 to discuss pertinent issues of regional, national and international importance addressing agronomical and plant protection perspectives of the coordinated programme. The agronomists discussed the issues and strategies for each of the zone separately and recommended that the package of practices of only those genotypes should be generated which clears the stringent norm of AVT-II. The centres will take lead for the development of technologies for managing *Orobanche* root parasite, integrated weed management strategy for broad leaf and grassy weeds, intercropping, fertilizer use efficiency, abiotic stress



management and resource conservation technologies.

Crop protection scientists suggested dynamics of emerging pests and diseases under changing climate, epidemiological studies and development of forecasting model for major pests and diseases, bio-intensive integrated pests/ diseases management modules, standardization of host differential for major pathogens and techniques for long term maintenance of isolates, to be the areas for considerations during 12th five year plan.

Awareness programme on Protection of Plant Varieties and Farmers Rights Act (PPV & FRA) organized

DRMR organized one-day training-cum-awareness programme on PPV & FRA on Feb 17, 2011 for the benefit of farmers, researchers, development personnel and other stakeholders. On the occasion, Director, DRMR, Dr. J. S. Chauhan said that India is rich in traditional and indigenous knowledge as well as bio-diversity. He said that the PPV & FR Act will provide an effective system for protection of plant varieties and rights of both farmers as well as plant breeders. It also helps to recognize contributions of the farmers/ community in conserving, improving and making available plant genetic resources for development of new plant varieties. Dr. P. K. Singh, Registrar, PPV&FR Authority, New Delhi discussed the enactment and establishment of the Authority. He informed that India developed *sui generis* system for protection of plant varieties in consonance with UPOV system of Novelty, Distinctiveness, Uniformity and Stability. Farmers' Rights section was a unique feature of the Act, which gave

the much needed importance to the farmers. Sh. B. K. Singh, Joint Director (Oilseeds), Department of Agriculture, Government of Rajasthan also addressed the participants. More than 100 farmers, research and development personnel attended the programme.



4th meeting of Institute Bio-Safety Committee (IBSC) held

DRMR organized 4th IBSC meeting under the Chairmanship of Dr. J. S. Chauhan, Director on April 18, 2011 which was attended by members, Dr. S. J. Kolte, Ex-Professor, Plant Pathology, GBPUA&T, Pantnagar, Dr. Anil Kumar, Professor & Head, Deptt of Mol. Biology & Genetic Engineering, GBPUA&T, Pantnagar, Dr. S. R. Bhat, Principal Scientist, NRCPB, New Delhi, Dr. Harish Sharma, Medical Officer, RBM Hospital, Bharatpur, Dr. V. V. Singh, Sr. Scientist, DRMR, Bharatpur and Dr. Ajay Kumar Thakur, Scientist, DRMR, Bharatpur. The members discussed the BRL-1 trial of transgenic mustard hybrid developed by DHARA/University of Delhi and conducted at ARSs Navgaon and Sriganganagar and KVK, Kumher under the overall coordination of Director, DRMR. The IBSC suggested constituting Coordination Committees at district and state level for carrying out any confined field trials for transgenic crops. Considering the facilities required for the proposed Basic Science Complex at the Directorate, the committee suggested

to consult BARC before developing radio labeling facilities. The committee monitored the bio-safety practices at the Directorate and expressed satisfaction.



Consultation on stakeholders' perspectives for DRMR's Vision 2030

31 stakeholders including representatives from mustard oil processing industry, state department of agriculture, adaptive trial centre, Rajasthan state seed corporation, krishi kigyan kendra, state agricultural university, non-governmental organization, progressive farmers and the scientists of the Directorate held consultation on perspectives for DRMR's Vision 2030 on May 10, 2011 at DRMR. Dr. J. S. Chauhan, Director, DRMR chaired the meeting and in his introductory remarks, he outlined the purpose of the meeting. All the stakeholders expressed happiness over a good harvest of mustard crop in the last season and farmers receiving a market price of over Rs 2500/q in the open market against Rs 1850 MSP/q. The stakeholders suggested DRMR to take note of the following important issues while developing the vision 2030.

- Development of varieties with high seed & oil yield, medium height, basal branching and short duration, resource conservation technology in the light of dwindling natural resources, *Orobanche* root parasite & other obnoxious weeds' management technology and technology for spraying of growth regulator, pesticides, etc. in tall mustard crop.
- Research and training on bee keeping and maintaining the quality of mustard honey for value addition.

- Value addition of mustard straw for remunerative price and developing value added by-products like sauces/paste from yellow sarson for fast food market.



The stakeholders also felt the need to enhance the recovery of at least 2-3% oil from the seed meal through solvent extraction methods, develop strong networking and partnership of stakeholders for faster dissemination of technology and need to have a policy framework on the import duty to safeguard the interest of domestic edible oil producers and consumers' health.

Observance of anti-terrorism day

DRMR observed anti-terrorism day on May 21, 2011. Dr. J. S. Chauhan, Director and all the staff members took a pledge of keeping unshakable faith in the Indian tradition of non-violence and tolerance and to oppose all forms of terrorism and violence. Dr. Chauhan urged all to uphold and promote peace, social harmony and understanding among all fellow human beings and fight the forces of disruption threatening human lives and values. On the occasion, guest speaker Dr. Daudayal Gupta, Ex-Deputy Director (Education) said that suitable strategy should be devised to fight against



the terrorism and stern punishment will act as deterrent to the acts of terrorism. Dr. Firoz Akhtar, Lecturer, Sociology, RD Girls College, Bharatpur opined that the terrorists have no caste, creed and religion and terrorism should be studied in historical and global perspectives. The root cause of

terrorism is discrimination, deprivation and destitution and the government policies should adequately address such issues. The strategy should be earnestly implemented adopting the principles of truth and non-violence, said Dr. Akhtar.

