PULSES Newsletter

Indian Institute of Pulses Research, Kanpur

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RAC Stressed on Yield Breakthrough in Pulses

The XI meeting of the Research Advisory Committee of the Institute was held on February 1-2, 2007 under the Chairmanship of Dr. V.M. Pawar, Former Vice-Chancellor of Marathwada Agricultural University, Parbhani which was attended by the members *viz.*, Dr. V.D. Patil, ADG (O&P) ICAR; Dr. Seema Wahab, Advisor to DBT; Dr. A.L. Khurana, Ex. Professor and Head, Deptt. of Microbiology, CCS HAU, Hisar; Shri S.B. Patil, Shri Ramesh Dubey, Dr. Masood Ali, Director, IIPR; and Dr. Shiv Kumar, Member Secretary. Dr. Masood Ali apprised the house about R&D activities carried out by the Institute during the period and major research achievements. Dr. Shiv Kumar presented the Action Taken Report of the X RAC meeting which was found satisfactory. All Heads of the Divisions and Sectional In-Charges presented major research programmes to be undertaken during the XI Plan (2007-2012). The Chairman appreciated the work being carried out by the Institute and called upon the scientists to take up advanced research for major yield breakthrough in pulses. Dr. V.D. Patil emphasized that IIPR should focus on basic and strategic research on pulse crops to tackle the problems of national importance. He also expressed his concern for low genetic yield potential of the current varieties which need to be upgraded through widening the genetic base of the cultivated germplasm. Dr. Seema Wahab opined that *Aspergillus* is an opportunistic fungus, and therefore, should be discouraged as bio-control agent in controlling nematodes and other insect pests. She also suggested that new initiatives should be taken up to use nanotechnology in agriculture. Dr. A.L. Khurana emphasized on the use of mixed culture for better results and suggested that high nodulating lines should be used in breeding programmes for enhancing genetic capacity of the plant for nodulation.


Research Advisory Committee Meeting
1 - 2 February, 2007

Institute Management Committee

The 24th meeting of Institute Management Committee was held on January 31, 2007 under the chairmanship of Dr. Masood Ali, Director. The meeting was attended by Dr. R.P. Katiyar, Director (Research), CSAUA&T, Kanpur; Dr. R.P. Dua, Project Coordinator, AICRP on Under Utilized Crops, NBPGR, New Delhi; Dr. S.N. Sinha, Head, IARI Regional Station, Karnal; Shri Shiv Kumar, Finance and Accounts Officer, IISR, Lucknow and one non-official member Shri Subhash Baburao Patil of Distt. Nanded (M.S.) besides AO and F&AO, IIPR. Project Coordinators, Heads of Divisions and In-charge of the Sections were also invited. The Committee reviewed the progress of the Institute and applauded the achievements in R&D.

Special Mission for Pulses

Realizing that non-availability of quality seed is the major constraint in enhancing pulses production, the Hon'ble Minister of Finance, GoI, Shri P. Chidambaram has proposed for expansion of IIPR and strengthening of ISOPOM programme by involving private sector in seed production of improved varieties. The objective is to scale up the production of quality seeds. The Govt. will provide funds offering grant or concessional financing with a view to double the production of certified seeds in three years.

Meeting of Quinquennial Review Team at IIPR

The wrap-up meeting of QRT was held at IIPR during February 5-8, 2007 under the chairmanship of Dr. R.B. Deshmukh, Vice-Chancellor, MPKV, Rahuri (MS). Other members *viz.*, Dr. V.P. Singh, Ex-Director Research, CCS HAU, Hisar; Dr. M.V. Reddy, Ex. Principal Scientist, ARS, Lam; Dr. B.M. Jamdagni, Principal Scientist, AICRP Centre, Rahuri; Dr. Masood Ali, Director, IIPR and Dr. N.B. Singh, HoD, Crop Production, IIPR attended the meeting. The QRT reviewed the research and related activities of IIPR, centres of AICRP, Bharari and CSAUA&T, Kanpur. The team also reviewed the programmes undertaken by All India Coordinated Research Projects on Chickpea, Pigeonpea, MULLaRP and Arid-Legume during the period of 2001-05.

