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NARC NEWSLETTER

कृषि मूलश्च जीवनम्

( )

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Silver Jubilee of NARC-ICRISAT Partnership Celebrated

A special program on completion of 25 years of partnership between Nepal Agricultural Research Council (NARC) and International Crop Research Institute for Semi-Arid Tropics (ICRISAT) was organized at Hotel Soaltee, Crowne Plaza, Kathmandu on 18 May 2002.

The function was officially inaugurated by the then Hon'ble Minister for Agriculture and Cooperatives, Mr. Mahesh Acharya in a special session that was attended by Hon'ble Minister of State for Agriculture and Cooperatives, Mr.Laxman Prasad Mehata, the then Act. Secretary of the Ministry, Dr. Surendra Kumar Shrestha; Director General of the ICRISAT, Dr. William D. Dar; Additional Director General of FAO, Asia-Pacific, Dr. R.B.Singh; Acting Executive Director of NARC, Mr. R.P.Sapkota; Scientists from NARC and ICRISAT and Jurnalists.

Photo: Rajendra Bajracharya

The then Hon'ble Minister for Agriculture releasing NARC-ICRISAT partnership document

During the occasion, NARC and ICRISAT jointly presented recognition to Chief-guest and Guests; farmers, NGO and Scientists from International Agricultural Research center, ICRISAT presented recognition to NARC scientists and NARC presented to

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11th NARC Annual Day Observed

Eleventh Annual Day of the NARC establishment as an autonomous organization was observed with a special function held at NARC Building, Singh Durbar Plaza, Kathmandu on May 8, 2002.

Inauguration

The function was inaugurated by the then Hon'ble Minister for Agriculture and Cooperatives Mr. Mahesh Acharya as the Chief Guest to the function. Minister of State for Agriculture and Cooperatives, Mr.

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Rice Varieties for Kathmandu Valley Released

Variety Release and Registration Sub-committee under National Seed Board that met on 9 April formally released two new rice varieties along with a complete package of practices for Kathmandu valley and similar condition.

The two varieties: "Manjushree-2" and "Khumal-11" are the two locally crossbred varieties developed after many years' research by Rice Breeding Unit of Agriculture Botany Division under Nepal Agricultural Research

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ISSUE HIGHLIGHTS

Nepal Agricultural Research Council (NARC) is an apex body for agricultural research in the country with the goal of poverty alleviation with sustainable growth of agriculture production through development of appropriate technologies in different aspects of agriculture

ADB Project Review and Workplan Meeting

The Review and Workplan Meeting on ADB Project: Nepal sites was held on 17-18 April 2002 in Kathmandu.

In the meeting, site coordinators presented reports and technical reporting from disciplines and commodity research were also held. After review and discussions, the meeting worked out for developing plans for the project and project sites.

Currently, the projects have been launched at three different sites: Naldung, Parwanipur, and Bhairahawa. Resource conserving technology, crop diversification, disease management, participatory approach are major thrust of the project.

At the opening of the meeting Mr. R.P. Sapkota, Acting Executive Director; Dr. Peter Hobbs, Regional Representative of CIMMYT; Dr. Raj Gupta, Rice-Wheat System Facilitator; Mr. D.S. Pathick, Director, Crops and Horticulture Research expressed their views on the project and its achievements.

SRI and Boro Rice meetings

Separate meetings, to review and discuss on the activities and findings/ achievements of the research conducted by the Nepalese Scientists/Researchers and make further plans on System of Rice Intensification (SRI) and Boro Rice, were held on 15-16 April 2002 at NARC, Ramshahpath, Kathmandu.

SRI is a system being promoted by some rice researchers and has been looked at different sites in Nepal. The system involves modified agronomic practices on seeding, transplanting, irrigation, weeding etc. The SRI is being managed at different areas and is being extended to other areas.

Boro is the system for rice production that gives Nepali farmers a winter season rice crop that has tremendous potential for increasing production especially in the terai.

National Consultative Workshop on Implementation of NARC Vision

A National Consultative Workshop on Implementation of NARC Vision 2021 was held in Kathmandu on 26th June 2002.