18th Institute Research Committee meeting held

DRMR organized 18th Institute Research Committee meeting on June 13-14, 2011 under the Chairmanship of the Director, DRMR. Scientists presented progress of project work done during the year 2010-11. For ensuring focused and result oriented research approach, it was decided that in Crop Improvement there will be three major programme-Genetic enhancement for biotic and abiotic stresses; Genetic enhancement for seed yield, oil content and oil & seed meal quality and Rapeseed-mustard genetic resource management. The Director reaffirmed all support to the scientists for achieving excellence in their respective areas of specialization. Further, the Chairman emphasized for better coordination among the scientists for achieving the best output in terms of product, technologies development or publications from the research work.



New Research Advisory Committee (RAC) of DRMR held its first meeting

The ICAR reconstituted RAC for a period of 3 years with effect from Feb 8, 2011 with the following members.

Dr. D.P. Singh Ex-Vice Chancellor, JNKVV, Jabalpur	Chairman
Dr. S.E. Pawar Ex-Scientist, BARC, Mumbai	Member
Dr. M.P. Sahu Director Research, SKRAU, Bikaner	Member
Dr. S.N. Upadhyay Head, Entomology, RVSKVV, Gwalior	Member
Dr. K.P. Singh Professor, Mycology & Pl. Pathology BHU, Varanasi	Member
Dr. T. Mohapatra Principal Scientist, NRCPB, New Delhi	Member
Smt. Sushma Singh Lucknow	Member
Dr. B.B. Singh ADG (OP), ICAR, New Delhi	Member
Dr. J.S. Chauhan Director, DRMR	Member
Dr. B.K. Kandpal	Member Secretary

The committee held its first meeting and overall 14th at DRMR from March 13-14, 2011. Barring Dr. T. Mohapatra and Smt. Sushma Singh all were present in the meeting. Dr. J.S. Chauhan presented research and development programme of the Directorate and AICRP-RM research highlights for the year 2009-10. All the Incharges presented project-wise significant achievements and the on-going technical programmes



of their unit. The Hon'ble members gave specific suggestions for each project. The Director assured that the suggestions of RAC would be complied with. Dr. B. K. Kandpal, member secretary thanked Chairman and members for sparing their valuable time and providing valuable suggestions.

निदेशालय में हिन्दी कार्यशालाओं का आयोजन

सरसों अनुसंधान निदेशालय में पिछले छः महीनों में दो एक-दिवसीय हिन्दी कार्यशालाओं का आयोजन किया गया। 30 मार्च 2011 को आयोजित पहले कार्यशाला में भरतपुर स्थित हिन्दी भाषा तथा साहित्य से जुड़े चार जाने-माने विद्वानों ने व्याख्यान दिए। निदेशक डॉ. जितेन्द्र सिंह चौहान ने अपने उद्घाटन संबोधन में राजभाषा हिन्दी के कार्यालय-कार्यों में अधिकाधिक प्रयोग पर बल दिया और विश्वास जताया कि हिन्दी कार्यशालाओं के निरंतर आयोजन से वैज्ञानिकों एवं कर्मचारियों के हिन्दी ज्ञान में निश्चित रूप से वृद्धि होगी। डॉ. दाऊदयाल गुप्ता, पूर्व उपनिदेशक, स्कूल शिक्षा ने कहा कि राष्ट्रभाषा हिन्दी अभिव्यक्ति के माध्यम के साथ ही हमारी संस्कृति की वाहिका भी है। उन्होंने कहा कि आज विश्व में चीनी भाषा के बाद हिन्दी बोलने वालों की संख्या सबसे अधिक है और 141 विश्वविद्यालयों में हिन्दी पढ़ाई जा रही है। श्री मोहन लाल मधुकर, पूर्व अध्यक्ष, ब्रजभाषा अकादमी, जयपुर ने कहा कि हिन्दी को अंग्रेजी से कोई खतरा नहीं है। यह एक सरल भाषा है और यही कारण है कि इसे आज अहिन्दी भाषी क्षेत्रों में भी बहुत बढ़ावा मिल रहा है। श्री मधुकर ने देवनागरी लिपि की विशेषताओं के बारे में बताते हुए कहा कि हिन्दी में 85 करोड़ शब्दों का निर्माण हो सकता है जो किसी अन्य भाषा में संभव नहीं हैं। श्री रामबाबू शुक्ल, पूर्व अध्यक्ष, हिन्दी साहित्य समिति, भरतपुर ने कहा कि संस्कृत भाषा के पदचिन्हों पर चलकर ही हिन्दी भाषा सुदृढ़ हुई है और हिन्दी में शब्दों का निर्माण संस्कृत की भांति ही होता है। उन्होंने कई उदाहरण देते हुये विभिन्न शब्दों के निर्माण के बारे में समझाया। डॉ. अशोक कुमार गुप्ता, प्राध्यापक, हिन्दी विभाग, एम. एस. जे. महाविद्यालय, भरतपुर ने समान शब्दों को लेकर शब्द निर्माण के बारे में जानकारी दी और कविता के माध्यम से हिन्दी भाषा के महत्व पर प्रकाश डाला। कार्यशाला के अंत में आयोजित एक परिचर्चा में निदेशालय के सभी वैज्ञानिकों एवं कर्मचारियों ने उत्साहपूर्वक भाग लिया। 23 जून 2011 को आयोजित दूसरे एक-दिवसीय हिन्दी कार्यशाला का डॉ. प्रमोद कुमार राय, प्रधान वैज्ञानिक ने माँ सरस्वती के आगे दीप प्रज्वलित कर उद्घाटन किया। इस कार्यशाला में भी डॉ. दाऊदयाल गुप्ता और डॉ. अशोक कुमार गुप्ता उपस्थित हुए। डॉ. दाऊदयाल गुप्ता ने हिन्दी



को वैज्ञानिक भाषा की संज्ञा दी और कहा कि इसमें जैसा उच्चारण होता है ठीक वैसा ही लेखन भी किया जाता है। उन्होंने इस कथन को उदाहरण के माध्यम से समझाया। प्राध्यापक डॉ. अशोक कुमार गुप्ता ने 'हिन्दी शब्दकोश का अवलोकन' विषय पर अपना प्रायोगिक व्याख्यान दिया। उन्होंने सहभागियों को शब्दकोश में शब्दों के नियत स्थान एवं उनके अर्थों के बारे में विस्तार से बताया। राजभाषा प्रभारी एवं वरिष्ठ वैज्ञानिक डॉ. पंकज शर्मा ने दोनों कार्यशालाओं की सफल प्रस्तुति की।