Chickpea Scientists' Meet

Chickpea Scientists' Meet was organized at ICRISAT, Patancheru on January 4-5, 2007 to share genetic resources, advance breeding lines and segregating populations of chickpea. The Meet was inaugurated by Dr. Dyno Keatings, DDG, ICRISAT and chaired by Dr. Masood Ali, Director, IIPR, Kanpur. Chickpea scientists of various disciplines from different parts of the country attended the Meet and visited experimental plots and laboratories and selected material of their interest to use in breeding programmes. Dr. Masood Ali, Director, IIPR and Dr. P.M Gaur, Principal Chickpea Breeder, ICRISAT highlighted various aspects on ICAR-ICRISAT collaboration.

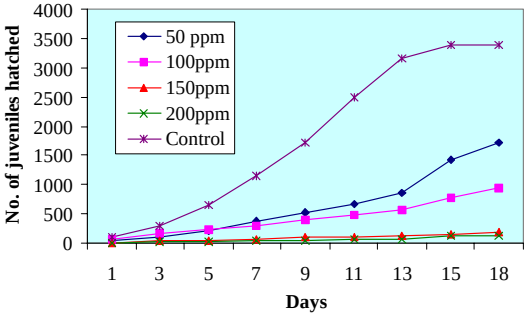
Review Meeting of NPTC

The final review meeting of 'Network Project on Transgenics in Crops', was held on 23-24 February, 2007 at NRC on Plant Biotechnology, New Delhi under the chairmanship of Dr. S.P. Tiwari, Deputy DG (CS & Edn.), ICAR. Dr. H.P. Singh, DDG (Hort.), Dr. R.K. Katiyar, Director NRCPB, Dr. N.K. Singh and Dr. K.C. Bansal, Network Coordinators were also present. The NPTC projects were started in September 2005 and there have been significant outputs from these projects in terms of generation of pest resistant transgenic lines and creation of practical molecular markers for application in breeding programmes. DDG expressed his happiness about the progress of work on chickpea genomics and transgenics from IIPR, and advised other centres to use the Fusarium wilt mapping population developed by IIPR. He also suggested that IIPR should take up the mapping population development for drought tolerance in chickpea.

Research Highlights

Sorghum Root Exudates Inhibit Egg Hatching of Root-Knot Nematode

Allelochemicals from sorghum root exudates were extracted and fractionally crystallized into different groups from polar to non-polar. Highly non-polar fraction was emulsified into suitable E.C. formulation and tested for its effect on egg hatching of root knot nematode, *Meloidogyne javanica* using different concentrations *viz.,* 50, 100, 150 and 200 ppm. Five egg masses were put in each petri dish. Egg hatching was recorded after 1, 3, 5, 7, 9, 11, 13, 15 and 18 days. All the concentrations were found effective in reducing egg hatching with linear correlation between concentration and egg hatching. The maximum reduction was observed with 200 ppm concentration. This shows that the sorghum root exudates possess some chemicals, which inhibit the egg hatching of root knot nematodes.



Bansa Singh and Lalit Kumar

Behavioral Change in *H. armigera* Larva

Helicoverpa armigera is a major pest of chickpea and pigeonpea causing heavy losses every year. Its five biological characteristics *i.e.*, polyphagy, high mobility, diapauses, seasonal cycle and high fecundity enable the insect to survive under adverse climatic conditions. Generally, it is observed that *H. armigera* larvae feed on the grains by inserting its head capsule inside the pod, while rest of its body hangs outside, and is thus exposed to various abiotic and biotic factors. However, in insecticide free field of *kabuli* chickpea (variety JGK 1) at IIPR, a sizable number of larvae (35) of *H. armigera* (3-4 instar) were found completely inside the pod, folding its body in "U" shape. Such affected pods had no grains and were full of excreta. This behavioral change is likely to protect the larvae from adverse climatic conditions such as temperature, humidity, sunshine, *etc.*, as well as from biotic factors *viz.,* parasites, predators and pathogens, ensuring its better survival. This poses another challenge to control the pest.