The workshop had the objectives:

- to brief key stakeholders and members of the vision implementation plan (VIP), working group (WG) on details of the NARC vision 2021 document
- to brief key stakeholders and VIP WG members on proposed processes and terms of reference for the working groups
- To review the draft activity plan for vision implementation
- To develop WG workplan and budgets for the period July-December 2002

The NARC Vision 2021 was released earlier in this year that incorporates the theme of Agriculture Perspective Plan (APP), national agricultural policies and experiences with the institutional development of agricultural research in Nepal. The major objective of the Vision is to provide guideline for integrated management of the research on agriculture and related natural resources as per national needs and priorities.

In a bid to implement the Vision, a Task Force was earlier formed that has prepared a draft activity Plan. Four different Working Groups: Human Resource; Core Function and Physical Resource; Funding and; Legislation have also been formed and terms of reference (TOR) for each group has been drafted.

In the one-day national workshop discussion on issues relating to Vision implementation was held in different ten discussion groups that presented groups' finding with focus on key issues and workplan for the Vision Implementation Working Groups.

NARC-ICRISAT Workplan 2002-2005

Under the terms of MoU signed in 1987 for collaborative research and development in legumes and as a follow-up of earlier actions and activities, a work-plan was signed by NARC and ICRISAT on 18th May 2002.

The Workplan was developed by NARC and ICRISAT staff in the NARC/ICRISAT Review and Workplan meeting on 17-18 April 2002 in Kathmandu participated by staff from NARC, Department of Agriculture, Secondary Crop Development Project, Grain Legumes Research Program, Oilseed Research Program, and other cooperative institutes, International Maize and Wheat Improvement Center (CIMMYT), International Rice Research Institute (IRRI), Rice-Wheat Consortium (RWC), International Potato Center (CIP).

The Workplan outlines the basic areas of collaboration for three years 2002-2005. This indicates the collaborative activities that include administrative and financial responsibilities; research priorities on chickpea, pigeonpea and groundnut; germplasm exchange; training and human resource development, workshops, meetings, farmers' day, visits, exchange of information and literature.

Long-term research areas for collaboration on chickpea, pigeonpea and groundnut include development and identification of suitable cultivars; development of appropriate management practices to minimize diseases, IPM technology in farmers' field; seed production; crop diversification for the sustainability of Rice-Wheat cropping system; germplasm exchange; human resource development and capacity building; information exchange etc.

The workplan will form an integral part of the overall chickpea, pigeonpea and groundnut research programs of Nepal.

Contd. from page 1 (NARC-ICRISAT)

ICRISAT scientists involved in research on ICRISAT mandated crops (chickpea pigeonpea and groundnut).

Director General of ICRISAT and Acting Executive Director of NARC signed NARC-ICRISAT Strengthening and Capacity Building Work-plan (2002-2005).

Partnership between NARC and ICRISAT was initiated in the late 1970 with the exchange of chickpea, pigeonpea and groundnut germplasm and a memorandum of understanding (MoU) between His Majesty's Government of Nepal and ICRISAT was signed on 24 December 1987. Research and development activities with emphasis on the transfer of technology were started in 1987. The NARC-ICRISAT partnership projects in Nepal involve: genetic resource collection, conservation , evaluation and exchange; intensification of legume-based production systems with emphasis on improving biotic and abiotic stress tolerance and adaption, collaborative genetic enhancement to provide improved varieties to farmers; farmer participatory research and development with emphasis on crop diversification and intensification, resource conservation and impacts on rural livelihood.

FAO Regional Conference

Twenty sixth FAO Regional Conference for the Asia and the Pacific was held in Kathmandu, Nepal on 13-17 May 2002.

On the first three days, senior government officials' meeting was held that was participated by senior government officials from 40 different Asian countries. On the last two days, 26th FAO Regional Ministerial Meeting was held. Agriculture Ministers from 16 countries along with 176 delegates from the region attended the meeting. Agriculture Ministers and Officials from various countries presented country statement on the status of and programs on food security of the country.

Contd. from page 1 (Rice Varieties)

Council (NARC) and farmers' field at different places in the valley.

"Manjushree-2" is found to be resistant to blast and lodging and has yield potential of 10 metric tonnes/ha. under the recommended condition. Crop maturity period is 149 days.