RESEARCH HIGHLIGHTS

Apothecia observed under field conditions

Apothecia of *Sclerotinia sclerotiorum* (Lib.) de Bary was observed through naked eye on the soil surface of an Indian mustard field (cv. Rohini) at the Experimental Farm of DRMR during the second fortnight of Jan 2011. Apothecia are sexual fruiting bodies produced by the ascomycete fungus, *Sclerotinia sclerotiorum*, which causes stem rot in rapeseed-mustard. Originating from



sclerotium, a black coloured small resting structure, the apothecium was stipitate, cup shaped, light brown in colour, 4-7 mm in diameter with a small cylindrical stalk of 3-4 mm height and even surface. Favourable environmental conditions might have induced apothecia development from the resting sclerotia. Cool temperature, high soil moisture and maximum relative humidity favours sclerotia germination. The prevailing weather at the time of occurrence was Tmax 17.5, Tmin 4.4, RH 98.3% (morning) and 67.3% (afternoon), low (4.0) bright sunshine hour, 0.3 mm rainfall and 16.0% soil moisture. The production of ascospores was later confirmed during the petal inoculation study.

**Pankaj Sharma and P. D. Meena, Sr. Scientist,
DRMR, Bharatpur**

Indian mustard became a new host of *Cladosporium* sp

Fungal Identification Service, Mycology and Plant Pathology Group, Agharkar Research Institute, Pune (Maharashtra) has confirmed the identity of a new pathogen reported from DRMR as *Cladosporium* sp. Unusual symptoms on the leaves of Indian mustard in the experimental plots during *rabi*



2010-11 led to this discovery. The disease appeared as a small olivaceous green leaf spot that became grayish brown and necrotic with age. Somewhat round to oval spots of 5-20 mm diameter and surrounded by a chlorotic halo were found predominantly towards the centre of the infected leaves. The infected margins of the diseased leaf samples were surface sterilized, cut into small blocks, soaked in 1% sodium hypochlorite (NaOCl) for 3 minutes, rinsed in sterile distilled water several times, placed onto potato dextrose agar (PDA) and incubated at 22±2 °C in BOD. Consistently isolated fungus had olivaceous green reverse olivaceous black velvety colonies, branched hyphae, septate, conidiophores up to 250 µm long and 3-6 µm wide, ellipsoidal to cylindrical conidia with rounded ends often 2- or more-celled. Pathogenicity tests were performed with pure cultures of the fungus by spraying conidial suspensions in distilled water on healthy leaves. Typical lesions developed 7-10 days after inoculation, and *Cladosporium* sp was reisolated. Leaves sprayed with distilled water (control) remained symptomless. *Cladosporium* sp is known to be associated with several plants species. *Cladosporium* leaf spot on *B. oleraceavora* var *capitata* and *B. oleraceavora* var *gonylodes* have been reported earlier. This is the first report of *Cladosporium* sp pathogenicity on Indian mustard.

Pankaj Sharma and P. D. Meena,
Sr. Scientist, DRMR, Bharatpur

Brown girdling root rot in Indian mustard: A potential threat

A farmer's mustard field badly damaged by an unknown disease at about 4 km from DRMR campus was visited by a team of Directorate's scientists. The team observed a severe outbreak of root rot disease in Indian mustard field at the



flowering stage. There was no history of the disease in the village. Foliar symptoms of the disease on plants were visible at the time of visit. Plants appeared stunted with drying leaves, wilted and bended stem with almost 75% severity of disease in the field. When such plants were uprooted, dark brown lesions with irregular margins on main and lateral roots were observed. The Fungal Identification Service, Mycology and Plant Pathology Group, Agharkar Research Institute, Pune, India has identified the pathogen as *Fusarium* sp. The fungus which caused the "brown girdling root rot in Indian mustard" was being considered as a potential threat of mustard.

**Pankaj Sharma, P. D. Meena and
S. K. Jha, Sr. Scientist, DRMR, Bharatpur**

Orobanche produces a mystery for the farmer of Bharatpur

DRMR on receiving a communication from the Department of Agriculture, Bharatpur sent a team to investigate an unknown disease in Abar village, Kumher tehsil, Bharatpur, Rajasthan. The team had the assistance of a local Agriculture Officer of Bharatpur district to reach the location. It was a 2 ha field of Indian mustard of Sh. Jawahar Singh heavily infested (almost 100%) with *Orobanche* root parasite. He was totally unaware of this menace in his almost 20 years' association with the mustard crop and so was the agriculture officer. This piece of land used to give him about 40 q of



mustard seeds annually with the same level of management and investment but this year it seemed to be virtually nothing for him. The field had Rohini variety of Indian mustard at the flowering stage but attached with one or two plants of *Orobanche* in the entire field. As a result of this infestation, the mustard plants had stunted growth and yellow leaves and symptoms of drying/wilting probably because of the competition with the root parasite for moisture and nutrition. The roots of *Orobanche* were deeply attached with the roots of mustard and measured up to 60 cm. Sh. Jawahar Singh had the first experience of *Orobanche* infestation in mustard crop. The team didn't find any trace of *Orobanche* in the nearby mustard fields but found some infestation in some distant fields also in the village. Contaminated seeds of the Rohini variety of mustard used by the farmer for sowing might have introduced the seeds of *Orobanche* parasite in his field, the team concluded.

Pankaj Sharma, S. P. Singh and S. K. Jha
Sr. Scientist, DRMR, Bharatpur

Theses submitted at AICRP-RM Centres

Chandra Shekhar Azad University of Agriculture & Technology, Kanpur

Genetic analysis of seed yield and its contributing traits in Indian Mustard [*Brassica juncea* (L.) Czern & Coss.]