Hem Saxena

Raised Bed Planting Improves Productivity of Pulses

Pulse crops are sensitive to excess moisture and terminal drought. As 88% of the area under pulses is rainfed, efficient water management is crucial for their successful production. Viewing success of the raised bed planting in wheat in NWPZ, this technique was evaluated for excess moisture management in *kharif* pulses on alluvial soils at IIPR. Results revealed that pigeonpea at seedlings stage was least damaged (19%) due to excess moisture when grown on raised beds as compared to the flat bed (75-80%). At later stage also, the raised bed planted crop recorded significantly higher growth. Urdbean and mungbean planted on raised bed during *kharif* season also recorded significantly better growth than that planted on flat beds. In chickpea also, raised bed planting significantly increased branching, nodulation, and root growth as compared to the flat bed planting. Raised bed planting also recorded 30% saving of irrigation water and higher water use efficiency in chickpea, based on yield equivalence. Thus, raised bed planting technique seems to have great potential for efficient water management and higher yield in pulses.

S.C. Pramanik and N.B. Singh

February Rains Flared up Diseases in Pulse Crops

Rains in February are quite uncommon in Uttar Pradesh. Unprecedently, there were frequent rains in February, 2007 which led to sudden increase of many diseases of pulse crops in this state. Data recorded at IIPR observatory revealed that there were 3 rainy days in the 6th standard week (5-11 February) with 18.7 mm rainfall, 3 rainy days in the 7th week with 18.2 mm rainfall, one day rain in the 8th week with 0.1 mm rain and 2 rainy days in the 9th week with 5.1 mm rains. This weather change also reduced sunshine hours from 7.8 h/day in the 5th week to 4.2 h/day in the 6th week and 6.4 h/day in the 7th week. Average relative humidity which was 68.4% in the 5th week increased up to 80.4% in the 6th week and 76% in the 7th week. All these factors *viz*., cloudiness, leaf wetness, higher humidity, and high soil moisture during February suddenly flared up various diseases of pulse crops. Intensity of powdery mildew and rust in field pea increased from traces in the first week of February to more than 80% by the end of March. Similarly, intensity of fusarium wilt and root rot diseases flared up from less than 4% to 32% in lentil and 58% in chickpea during the same period. Another disease which showed higher intensity across the pulse crops was Alternaria leaf spot.

R.G. Chaudhary and R.K. Singh

First Record of Wireworm Infestation in Pigeonpea

During routine survey at IIPR, Kanpur, few plants of pigeonpea were noticed having stunted growth with weathering effects. On opening of the taproot of the plant, a soft white to yellowish coloured wireworm larva was seen boring upward. The larva was identified as *Agriotes* spp. belonging to family Elateridae, order Coleoptera. It is the first record of wireworm on pigeonpea from India. Many species of wireworm have been reported, which are biologically similar. Larval stage of the wireworm is the damaging stage. The wireworm migrates upward and downward in the soil depending on the soil moisture. It is often hard to find them in dry summer even in severely infested fields. The larvae pupate in the cells inside the ground in late summer. The adults remain in the soil until the following spring.

Bansa Singh, S.K. Singh and Hem Saxena

Group Meeting of Spring/summer Pulses

Annual Group Meet of spring/ summer pulses was held on 9-10 February, 2007 at IIPR, Kanpur. In the Inaugural session, Dr. B.B. Singh, PC (MULLaRP) highlighting the importance of spring/summer pulses said that area under these crops is increasing. Dr. Masood Ali, Director, IIPR and chairman of the session expressed his satisfaction over the performance of new varieties. He mentioned that mungbean after wheat is a good option and one can harvest more than 1.0 t/ha. New problems like leaf curl need to be looked into. He suggested that consumer preference for large seeded mungbean needs to be examined by the group. He advised that crop management has to play an important role. Intercropping of mungbean in sugarcane has to be promoted. He suggested that the produce of FLDs should be strictly used as seed. Later, the respective PI's presented the highlights of spring/ summer 2006 and the technical programme for 2007 was finalized.