"Khumal-11" is also resistant to blast disease and has yield potential of 8.6 metric tones/ha. The crop is ready for harvest in 144 days.

These two varieties have been expected to come out better to substitute the existing popular varieties "Taichung-176", "Chinung-242" and "Khumal-4" that suffered the disease and lodging in the last some years.

The new varieties give higher yields, more straw and higher milling recovery.

Workshop on Fingermillet

A project inception meeting/workshop of IFAD–NUS project, "Enhancing the Contribution of Nutritious but Neglected Crops to Food Security and to Incomes of Rural Poor" was held in Kathmandu during May 2-3, 2002

The major objective of the two-day workshop was to share the experiences among stake holders, identify the project site as well as partners and finalize the activities of the Nepal component of the project.

Fingermillet is the important crop in the hills of Nepal. Most of the area under mid hills belongs to maize/millet relay production system. The crop is more important in subsistence farming system of inaccessible area where it is grown without external input in marginal land. Because of long duration storability this crop has paramount significance on the food security of poor people. Thus finger millet has significant role to sustain hill agriculture system and is a staple food of poor people.

Fingermillet is very rich in calcium, minerals and phosphorus as compared to cereals. It is a good source of limiting amino acids like lysine and methionine and rich in vitamins like thiamine, riboflavin, and niacin. Thus finger millet is a natural gift to poor for their nutritional security, as they cannot afford to buy expensive fruits and livestock products. But, it is still a neglected crop and considered as low status food.

Considering the importance of this crop on food and nutritional security to the poor there is a need to give more thrust on its research and development oriented work. Realizing its significance, donors communities are taking interest to promote the fingermillet in Nepal. With the generous financial support provided by the International Fund for Agricultural Development (IFAD), Rome and International Plant Genetic Resources Institute (IPGRI), Rome; Nepal Agricultural Research Council (NARC) is starting a project on "Enhancing the contribution of Nutritious but Neglected crops to Food Security and to Incomes of Rural Poor": Nepal Component Fingermillet, in coordination with MS Swaminathan Research Foundation. The main objective of the Nepal component of the project is to utilize the potentiality of fingermillet genetic resources through development oriented research, which contributes to raise the incomes and strengthen the food security of small farmers.

In the inception workshop/meeting, papers were presented and discussed on various aspects and present status of finger millet in Nepal including Millet improvement and production, value addition, processing, utilization, marketing and policy issues. Participants were actively involved in finalizing the individual activity and select the project sites.

Dr. S. Apparao, MS Swaminathan Research Foundation; Dr. S Podulosi, Global Coordinator IPGRI; Dr. Bhag Mal of IFAD-NUS Project, IPGRI Office, South Asia; various Scientists and Researchers from IPGRI, NARC, LIBIRD, Department of Agriculture participated the workshop.

Isozyme Polymorphism in Barley Landraces

- *J Bajracharya, PR Tiwari, DM Shakya, BK Baniya, T Brown, MP Upadhyaya BR Sthapit, D Jarvis and BK Joshi*

Jumla is the ecosite with least intervention of modern technology and undeniably prone to food deficit. Barley is the major cereal crop of the exosite occupying 2.5 times more area than rice. This region is considered a Vavilonian centre of diversity for barley (Witcombe and Gilani, 1979). Four farmers' named varieties, *Chawali, Bhuwali, Lekali* and *Pawai* occupy a wide range of environments and are identified by the farmers on the basis of their morphological structure, cultural practices, preferred traits and use values in Jumla (Paudel et al., 1997). Landraces constitute a high degree of genetic variation and are the important genetic resource for crop improvement. To optimize and accelerate breeding process, it is essential to screen, evaluate and classify the existed genetic variability. This study has therefore been carried out to measure genetic variation and to evaluate the individual farmers' populations of barley landraces of Jumla with their significance for conservation and improvement.