Student: Mr. Amit Tomar, **Guide:** Dr Mahak Singh

- Non-additive type of gene action was more prevalent than additive type for most of the 12 traits evaluated in 80 F₁s derived from crossing of 20 lines and 4 testers and 24 parents.
- For high seed yield / plant, Pusa Bahar x Pusa Agrani and KR-5610 x Pusa Agrani were good specific combiners.
- Seed yield / plant was significantly correlated with days to flower, days to maturity, primary branches, secondary branches, siliquae/ plant, plant height, biological yield / plant, 1000-seed weight, harvest index and oil content.

Combining ability for yield and its components in Indian mustard [*Brassica juncea* (L.) Czern & Coss.]

Student: Mr. Rajendra Kumar, **Guide:** Dr Mahak Singh

- Additive and non-additive type of gene actions were involved in all the 9 characters evaluated in 21 F₁s derived from 7 parents diallel without reciprocals and the 7 parents.
- Highest desirable effect of heterosis over standard check was found in the crosses Maya x Durgamani, Maya x Urvashi, Jawahar mustard-1 x Urvashi,

however, similar effect over mid parents was found in crosses Maya x Durgamani, Maya x Urvashi, Jawahar mustard-1 x Urvashi, Maya x Pusa Agrani and Maya x RLM-198.

- Seed yield / plant was significantly correlated with days to flowering, days to maturity, length of main raceme, siliquae / plant, oil content and test weight.
- High genetic gain was recorded for days to flowering, length of main raceme, secondary branches / plant, siliquae / plant, 1000- seed weight and seed yield/ plant.

Genetical studies in Indian mustard [*Brassica juncea* (L.) Czern and Coss.]

Student: Mr. Anurag Dubey, **Guide:** Dr Mahak Singh

- Observations were recorded on 12 quantitative characters in 8 parents, 28 F₁s and 28 F₂s sown in randomized block design with 3 replications.
- Significant additive as well as dominant gene action for all the characters in both the generations except plant height and seed yield / plant in F₁ and seed yield/plant in F₂ generation was observed.
- The cross Rohini x RLM-198 was adjudged as good specific combiner in both the generations and the maximum heterosis over standard check was observed in cross Rohini x RLM-198 for seed yield / plant.
- In F₁ generation, high heritability estimates were observed for plant height, siliquae/ plant and in F₂ generation, high heritability was observed for plant height, seeds / siliqua and secondary branches.
- Seed yield/ plant was positively and significantly associated with days to maturity, seeds/ siliqua and biological yield/ plant.

NEWS IN BRIEF

New batch of trainees joined for project/ dissertation work

A new batch of 13 post graduate students from Bundelkhand University, Jhansi; JNU, Jaipur; RBS College, Agra; SGV University, Jaipur and MJRP University, Jaipur joined DRMR for 6 months dissertation work in the discipline of Microbiology, Biotechnology and Seed Technology starting from Jan 2011.

Republic Day celebration

DRMR celebrated the 62nd Republic Day on Jan 26, 2011 with great fervour and gaiety. Dr. J. S. Chauhan, Director hoisted the national flag on this auspicious and historic day and extended good wishes to all for their happiness, prosperity and success. He also gave away the prizes to the winners of Annual Sports Meet.

Construction of vertical extension of Type IV quarters inaugurated

Dr. C. D. Mayee, Chairman, ASRB, New Delhi inaugurated the construction of vertical extension (II floor) of



Type IV quarters at the DRMR Campus on Feb 1, 2011 in the presence of Prof. S. K. Datta, DDG (CS), ICAR, New Delhi, Dr. J. S. Chauhan, Director and all the scientists and staff of the Directorate. Later, Dr. Mayee and Prof. Datta visited the experimental fields/ laboratories and interacted with the scientists and provided valuable suggestions.

National Science Day celebrated

DRMR organized National Science Day on Feb 28, 2011 in which all the scientists actively participated under the Chairmanship of Dr. J. S. Chauhan, Director. On the important issues like genesis of National Science Day celebration, challenges of climate change, food, nutrition and livelihood security and use of frontier sciences for advancement in rapeseed-mustard the scientists expressed free and frank opinion and pledged to serve the society by making useful contribution in their area of work.



All India coordinated programme monitored

Five multi-disciplinary teams monitored different coordinated trials laid out at 17 centres under AICRP-RM during Feb-March 2011. The team consisted of Plant breeders, Agronomist, Pathologists, Entomologists and Agric Extensionists chosen from DRMR, Bharatpur and AICRP-RM Centres monitored the coordinated trials, breeder seed production, frontline demonstrations etc., and reported centre wise overall performance of the trials to the PC at DRMR.

Samaj Sadan organized several functions

Samaj Sadan organized Nav Varsh Sneh Milan on Jan 1, 2011 and Holi Milan Samaroh on Mar 19, 2011. All the members of Sarson family participated in these programmes. Children performed graceful cultural programmes. The President, Samaj Sadan addressed the members and distributed prizes to the participants of cultural programmes. On May 30, 2011, it organized farewell party for Dr. S. S. Meena, Senior Scientist (Plant Breeding) and Sh. Kanta Prasad, Assistant, who left DRMR on selection and also welcomed Sh. K. S. Tanwar as Finance and Accounts Officer at DRMR.



Samaj Sadan gets new executives

New executive committee of Samaj sadan was elected by the General body for the year 2011-13. The members of the new executive committee are Dr. J. S. Chauhan (President), Dr. Y. P. Singh (Vice-president), Dr. S. S. Meena (General Secretary), Dr. Manjubala (Joint Secretary), Mrs. Priyamedha (Cultural & Literary Secretary), Sh. Bachhu Singh (Sports Secretary) and Sh. Kanta Prasad (Treasurer).

Participatory seed production programme

Under the participatory seed production programme, DRMR produced 150 q seeds of mustard variety NRCDR 2 were produced at the Madhuri Kund Farm of Veterinary University, Mathura. Another 40 q seeds of variety Rohini was also produced at the farmer's fields.



TRANSFER OF TECHNOLOGY

Radio educational series completed

DRMR completed 6 radio educational series of 124 episodes on rapeseed-mustard research and development programmes and improved package of practices from six radio stations viz., Jaipur, Kota, Agra, Mathura, Nazibabad and Rampur for the benefit of thousands of farmers of Rajasthan, Uttar Pradesh and Uttarakhand. Broadcast of 47 episodes were made since Jan 2011.