Personnel

Retirements

Name	Post held	w.e.f.
Dr. S.N. Gurha	Principal Scientist (Plant Pathology)	31.3.2007
Mr. P.V. Eapachan	Finance & Accounts Officer	31.3.2007

Obituary

Shri Anant Ram, Technical Assistant left for his heavenly abode on 22.3.2007. The IIPR family consoles the bereaved family and pray for Peace of the departed Soul.

Training on Quality Seed Production

Under the Model Seed System(s) project, one-day training programme was conducted on 23 February 2007 for the farmers of five villages namely, Mauhar, Dadankheda, Alipur, Korsem and Pahur of Fatehpur district. Total 87 farmers attended the training. In the opening remarks, Dr. Masood Ali, Director, IIPR highlighted the importance of quality seed production of pulse crops. He emphasized that farmers must be aware of scientific seed production standards. A team of ten scientists from the Institute imparted training to the participating farmers on various aspects like crop management, disease and insect pest management and post-harvest management for quality seed production. Later, a joint diagnostic field visit with the farmers and scientists was also held that gave the scientists an opportunity to have first-hand comprehension of situation and problems in the standing chickpea crop.

Field Day-cum-Interaction Programme

Field day-cum-farmers interaction programme was organized on 8 March 2007 at Harsinghpur village in Malwan Block of Fatehpur district. Dr. Masood Ali, Director, IIPR, Dr. S.N. Nigam, Pricipal Scientist, ICRISAT, Hyderabad, scientists from the Institute and 103 farmers from six villages attended the programme. Dr. Ali in his opening remarks placed emphasis on community oriented farmers' participatory seed production programme for making village self-sufficient in quality seed availability. Dr. S.N. Nigam stressed that farmers ought to become seed traders and seed producers rather than simply a pulse grower and it is in this context that the Model Seed System project is intending to empower the pulse growers of the area. One of the participating farmers also highlighted the significance of pulse crops by composing and reciting a poem. Joint field visit was conducted in the farmers' fields of villages Mauhar and Dadankheda, wherein various problems occurring in the chickpea crop were identified and appropriate solutions were suggested.

Participation in Kisan Mela

IIPR participated in the three Kisan Melas organized by various institutions/Universities *viz*., Indian Institute of Vegetable Research, Varanasi during 27-28 January 2007; CSAUA&T, Kanpur during 25-27 February, 2007; and Seed Production Farm-cum-Krishi Vigyan Kendra, Sargatia, Kushinagar on 25 March 2007. In the above Kisan Melas, production technologies, varieties and other information useful for farmers were displayed and deliberated.

Transfer of Pulses Technology through AIR

A special programme "*Bhartiya Dalhan Anusandhan Sansthan – Kisano Ke Liye*" has been broadcast through AIR under sponsorship programme from 1 November 2006 to 28 March 2007. Total 22 episodes each of 30 minutes duration at weekly interval were broadcast on every Wednesday. Crop production, protection and post harvest management including storage and value addition technologies for all major pulse crops were broadcast for effective and quick dissemination of technologies. This approach has been appreciated by the Research Advisory Committee of the Institute.

Distinguished Visitors

Dr. Ashutosh Sarker, Senior Lentil Breeder from ICARDA, Syria and five-member Canadian delegation led by Prof. Bert Vendenberg from University of Saskachewan, Canada visited IIPR on 1-2 March, 2007. An effective linkage among Canada, Syria and India was proposed to initiate a tripartite collaborative programme on lentil. Canadian delegates emphasized on large seed size, green lentils, milling properties and consumer-oriented lentil breeding programme.