Seed samples were collected from 17 sites of Talium and Kartikswami VDC, Jumla, Nepal. A total of 197 populations of barley farmers' varieties were collected from farmers' field in Jumla in 1998 and included Bonus, a modern variety as a check. Enzymes were extracted from fresh coleoptile of 7 days old seedlings grown in controlled condition of 20°C in darkness (GEVES, 1993). Five enzyme systems, peroxidase (*Prx*), esterase (*Est*), malate dehydrogenase (*Mdh*), isocitrate dehydrogenase (*Idh*) and 6phosphogluconate dehydrogenase (6*Pgd*) were assayed. Each band was considered as isozymic character and scored as 1 for presence and 0 for absence. Frequency of alleles per locus, per polymorphic locus, heterozygosity, percentage of polymorphic loci, gene diversity and coefficient of gene differentiation were calculated using Genestat. A total of 20 such characters including null bands were used as isozymic descriptors and based on these bands, zymograms and dendrogram were constructed.

All enzymes exhibited allelic variation at one or more enzyme loci and revealed 0 to 3 bands per locus. A total of 10 loci and 20 alleles for 5 enzyme systems were detected including a null allele except for the monomorphic and constant loci, *Prx3* and *Mdh1*. *Est* displayed a single zone of activity across the populations with two distinct alleles and a null allele. The locus exhibited 7 different allelic combinations for 194 populations of barley with different frequency of occurrence (Fig. 1). Two loci encoded as *Mdh1* and *Mdh2* were detected on gels stained for *Mdh* with one allele each. The fast moving allele *Mdh1* was found common and constant across the populations.

A total of 6 alleles (excluding null allele) were revealed in populations studied for *Prx* encoding 5 loci (Fig. 1). The most anodal locus encoded as *Prx1* was the polymorphic locus observed with two alleles and rest with only one allele. The electrophoretic variation was observed in the null allele associated with *Prx2*, *Prx4* and *Prx5*. All the loci except *Prx3* were found variant. Both *Idh* and *6Pgd* enzymes exhibited one zone of enzymatic activity into the anodal side of gels in all the populations. The average number of alleles per locus (A) ranged from 1.13 in *Pawai* to 1.39 in *Chawali* (Table 1 & 2). The average number of alleles per polymorphic locus (Ap) was 2 across the varieties except for *Lekali* (1.72). All landraces exhibited polymorphism ranging from 25% (*Pawai*) to 35.21% (*Chawali*) with moderate to high genetic diversity.

Table 1. Diversity index of isozyme traits in barley landraces, 1999†

Landraces	A	Ap	P	H
Chawali	1.39	2.05	35.21	0.1525
Bhuwali	1.36	2.01	33.02	0.1464
Lekali	1.34	1.72	29.43	0.1282
Pawai	1.13	2.00	25.00	0.1105
Bonus	1.00	0.00	0.00	0.0000
Mean	1.38	2.01	34.22	0.1490
SD	0.22	0.48	18.27	0.0824
Number	198	198	198	198

† A, Frequency of alleles/locus; Ap, Frequency of alleles/polymorphic locus; P, Percentage of polymorphic loci at 95%; H, Heterozygosity.

A high genetic diversity within populations (60.03%) was observed at *Prx1* with 26.64% total diversity among populations of 4 farmers' varieties (Table 2). *Est1*, *Prx5* and *Mdh2* were found to exhibit significantly high values for *Hs*, *Ht*, *Dst and Gst* and these could possibly be regarded as important loci in measuring extent and distribution of

(Contd.)

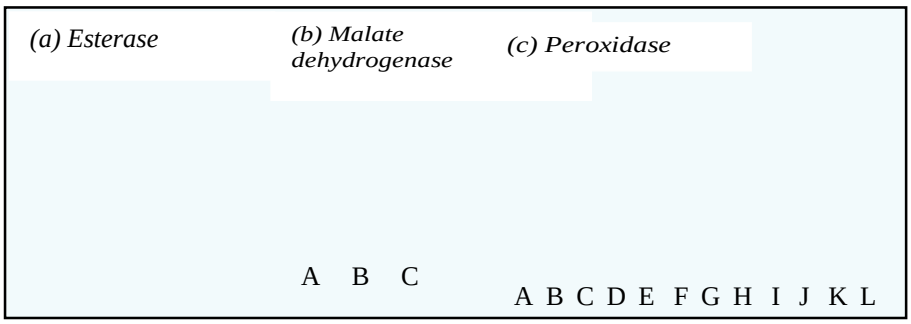

Fig.1. Zymograms observed in 197 barley populations for 3 enzyme systems

diversity and identifying these barley populations.