NRCHB 101 and NRCDR 2 demonstrated at farmers' fields

Under the aegis of AICRP-RM, 18 frontline demonstrations were laid out in Gadoli, Lulhara and Nagla Chahar villages of Bharatpur district of Rajasthan and Nagla Vishnu village of Agra district of UP on the varietal component of Indian mustard with NRCDR 2 and NRCHB 101 varieties. The variety NRCDR 2 had an average yield of 2470 kg/ha, a yield improvement of about 4.75% over the farmers' variety and av. additional net monetary return (ANMR) of Rs. 2884/ha, while NRCHB 101 had an average yield of 2520 kg/ha, a yield improvement of about 7.23% over the farmers' variety and ANMR of Rs. 4475/ha.



Participatory validation of DRMR's technology package for Indian mustard

Twenty demonstrations on DRMR's technology package for Indian mustard with NRCDR 2 were laid out in Paharsar, Andhiyari, Aau and Gadoli villages of Bharatpur district during the rabi 2010-11. The demonstrations drew the attention of the farmers due to profuse branching and vigorous growth of the variety with the associated technology package. DRMR's package under irrigated condition with NRCDR 2 variety had an average yield of 2625 kg/ha (15 locations) and average yield improvement of 15.9% was recorded over the farmers package. DRMR's package under rainfed condition with

NRCDR 2 variety had an average yield of 2175 kg/ha (5 locations) and av. yield improvement of 20.1% was recorded over the farmers package.

Kisan diwas organized

DRMR organized 5 *Kisan Diwas* on 63 demonstrations of mustard, wheat, carrot and onion laid out in collaboration with IARI, New Delhi and RBS College, Bichpuri (Agra) in Rajasthan and Uttar Pradesh in which 250 farmers and farmwomen were educated. One *Kisan Diwas* was organized on mustard demonstrations (cv. NRCHB 101 and NRCDR 2) at Nagla Vishnu, Kheragarh tehsil, Agra district (UP) on Mar 5, 2011 in collaboration with RBS College, Bichpuri (Agra). Dr. J. S. Chauhan, Director, DRMR counselled the farmers on green manuring, organic manures, use of sulphur, certified seeds of high yielding varieties, participatory seed production programme and the seed village concept and stressed for strengthening collaboration of concerned agencies for all round development. Dr. T. R. Chauhan, Principal, RBS College, Bichpuri (Agra) advised the farmers to attend the training and other programmes at the Krishi Vigyan Kendra of the college. Several other experts from both the organizations also counselled the farmers in their respective areas.



Bharatpur farmers visited Pusa Krishi Vigyan Mela, New Delhi

29 progressive farmers and 16 farmwomen from 5 villages of Bharatpur district actively participated in the Pusa Krishi Vigyan Mela at IARI, New Delhi during Mar 3-5, 2011. They were greatly benefitted to learn useful technologies demonstrated/exhibited in the Mela. DRMR facilitated their visit and Sh. Ramesh Yadav, a progressive farmer from DRMR-IARI adopted village Paharsar (Bharatpur) was also felicitated on the occasion for his innovative approaches to farming.

Visitors' advisory services rendered

30 groups of 1015 stakeholders including 840 farmers, 100 farmwomen, 50 extension personnel and 25 students coming from 7 districts of Rajasthan (Tonk, Pali, Nagaur,



Jaipur, Bharatpur, Karoli and Sawai Madhopur), 6 districts of Uttar Pradesh (Mathura, Agra, Jhansi, Bareilly, Mahamayanagar and Firozabad) and Tikamgarh district of Madhya Pradesh were attended under visitors' advisor service during Jan-June, 2011.

SAC-DRMR forecast 7.33 mt rapeseed-mustard production in 2010-11

As an outcome of a collaborative project of Space Application Centre (SAC), Ahmedabad and DRMR, Bharatpur under Forecasting Agricultural output using Space Agricultural meteorology and Land based observations (FASAL) programme of the Ministry of Agriculture, Govt. of India, final forecast of national rapeseed-mustard production for 2010-11 was made on Jan 31, 2011. About 7.33 million tonnes rapeseed-mustard would be produced in the country from 6.12 million hectares area with an overall increase of 6.3% and 18.1% in mustard acreage and production, respectively. Rajasthan showed significant increase of 23% and 33% while Uttar Pradesh showed decrease of 28% and 22% in acreage and production respectively over that of 2009-10.

DISTINGUISHED VISITORS

Name	Designation & address	Date
Dr. C D Mayee	Chairman, ASRB, New Delhi	Feb 1, 2011
Prof. S K Datta	Deputy Director General (Crop Science), ICAR, New Delhi	Feb 1, 2011
Dr. A P Singh	Deputy Commissioner (TMOP), DAC, Min of Agric, Govt of India	Feb 1, 2011
Dr. D P Singh	Chairman, RAC and Ex-Vice Chancellor, JNKVV, Jabalpur	Feb 16, 2011
Dr. P K Singh	Registrar, PPV&FR Authority, New Delhi	Feb 17, 2011
Dr. Deepak Pental	Ex-Vice Chancellor, University of Delhi, Delhi	Mar 8, 2011
Dr. D P Singh	Chairman RAC	
Dr. S E Pawar	Member, RAC	
Dr. M P Sahu	Member, RAC	Mar 13-14, 2011
Dr. K P Singh	Member, RAC	
Dr. S N Upadhyay	Member, RAC	
Dr. B B Singh	ADG (O & P), ICAR, New Delhi	
Sh. Ratan Singh	Hon'ble Member of Parliament, Bharatpur	Mar 14, 2011