Dr. R.S. Malhotra, Senior Chickpea Breeder from ICARDA, Syria visited IIPR on 24-25 March to discuss and explore new areas of collaborations under ICAR-ICARDA joint programme. Major emphasis was given to address biotic and abiotic stresses involving combined resistance of wilt and ascochyta blight, cold and drought tolerance in both lentil and chickpea besides seed size for *kabuli*. Marker-assisted selection, varietal improvement, IPM and biofortification were some of the areas identified where ICAR and ICARDA can work together.

Dr. Tanveer Khan, Chickpea Programme Leader, Australia visited IIPR on 11 January, 2007 to discuss research programmes on fieldpea and chickpea. Dr. Masood Ali, Director, IIPR expressed his concern on the fast changing weather pattern of India and the unusual trend being experienced for the last several years. Both felt the need to modify breeding strategies to overcome the challenges. Dr. Khan visited Biotechnology lab of the Institute and discussed the progress of transformation and genomics. He emphasized on breeding fieldpea with leafy to semi-leafy plant types for rainfed conditions as it imparts more tolerance to drought.

Visit Abroad

Dr. Masood Ali, Director, IIPR visited Tunisia to participate in the Model Legumes Congress during 24-28 March 2007. The Congress was organized at Tunis by LILM and CBBC, Tunisia in collaboration with ICARDA and attended by more than 200 scientists representing 25 countries. The major focus of the Congress was on the present status of genome sequencing of model legumes, *Medicago truncatula* and *Lotus japonicus*. An international consortium is now sequencing the euchromatin of *M. truncatula* with a goal of completion in 2008. This also includes a gene expression atlas of its major organ system besides unearthing mutants by reverse genetics using TILLING. Dr. Ali also presented a paper on "Progress in chickpea and lentil improvement in India".

Dr. Shiv Kumar, Principal Scientist & Head, Crop Improvement Division was deputed to participate in the International Traveling Workshop on Lentil in Bangladesh jointly organized by ICARDA and BARI (Bangladesh Agricultural Research Institute) during 13-19 February 2007. The Workshop included two technical sessions, open discussion, visits to experimental fields of different research institutions of BARI and farmers' fields besides participation in field days organized at different villages in Bangladesh.

फरवरी में असामान्य वर्षा से दलहनी फसलों के रोगों में वृद्धि

उत्तर प्रदेश में प्रायः फरवरी माह में वर्षा नही होती है। इस वर्ष असामान्य रूप से फरवरी में वर्षा हुई, जिसके कारण दलहनी फसलों में लगने वाले रोगों में अचानक वृद्धि हो गयी। संस्थान की मौसम वेधशाला के आकड़ों के अनुसार 6वें मानक सप्ताह (5-11 फरवरी) में तीन दिन में 18.7 मि.मी., 7वें मानक सप्ताह में 3 दिन में 18.2 मि.मी., 8वें सप्ताह में एक दिन में 0.1 मि.मी. तथा 9वें मानक सप्ताह में 2 दिन में 5.1 मि.मी. वर्षा दर्ज की गयी। मौसम के इस बदलाव से धूप के घण्टों में भी कमी आयी जो 5वें मानक सप्ताह में 7.4 घं./दिन से घटकर 6वें सप्ताह में 4.2 घं./दिन तथा 7वें सप्ताह में 6.4 घं./दिन दर्ज किये गये। सापेक्ष आद्रता जो 5वें सप्ताह में 68.4 प्रतिशत थी बढ़कर 6वें सप्ताह में 80.4 प्रतिशत तथा 7वें सप्ताह में 76 प्रतिशत तक हो गयी। इन सभी कारकों यथा बदली युक्त आसमान, पत्तियों की नमी, बढ़ी हुई आद्रता और मृदा में उच्चस्तर की नमी के कारण दलहनी फसलों के विभिन्न रोगों में अप्रत्याशित वृद्धि हो गयी। मटर की फसल में चूर्णी कवक और रतुआ रोग जो फरवरी के प्रथम सप्ताह में नगण्य थे, मार्च के अन्त तक उनका प्रकोप 80 प्रतिशत तक हो गया। इसी प्रकार उकठा एवं जड़ विगलन रोगों का प्रकोप मसूर में 32 प्रतिशत तथा चना में 58 प्रतिशत तक इसी अवधि में बढ़ गया। पत्र बुन्दकी रोग का प्रकोप भी विभिन्न दलहनी फसलों में अत्यधिक पाया गया।