Table 2. Genetic differentiation of 197 populations of barley for 10 isozyme loci, 1999†

Locus	*Hs*	*Ht*	*Dst*	*Gst*
Prx1	0.6003	0.2664	0.3336	0.5471
Prx2	0.3808	0.1810	0.1998	0.4879
Prx3	0.0279	0.0196	0.0083	0.0352
Prx4	0.0536	0.0256	0.0148	0.0872
Prx5	0.4736	0.2496	0.2240	0.4502
Est1	0.5486	0.3259	0.2227	0.3841
Mdh1	0.0220	0.0052	0.0168	0.0398
Mdh2	0.3263	0.0398	0.2866	0.8325
Pgd1	0.2095	0.0861	0.1234	0.3693
Idh1	0.4885	0.1460	0.3425	0.6251
Mean	0.3131	0.1345	0.1773	0.3858
SD	0.1297	0.0861	0.1244	0.2235

† Hs, Genetic diversity within populations; Ht, Total genetic diversity; Dst, Genetic diversity between populations; Gst, Coefficients of gene differentiation.

All the resolved loci except *Mdh1* and *Prx3* were observed polymorphic and polymorphism was based on the multiallele and their combinations and a putative null allele associated with respective locus. *Est*, *Mdh* and *Prx* exhibited considerable high diversity values for most diversity parameters and hence could possibly be suggested to use in diversity studies of barley. In *Chawali* populations, some populations were found identical in allozyme with 100% similarity. The observed level of diversity in terms of dissimilarty and similarity in *Chawali* population could possibly be explained as a result of continuous domestication to changing environment, varied traditional practices of management and intensive exchange of seed of variety *Chawali* among the farmers and villages. On the contrary, the second group of populations of barley exhibited variation among each other with wide to narrow genetic distance. This suggests that the seed exchange of these varieties is limited and only few farmers grow in small area for specific reason. *Bhuwali*, *Lekali* and *Pawai* consisted genetic variation among populations and among farmers' named varieties. These populations were most heterogenous with complex isozyme types, hence could be valuable resource to conserve and utilize for barley improvement.

Acknowledgements

Work was supported by IPGRI through *in situ* global project.

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The Hill Maize Research Project: Objectives and Progress

Abstract

The Hill Maize Research Project (HMRP) was inintiated in 1999 with the goal of improving maize production and productivity in the hills of Nepal. An innovative process using GIS-based data from the Nepal Almanac Characterization Tool, extensive surveys of farmers and expert opinion was used to established research priorities for the project. Strategies for addressing these priorities were developed in working group and planning meetings. Extensive testing of exotic materials from CIMMYT has identified a number of promising new varieties and established collaborative research links. On-station and on-farm testing of varieties and crop management practices have expanded dramatically during the first three years of the project. Community-based seed production has been initiated to allow for the provision of seed of improved varieties in inaccessible areas. A broad range of training provided by HMRP has help to improve the efficiency of research. Linkages with other organizations enabled by the small-grants project have greatly increase the potential for disseminating promising new technologies.

Activities and achievements of the Project

The overall goal of the project is to increase incomes and food security of farm families in the hills of Nepal by raising the productivity and sustainability of maize-based cropping systems in the hills. To achieve this goal, the project has as its objectives: i) to develop and disseminate improved maize varieties specifically adapted to hill environments; ii) to develop and promote resource-conserving productivity-enhancing crop management practices for maize-based systems, appropriate to farmers' circumstances and compatible with existing cropping and livestock systems; iii) provide technology that will reduce crop losses due to drought, low fertility, diseases and pests (including post-harvest insects and ear rots) through focused breeding efforts and integrated pest management approaches (mainly host plant resistance); and (iv) to build sustained research capacity in the National Maize Research Program of NARC and in allied institutions and enhance the linkage between technology generation/verification and its delivery to farms, with special focus on the delivery of seed of improved varieties and promotion of management options in a participatory manner in farmers' fields.