HUMAN RESOURCE DEVELOPMENT

Training attended

Training	Venue/Dates	Trainees
Molecular Cytogenetics	PAU, Ludhiana Jan 15-25, 2011	Dr. A Kumar, Sr. Scientist
Biotechnological Approaches for Enhanced Production of Nutraceuticals in Fruits and Vegetables of Arid Zone	CIAH, Bikaner Feb 14-27, 2011	Dr. M Bala, Sr. Scientist
Employer's Perspective on Labour Related Laws	NAARM, Hyderabad Feb 17-19, 2011	Dr. S S Rathore, Sr. Scientist & Sh. J L Sharma, AAO
Record Management for Right to Information	ISTM, New Delhi Apr 18-21, 2011	Sh. K Prasad, Assistant
Rapid & Nondestructive Evaluation of Food Quality & Safety Factors using Spectroscopy & Bio-sensing Methods	CIPHET, Ludhiana May 6-19, 2011	Dr. N S Bhogal, Sr. Scientist
Molecular Breeding in Vegetable Crops May 23-June 5, 2011	IIVR, Varanasi	Dr. B K Singh, Scientist
Training Programme for Administrative Personnel	IIPA, New Delhi June 6-24, 2011	Sh. M Kumar, Assistant & Mrs. V Sharma, PA

Conference/Seminar/ Symposium/Meeting attended

Seminar/Meeting/ Workshop/Conference	Venue/Dates	Participants
Regional Workshop on Proposed Mission on Oilseeds and Oil Palm for 12 th Five Year Plan	Haryana Bhawan Chandigarh Jan 6, 2011	Drs S K Jha, Sr Scientist S S Rathore, Sr Scientist
Scientific Advisory Committee Meeting of KVK	KVK Bichpuri Agra Feb 3, 2011	Drs A K Sharma, Sr Scientist J Nanjundan, Sci & P Sharma Sr Scientist
National Symposium on Recent Advances in Plant Tissue Culture and Biotechnological Researches in India & 32 nd Annual Meet of Plant Tissue Culture Association (India)	MNIAS, Bikaner Feb 4-6, 2011	Dr (Mrs) M Bala, Sr Scientist
International Conference on Preparing Agriculture for Climate Change	PAU, Ludhiana Feb 6-7, 2011	Drs. J S Chauhan, Director S K Jha, Sr Scientist & J Nanjundan, Scientist
Brain Storming Meeting to Enhance Productivity of Rapeseed-Mustard in Zone V	RAU, Pusa, Bihar Feb 12, 2011	Drs. J S Chauhan, Director, BK Kandpal, Pr Sci, Y P Singh Pr Sci, V V Singh, Pr Sci, K H Singh, Sr Sci, PD Meena, Sr Sci & SS Meena, Sr Scientist
Annual Breeder Seed Review Meeting	NBPGR, New Delhi Feb 14, 2011	Dr. K H Singh Sr Scientist
Review Meeting for Conduct of DUS Test	NASC, New Delhi Feb 25, 2011	Dr. J S Chauhan, Director Dr. K H Singh, Sr Scientist
Division wise Interaction Meeting with Chairmen of RACs and Directors (Crop Science division)	ICAR, New Delhi Mar 1, 2011	Dr. J S Chauhan, Director
Meeting-cum-Workshop of Zonal Technology Management & Business Planning & Development North Zone-I	IARI, New Delhi Mar 17, 2011	Drs. KH Singh, Sr Scientist, SS Rathore, Sr Sci & J Nanjundan, Sci
National Symposium-cum-Brain Storming Workshop on Organic Agriculture	CSKHPV, Palampur Apr 19-20, 2011	Dr. O P Premi, Sr Scientist
National Seminar on Contemporary Approaches to Crop Improvement	UAS, GKVK, Bangalore Apr 22-23, 2011	Dr. J S Chauhan, Dr B Ram, Sr Sci & Mrs Priyamedha, Scientist
National symposium on Technological Interventions for Sustainable Agriculture	Hill Campus -GBPUA&T Ranichauri May 3-5, 2011	Dr. K H Singh, Sr Scientist

Seminar/Meeting/ Workshop/Conference	Venue/Dates	Participants from DRMR
Annual Workshop of KVKs (Zone IV)	GBPUA&T, Pantnagar May 13, 2011	Drs. V Kumar, Sci SS, A Kumar, Sr Scientist & B Ram, Sr Scientist
South Asia Conference on Current Approaches to the Environment Risk Assessment of Genetically Engineered Crops	BCIL, New Delhi May 16-18, 2011	Dr. A K Thakur, Scientist
Seminar on <i>Saghan Udhyan Ropan Takniki at Rastriya Krishi Vikash Yojana</i>	Bharatpur Mar 16-17, 2011	Dr. Y P Singh, Pr Scientist
Brain Storming Meeting to Enhance Productivity of Rapeseed-Mustard in Zone II & III of India and Review Meeting of Biochemistry & Plant Physiology Programme under AICRP-RM	GBPUA&T, Pantnagar May 17-18, 2011	Drs. J S Chauhan, Director, V V Singh, Pr Sci, KH Singh, Sr Sci, M Singh, Sr Sci, M Bala, Sr. Sci B K Singh, Sci & A K Thakur, Sci
20 th Hindi Sammelan and Karyashala	Mysore May 24-26, 2011	Dr. P Sharma, Sr Scientist
3 rd Nagar Rajbhasha Karyanvayan Samiti Meeting	PNB, Bharatpur May 30, 2011	Dr. P Sharma, Sr Scientist
13 th International Rapeseed Congress	Prague, Czech Republic June 27-28, 2011	Drs. J S Chauhan, Director & V V Singh, Pr. Scientist