चना तथा मसूर में उकठा व मूल विगलन का जैविक प्रबन्धन- एक सफल प्रयोग

रबी दलहनी फसलों में चना एवं मसूर प्रमुख हैं। इनका अधिकतम क्षेत्र मध्य प्रदेश व उत्तर प्रदेश में मुख्यतः बुन्देलखण्ड क्षेत्र में है। चना एवं मसूर की फसल को मृदा व बीज जनित अनेक रोग प्रभावित करते हैं जिनमें उकठा तथा विभिन्न मूल विगलन प्रमुख हैं। इन रोगों के कारक जीवाणु संक्रमित खेतों की मृदा में संरक्षित रहकर अपनी वृद्धि करते रहते हैं और फसल के बुवाई के पश्चात् बीजों और पौधों को संक्रमित कर नष्ट कर देते हैं। इनके संक्रमण से फसल का जमाव असमान होता है और जमाव के पश्चात् पौधों के सूखने से उनकी संख्या कम हो जाती है और अंततः फसल का उत्पादन व उत्पादकता घट जाती है।

बुन्देलखण्ड का हमीरपुर जनपद चना व मसूर के उकठा व मूल विगलन रोगों से सर्वाधिक प्रभावित है। इसलिए इन रोगों के जैविक नियंत्रण के लिए इस जनपद के विदोखर गाँव का चयन किया गया। इस गाँव में चना व मसूर की खेती क्रमशः 646 व 102 हे. क्षेत्रफल में की जाती रही है। यहाँ के खेतों की मिट्टी काली चिकनी (मार) तथा चिकनी दोमट (काबर) है। यहां का वातावरण शुष्क, कम वर्षा युक्त और परिवर्तनशील है। तापमान 10 से 44° सेन्टीग्रेड के मध्य रहता है। वार्षिक वर्षा 700-110 मि.मी. मुख्यतः जुलाई, अगस्त, सितम्बर व अक्टूबर माह में होती है। फरवरी, मार्च व अप्रैल माह जिस समय चना और मसूर की फसलें पकती हैं अत्यधिक शुष्क होते हैं।

इन दोनों ही फसलों में उकठा तथा जड़ विगलन के प्रबन्धन हेतु रबी 2001-02, 2002-03 और 2003-04 में प्रयोग किये गये। परीक्षणों में बिना बीजोपचार, ट्राइकोडर्मा हार्जियानम पाउडर (6 ग्राम/कि.ग्रा.बीज) द्वारा बीजोपचार तथा कार्बोडजिम (1 ग्रा.)+थिरम (2 ग्रा.) द्वारा प्रति कि.ग्रा. बीजोपचार सम्मिलित किये गये। तीन वर्षों के परिणामों में पाया गया कि चना की रोग ग्राही प्रजाति पूसा 256 में ट्राइकोडर्मा द्वारा बीजोपचार से उकठा-जड़ विगलन में बिना उपचार की तुलना में सर्वाधिक 58.6 प्रतिशत की कमी आई और उपज में 28.9 प्रतिशत की वृद्धि प्राप्त हुई। जबकि कार्बेन्डाजिम + थिरम द्वारा बीजोपचार से 43.3 प्रतिशत की कमी रोग में व 18.8 प्रतिशत उपज में वृद्धि मिली। बिना उपचार वाले खेतों में उकठा व मूल विगलन 29.5 प्रतिशत था तथा सबसे कम उपज (880 कि. प्रति हे.) प्राप्त हुई।