The activities of the project can be broadly categorized as: i) identifying research priorities and establishing strategies for addressing these priorities, ii) developing and testing new technologies, iii) disseminating technologies, iv) and training. The significant outputs of these activities include: Identifying priorities and establishing strategies; Developing and testing new technologies; Disseminating technologies; Training and study for researchers.

- Joel K. Ransom, N. Rajbhandari; CIMMYT and K. Adhikari, NMRP, NARC

Farewell to Dr. Peter Hobbs

Dr. Peter R. Hobbs, after 14 years of his office in Nepal as Regional Representative of the South-Asia Regional Program of the Mexico based International Maize and Wheat Improvement Centre (CIMMYT), left Nepal on May 28, 2002.

Dr. Hobbs, a Cornell Doctorate, Wheat Agronomist, spent 30 years of the prime of his life in this Asian region working for the farming peoples to improve socio-economic status through new ideas and innovations in wheat and wheat-based cropping system in the region. The innovations have significant impact in Nepal. His outstanding contributions in the area of wheat research and development is highly recognized in Nepal.

Nepal Agricultural Research Council (NARC) held a farewell program in his honour on May 14, 2002. During the occasion Dr. Hobbs said the country should accord high priority to research in agriculture as it is crucial for its development and the research should be professional. Mr. R.P Sapkota, Executive Director and MR. S.B.Panday , Director, Planning and Coordination spoke about his contribution expressed gratitude for the cooperation.

EventsHeld

Workshop on Wheat Cropping System

Workshop on DFID Funded Project: Participatory Research to increase the productivity and sustainability of wheat cropping system in the Eastern Sub-continent of South-Asia was held on 1st May 2002 in Kathmandu.

DFID Project Workshop

Rice-Wheat : DFID End of Project Workshop was held on 7-10 May 2002 in Kathmandu.

NARDF Consultative Workshop

A Cnsultative Workshop on the National Agricultural Research and Developmet Fund (NARDF) was organized in Kathmandu on 29-30 April 2002.

Seminar on NARDF

A half-day seminar to discuss on the National Agricultural Research and Development Fund (NARDF) was organized by Society of Agricultural Scientists (SAS), Nepal at NARC, Khumaltar.

Forum of Agri-Journalists observed Anniversary

The Forum of Agricultural Journalistsobserved its first Anniversary at NARC, Singhdurbar Plaza, Kathmandu on 20 May 2002.. The then Hon'ble Minister for Agriculture and Cooperatives Mr. Mahesh Acharya attended the function

Delegates to FAO Regional Conference visited NARC

Some delegates to the FAO Regional Conference visited NARC at Khumaltar and Fisheries Research Division Godavary on 15 May 2001.

Upcoming Events

Workshop on Agriculture Research, Extension and Education in Nepal

Workshop on "An Effective Interface between Agriculture Research, Extension and Education in Nepal" is being organised jointly by NARC, DoA, DLS, IAAS and ACoS-Nepal on 27August 2002 at the NARC Conference Hall, Khumaltar It was planned by a Meeting of the Agriculture Concern Society-Nepal on 27 June. The Meeting was attended by Dr Tej Bahadur KC, Dean, Institute of Agriculture and Animal Science (IAAS); Mr RP Sapkota-Acting Executive Director, NARC; Mr BR Kaini, Director General, Department of Agriculture, Mr DR Pradhan, Deputy Director General Department of Livestock Services; Mr SB Panday, Director, Planning and Coordination, NARC; Mr BMS Basent, Chief, Communication, Publication and Documentation Division. NARC, Dr GP Ojha, Adviser, ACoS-Nepal; Dr RR Adhikari, Chairman, ACoS-Nepal; and Dr BK Dhital, General Secretary, ACoS-Nepal.

International Conference on Wild Rice

International Conference on Wild Rice is being held on 21-23 October, 2002 in Kathmandu, Nepal. The theme of the Conference is "Conservation and Utilization of Wild Rice for the food security of the world. The Conference is expected to assess: present status of the wild rice in nature; status of *in situ* conservation and utilization of wild rice in breeding; and the level of genetic research on wild rice. Scientific papers and posters will be presented in the conference. International and national advisory commitees have been formed. The Conference is being organized by Green Energy Mission (GEM), Nepal with support from IRRI; Ministriy of Agriculture and Cooperatives; Ministry of Forest and Soil Conservation; Ministry of Science and Technology; and NARC.