13th International Rapeseed Congress held in Prague

The 13th International Rapeseed Congress (IRC) was organized by Groupe Consultatif International de Recherche Sur le Colza (GCIRC) at Prague Congress Centre, Prague, Czech Republic during June 5-9, 2011. The IRC is held every 4th year to review international trends in research, marketing and government policies. The IRC also aimed at identifying thrust areas; chalk out future strategies and action plan. Dr. W. Friedt of Germany chaired International Scientific Committee. Dr. Andre Pouzet, General Secretary of GCIRC opened the congress on June 6, 2011. There were about 831 participants from almost around the globe. 19 researchers from India participated in the Congress. Dr. Gerhard F.W. Rakow, a leading plant breeder from Germany and Dr. Emmer Sorenson of Denmark were awarded the prestigious GCIRC Eminent Scientist Award. The Congress was spread over three plenary sessions comprising 11 lecturers on genetics and breeding, *Brassica* genomics, disease control in oilseed rape, integrated management of diseases, technology innovation for 3rd generation biodiesel production, etc. There were 9 concurrent sessions having more than 150 oral presentations covering wide-ranging areas of rapeseed-mustard research. Presentation over 500 poster papers covering a spectrum of diverse rapeseed-mustard research areas was another significant highlight of the congress. Nine



research papers were orally presented from India in different sessions. Dr. Arvind Kumar, DDG (Education) from the ICAR head quarter, Dr. J.S. Chauhan, Director and Dr. V. V. Singh, Principal Scientist (Plant Breeding) from DRMR, Bharatpur participated in the Congress. Further, Dr. Dhiraj Singh and Dr. A.S. Rathi from CCSHAU, Hisar, Dr. P.B. Kirti, University of Hyderabad, Drs. P.S Sandhu, Sarawan Kumar, Chhaya Atri, Pushp Sharma, Gurpreet Kaur, A. S. Atwal and Harsh from PAU, Ludhiana were other participants besides scientists and official from private organizations and seed companies from India.

Directorate seminars held

Topic	Speaker	Date
Project Information Management System-ICAR	Mr. Sanjay Sharma, Technical Officer	Jan 13, 2011
Latest National and International Publications in Entomology	Dr. Y.P. Singh, Principal Scientist (Ag. Entomology)	Jan 22, 2011
Linkage Map in <i>Brassica carinata</i>	Ms. Priyamedha, Scientist (Pl. Breeding)	Feb 24, 2011
Development and Utilization of Molecular Markers in Trait Selection and Crop Improvement	Dr. S. S. Meena, Senior Scientist (Pl. Breeding)	Mar 10, 2011

Awards/ Recognition

- Dr. J. S. Chauhan, Director, DRMR was conferred Fellowship by Indian Society of Oilseeds, DOR, Hyderabad, Jan, 2011.
- Dr. Pankaj Sharma, Senior Scientist (Plant Pathology) was conferred SPPS Fellow Award 2011 by Society for Plant Protection Sciences, IARI, New Delhi, Feb 17, 2011 at Central Agricultural Research Institute, Port Blair.

Promotion/ Selection/ New Joining/Transfer

- Mr. Mukesh Kumar, Senior clerk promoted to the post of Assistant, DRMR, Bharatpur w.e.f. Jan 31, 2011
- Dr. D. C. Mishra, Scientist (Agricultural Statistics) transferred to IASRI New Delhi in the similar capacity w.e.f. Mar 23, 2011.



Dr. J. S. Chauhan



Dr. Pankaj Sharma



Mr. Mukesh Kumar



Dr. D. C. Mishra

- Mr. K. S. Tanwar, Assistant Finance & Accounts Officer, ZPD VI, Jodhpur joined DRMR, Bharatpur on Mar 24, 2011 as Finance & Accounts Officer
- Dr. V. V. Singh, Senior Scientist (Plant Breeding) joined as Principal Scientist (Plant Breeding) on selection by ASRB, New Delhi w.e.f. May 25, 2011
- Dr. S. S. Meena, Senior Scientist (Plant Breeding) relieved to join as Principal Scientist (Plant Breeding) at IGFR, Jhansi- Regional Centre, Avikanagar (Rajasthan) on selection by ASRB, New Delhi w.e.f. May 30, 2011
- Mr. Kanta Prasad, Assistant relieved to join ZPD IV, Kanpur on selection as Assistant Finance & Accounts Officer w.e.f. June 4, 2011

The DRMR family congratulates and wishes them a very rewarding future



Mr. K. S. Tanwar



Dr. V. V. Singh



Dr. S. S. Meena



Mr. Kanta Prasad

PUBLICATIONS

Research papers

- **Chattopadhyay C, R Agrawal, A Kumar, R L Meena, K Faujdar, N V K Chakravarthy, A Kumar, P Goyal, P D Meena and C Shekhar (2011).** Epidemiology and development of forecasting models for white rust of Brassica juncea in India. Archives of Phytopathology and Plant Protection 44 (8): 751-763.
- **Chauhan J S and S Kumar (2011).** Assessment of oil and seed meal quality parameters of rapeseed-mustard group of crops. Indian Journal of Agricultural Sciences 81(2): 140-144.
- **Chauhan J S, M L Meena and A Kumar (2011).** Estimation of heterosis and inbreeding depression for seed yield and its components in Indian mustard (*Brassica juncea* L.). J.Agricul. Res. & Technol. 36(1): 57-62.
- **Meena P D, C Chattopadhyay, S S Meena and A Kumar (2011).** Area under disease progress curve and apparent infection rate of Alternaria blight disease of Indian mustard (*Brassica juncea*) at different plant age. Archives of Phytopathology and Plant Protection 44 (7): 684 – 693.
- **Meena P D, R P Awasthi, S Godika, J C Gupta, A Kumar, P S Sandhu, P Sharma, P K Rai, Y P Singh, A S Rathi, R Prasad, D Rai and S J Kolte (2011).** Eco-friendly approaches managing major diseases of Indian mustard. World Applied Sciences Journal 12 (8): 1192-1195.
- **Meena P D, R P Awasthi, S Godika, J C Gupta, A Kumar, P S Sandhu, P Sharma, P K Rai, Y P Singh, A S Rathi, R Prasad, D Rai and S J Kolte (2011).** Eco-friendly approaches managing major diseases of Indian mustard. World Applied Sciences Journal 12 (8): 1192-1195.
- **Meena, P D, C Chattopadhyay, A Kumar, R P Awasthi, R Singh, S Kaur, L Thomas, P Goyal and R Chand (2011).** Comparative study on the effect of chemicals on Alternaria blight in Indian mustard – A multi-location study in India. J. Environ. Biol. 32: 375-379.
- **Rai P K, S A Siddiqui and V V Singh (2011).** DNA landmarks and meiotic chromosomes of interspecific hybrids in rapeseed-mustard. National Academy Science Letters 34 (1&2):15-22.
- **Sharma P, P K Rai, S A Siddiqui and J S Chauhan (2011).** First report of Fusarium wilt in the broomrape parasite growing on Brassica spp. in India. Plant Disease 95(1):75.
- **Sharma, P, P D Meena, P K Rai, S Kumar and S A Siddiqui (2011).** Evaluation of soil amendments, botanical and fungicide against Sclerotinia sclerotiorum causing stem rot of Indian mustard. Journal of Mycology and Plant Pathology 41(1): 151.
- **Singh K H, R K Mahawar, J S Chauhan and A Kumar (2011).** Extent of natural

out crossing in Indian mustard (*Brassica juncea* L. Czern & Coss). Cruciferae Newsletter 30: 55-57.