इसी प्रकार का प्रभाव मसूर में भी देखा गया। रोग ग्राही स्थानीय प्रजाति में बिना बीजोपचार के 37.5 प्रतिशत उकठा व मूल विगलन का प्रकोप तथा न्यूनतम उपज (790 कि.ग्रा./हे.) प्राप्त हुई। जबकि ट्राइकोडर्मा द्वारा बीजोपचार से 53 प्रतिशत पौधे कम सूखे और उपज 970 कि.ग्रा./ हे. प्राप्त हुई। कार्बोन्डाजिम + थिरम से बीजोपचार कम प्रभावी रहा और उकठा मूल विगलन में 46.4 प्रतिशत कमी के साथ 15.8 प्रतिशत उपज में बढ़ोत्तरी पाई गई।

इस प्रकार बुन्देलखण्ड में तीन वर्षों के परिणामों से यह निष्कर्ष निकला कि रोगग्राही प्रजातियों में ट्राइकोडर्मा द्वारा 6 ग्रा./कि.ग्रा. बीज की दर से बीजोपचार कर चना व मसूर में उकठा तथा मूल विगलन का प्रबन्धन कर क्रमशः 28.9 व 26.5 प्रतिशत की उपज वृद्धि की जा सकती है।

रामगणेश चौधरी तथा सुशील कुमार सिंह

Director's Desk

Dear Readers

Seed is the main catalyst in converting technological development into granary. This has amply been demonstrated in crops like rice, wheat and other crops of irrigated areas. However, this has fallen short of expectation in case of pulses as these crops are mainly grown in rainfed areas by marginal farmers, and moreover, the formal and informal agencies involved in seed production do not find these crops much remunerative. As far as the national agricultural research system is concerned, it has the glory of developing more than 530 high yielding varieties of major pulse crops which have convincingly shown 15-35% yield advantage over local varieties in frontline demonstrations conducted across the country. Last year, the ICAR produced 6984 q breeder seed of 230 improved varieties of different pulse crops, 21% more than the DAC indent. However, the efforts have been still inadequate in meeting the seed requirement mainly due to poor conversion of breeder seeds into foundation and certified seeds, resulting in the poor availability of quality seeds. Presently, the total supply of quality seed of pulse varieties is around half of the present requirement of 13 lakh q, assuming 15% seed replacement rate.

This requires an aggressive plan and its implementation to enhance the seed production in the country. Recently, IIPR has demonstrated in the nearby district, Hamirpur that farmers participatory seed production programme can be an effective strategy not only in meeting the demand of quality seeds but also improving farm return. Therefore, there is a need to launch a farmer-based seed production and distribution system across the country involving different stakeholders. The intention should be to double the national seed production while making seed readily available to farmers by virtue of the decentralized approach. I am happy to note that the Budget 2007-08 has placed due emphasis on improving seed availability of pulse varieties which is recognized as one of the major constraints in enhancing pulses production. For the first time, inadequate production and availability of quality seeds of pulse varieties have attracted attention at the highest level. The Hon'ble Minister of Finance, Mr. P. Chidambaram proposes Special Mission for Pulses in his budget speech. This envisages strengthening of ISOPOM involving private seed sector and other agencies in seed production, and expansion of IIPR. The Government will provide funds for offering grant and concessional financing with a view to double the production of seeds in three years. The very purpose of this programme is to improve access of farmers to quality seeds of improved varieties of pulses. This will eventually enhance capacity of the seed agencies to produce more certified seeds of newly released and existing popular varieties. I hope enhancing the availability of quality seeds will prove a milestone in exhibiting impact of improved technologies developed by the system for improving livelihood of resource poor farmers.

(Masood Ali)

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