National Winter Crop Workshop

National Winter Winter Crop Research Workshop will be organized on 11-12 September at NARC< Khumaltar.

Geographic Information System Forum South Asia 2002

As a mark of International Year of Mountains 2002, the Geographic Information System Forum South Asia 2002 is being held in Kathmandu, Nepal from 11 to 15 November 2002. It is being coordinated by International Centre for Integrated Mountain Development (ICIMOD)

National Summer Crops Research Workshop

23rd National Summer Crops Research Workshop is being held on 2-3 July 2001 at NARC Khumaltar.

National Outreach Research Workshop

6th National Outreach Research Workshop is being organized at NARC, Khumaltar on 4 July 2002.

National Livestock Recearch Workshop

National Livestock Research Workshop is being held at Khumaltar on 9-10 july 2002.

TRAINING WORKSHOP/SEMINARS, STUDY & TOURS ABROAD

(April - June 2002)

S.N.	Name	Position/Faculty	Subject	Duration	Country
	SEMINAR/WORKSHOP/MEETING				
1.	Mr. Shambhu Bahadur Panday	Director /Planning	Pasture and Fodder Network	30 April- 4 May	Bhutan
2.	Mr. Dinesh Pariyar	S-4/Livestock	Pasture and Fodder Network	30 April- 4 May	Bhutan
3.	Dr. Surya Laxmi Maskey	S-4/Soil Science	Management of Soil Erosion Consortium 8th Steering Committee Meeting	2-3 May	Thailand
4.	Mr. Man Bahadur Shrestha	T-6/Food Tech.	Food Quality control	8-14 May	Taiwan
5.	Mr. Raghunath Prasad Sapkota	Executive Director	GFAR Meeting	11-17 May	Italy
6.	Mr. Shree Krishna Adhikari	Director/ Admin.	Sustainable Management of upland watersheds	16-17 May	Sri Lanka
7.	Mr. Dularchan Sahu Pathik	Director/Crop&Hort.	RWC–Socio Economic Planning Meeting	23-24 May	India
8.	Mr. Shambhu Bahadur Pandey	Director/Planning	RWC–Socio Economic Planning Meeting	23-24 May	India
9.	Mr. Hari Krishna Shrestha	S-3/Socio-economics	RWC–Socio Economic Planning Meeting	23-24 May	India
10.	Dr. Bhaba Prasad Tripathi	S-3/Soil science	International Soil Conservation Annual Meeting	26-31 May	China
11.	Mr. Ram Krishna Neupane	S-3/Agronomy	Workshop on Survey and Trials at ICRISAT	28 May-7 June	India
12.	Mr. Dipak Bhandari	S-3/Pathology	International Workshop on Wheat Disease	22-24 July	USA
	OBSERVATION				
13.	Mr. Bishwo Prakash Regmi	S-3/Agronomy	Observation tour to IARI and ICAR	14-20 April	India
14.	Mr. Bedananda Choudhary	S-3/Agronomy	Agro Rice research visit to BRRI	21-27 April	Bangladesh
15.	Mr. Tufail Akhtar	S-3/Agronomy	Rice research visit to BRRI	21-27 April	Bangladesh
16.	Dr. Ram Pratap Sah	S-4/Agronomy	Observation tour	16-24 June	India
17.	Dr. Bhaba Prasad Tripathi	S-3/Soil Science	Observation tour	16-24 June	India
18.	Mr. Govind Adhikari	S-3/Agronomy	Observation tour	16-24 June	India
19.	Dr. Dip Narayan Sah	S-3/Pathology	Observation tour	16-24 June	India
20.	Mr. Rishi Ram Upadhyaya	A-7/Finance	Observation tour	16-24 June	India
21.	Mr. Surya Bahadur Kunwar	A-6/Account	Observation tour	16-24 June	India
22.	Mr. Surya Mani Bhetwal	A-5/Account	Observation tour	16-24 June	India
23.	Mr. Khem Chetri	T-5/Computer Oper.	Observation tour	16-24 June	India
24.	Mr. Rishi Ram Adhikari	T-5/Computer Oper.	Observation tour	16-24 June	India
25.	Mr. Sova Kant Baral	T-5/Librarian	Observation tour	16-24 June	India
	TRAINING				
26.	Mr. MathuraYadav	T-6/ Agronomy	International Hybrid Rice Training Course	3Apr-16 July	China
27.	Ms. Sharada Joshi	S-3/ Pathology	Research study visit to ICARDA	14 April-13 May	Syria
28.	Dr. Dil Prasad Sherchand	S-4/Soil Science	Farmers innovations in shifting cultivation system	23-24 April	India
29.	Mr. Madan Gopal Shrestha	T-6/Economics	Modern Agricultural Management Training Course	23 April-22 June	China
30.	Mr. Janmejaya Tripathi	S-3/Agronomy	Bed Planting Training Course at CIMMYT	2 May -11 July	Mexico
31.	Mr. Ganesh Saha	S-3/Ag.Engg	Bed Planting Training Course at CIMMYT	2 May -11 July	Mexico
32.	Mr. Giridhari Subedi	S-3/Horticulture	Developing Sustainable Systems for small scale farming defining priorities for master research	24 June-7 July	Germany
	STUDY				
33.	Mrs. Renuka Shrestha	S-3/Agronomy	Ph.D.	3 May 2002 - 2 May 2005	Australia
34.	Mr. Dil Bahadur Gurung	S-3/Agronomy	Ph.D at U.P.L.B	6 June 2002 -5 June 2005	Philippines
35.	Mr. Mina Nath Paudel	S-3/Agronomy	Ph.D at U.P.L.B	6 June 2002 - 5 June 2005	Philippines