- **Singh V V, M Singh, J S Chauhan and S Kumar (2011).** Development and evaluation of full sib progenies for moisture stress conditions in Indian mustard. Indian J. Genet 71 (1): 78-81.
- **Singh V V, P K Rai, S A Siddiqui, V Verma and R Yadav (2011).** Genetic variability and relative drought tolerance in interspecific progenies of *Brassica juncea*. Agric. Biol. J. N. Am. 2(1): 34-41.

Popular article

- **Meena P D and Asha Rani (2011).** Rai sarson ke mukhya rog avum unka samekit prabandhan. Krishi Bharati Jan 2011: 4-6.

Technical bulletins

- **Chauhan J S and S K Jha-Eds. (2011).** DRMR VISION 2030. p.30. Directorate of Rapeseed-Mustard Research, Bharatpur 321303 Rajasthan.
- **Jha S K, J Nanjundan and O P Premi (Eds) (2011).** Sarson News, Vol 14(2):16. Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan.
- **Rai P K, V V Singh, A K Sharma and K Shekhawat (Eds.). (2011).** Annual Report 2010-11. p.67. Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan.
- **Singh V V, A K Sharma, K H Singh, S S Rathore and V Kumar (2011).** Rai Sarson ki Unnat Beej Utpadan Taknik, p.6. Sarson Anusandhan Nideshalay, Bharatpur, Rajasthan.
- **Singh V V, A K Sharma, K H Singh, S S Meena and S K Jha (2011).** Rai/Laha ke Beej Utpadan ke vibhinna parishthitiyon ke liye unnat prajatiyan, p.4. Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan.

Presentations in Seminars / Symposia/ Workshops

- **Chauhan J S and S K Jha (2011).** Present status and strategies for enhancing rapeseed-mustard production in India: a perspective. Pp.10. In 32nd All India Rabi Seminar on Oilseeds, Oils Trade & Industry. COOIT, New Delhi and MOPA, Jaipur. March 13, 2011.
- **Meena, S S, K S Brar, J S Chauhan, P D Meena, P S Sandhu, R P Awasthi, A S Rathi, A Kumar, J C Gupta and S J Kolte, (2011).** GGE Biplot analysis of Brassica genotypes for white rust disease severity under aided epiphytotic conditions in India. 13th International Rapeseed Congress, June 5-9, 2011, Czech Republic.

Rapeseed-Mustard Research: Perspectives for 12th Five Year Plan



For an estimated Indian population of about 1320 million, 21.12 million tones (mt) of edible oil will be required by the end of 12th five year plan in 2017 at an estimated per capita consumption of 16 kg edible oil/ person/ day. This demand has to be met by producing about 63.4 mt of total oilseeds, of which, about 20% has to be met by rapeseed-mustard equivalent to 12.7 mt. An all out effort is to be made to achieve this target for rapeseed-mustard production from the present level of 7.3 mt. Scope for area expansion is limited so increasing the level of productivity remains our priority.

We are in the process of preparing the 12th five year plan for DRMR and several meetings have been held in the recent past at ICAR, New Delhi, DRMR, Bharatpur, RAU, Pusa, Bihar and GBPUA&T, Pantnagar to finalize the researchable issues, strategies, programmes and institutional support needed for the enhancement of rapeseed-mustard productivity and production in the country. High temperature at seedling and terminal stage, drought, salinity, *Orobanche* root parasite, Sclerotinia rot, Alternaria blight, white rust, aphid and painted bug are the major concerns of the cultivators. Narrow genetic variability against prevalent biotic and abiotic stresses, low level of

heterosis, poor mobilization of biological resources from vegetative parts to seed, new emerging diseases and climate change are perceived to be the limiting productivity factors in rapeseed-mustard.

In response to these concerns, development of high yielding hybrids/varieties, yield stabilization, improving input use efficiency, reducing cost of production, integrated pest management, farm mechanization and value addition have been identified as important areas of research in the above cited deliberations. Strengthening of selected AICRP-RM centres by creating need based infrastructure would be required to support the envisaged objectives. Keeping the drought perspective in mind especially in Rajasthan and Haryana under changing climate, the improvement programme for taramira should get adequate attention. Changing the plant architecture of Indian mustard to improve harvest index, identification of QTLs for yield traits and their utilization, re-synthesis of *Brassica*, canola quality Indian mustard by using biotechnological tools and techniques such as embryo rescue and marker assisted breeding to expedite the breeding programmes are the other issues for crop improvement. In order to give greater thrusts, it has been envisaged to develop the major research programmes in a network project mode during 12th five year plan.

State wise strategies and programmes to enhance the area, production and productivity of rapeseed-mustard in rice fallows of Zone V comprising the states of eastern India have also been finalized for the 12th five year plan. Public-Private partnership for crop diversification, value addition, seed production, farmer participatory varietal selection, capacity building, market driven extension, feedback generation for research system and enhanced use of IT-based decision support systems for technology transfer would also be the focus of the 12th five year plan.

I call upon all the colleagues in AICRP as well as at DRMR to ponder over these issues and chalk out appropriate research strategies.

Contributions are invited for a special issue of Sarson News for July 2011-March 2012. This change has been done in conformity with the decision of the Council to follow the April-September and October-March as two six-month reporting periods instead of the existing periods of January-June and July-December. The Sarson News intends to highlight only the latest and most salient research findings, developments and achievements related to rapeseed-mustard. Full paper, short note, etc. will not be entertained. Suggestions to improve the Newsletter are welcome.

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