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Laxman Prasad Mehata Chaired the Function. The function was attended by chiefs/heads/officials of different institutions, NARC officials and employees.

Photo: Rajendra Bajracharya

The then Hon'ble Minister inaugurating the 11th NARC Day Function

Welcome address

The Acting Executive Director Mr. Raghunath Prasad Sapkota welcomed all the guests and participants in the function and talked about the achievements of the NARC and expressed commitment for further endeavor in making out research outputs to help farming people and the nation.

Remarks and directives

The Hon'ble Minister said that the achievements in agriculture have been remarkable but the challenge is even greater. The research and development has to cope up with the increasing demand of food in one hand and the need for boosting economic growth of the country. Certain pockets are well fed-up but the larger are undernourished he added. Extension of technologies is insufficient and inequitable, he remarked. Importance and relevance of agriculture research has been further increased in order to make our agriculture production more competitive in world market.

Hon'ble Minister of State for Agriculture and Cooperatives, Mr. Laxman Prasad Mehata, who chaired the function talked about the need of agriculture research for development. Secretary of Ministry of Agriculture and Cooperatives, Dr. Surendra Kumar Shrestha said the agriculture need to be diverted to commercial farming though commercialization in agriculture is difficult in Nepal due to geographic condition. Dr. Adarsha Pradhan on behalf of the awardees spoke on the need of strong system in agriculture research.

NARC Employees Honored

About Thirty-Five NARC Eployees having completed 25 years of their service were honored with Plaques and Certificates by Hon'ble Minister.

Press conference

Earlier on the eve of the 11th NARC Annual Day, a Press Conference was organized at NARC Building, Ramshahpath on 7 May 2002.

In the program Acting Executive Director Raghunath P. Sapkota briefed about works and achievements of NARC and impacts of the research in the field. He pointed out that NARC has recommended high yielding and location- specific varieties of different crops with total package of practices to farmers and the coverage of the recommended varieties in the farmers' field is large. The coverage of released and recommended varities of rice, maize and wheat in the Fiscal Year 2057/58 was 71, 67, and 90 percent of the total cultivated areas of the crops respectively.

During the interaction, Scientists from different discipline and Directors answered the questions raised by journalists. Forty journalists were present in the program.

Patron:
Raghunath Prasad Sapkota
Acting Executive Director

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