



A Quarterly Newsletter of Nepal Agricultural Research Council (NARC)

Vol. 18 No. 3 & 4

July - December, 2011

Regional Workshop on “Current Status and Future Prospects of Pulse Production in SAARC Countries”

A Regional Workshop on “Current status and future prospects of pulse production in SAARC Countries” was jointly organized by SAARC Agriculture Center (SAC), Nepal Agricultural Research Council (NARC) and Department of Agriculture (DOA) at NARC seminar hall on 24-25 October, 2011. The program was inaugurated by Mr. Umakanta Jha, Secretary of Ministry of Agriculture and Co-operatives. The program was attended by more than 40 agricultural scientists from Bhutan, Maldives, Bangladesh, India, Pakistan, Nepal and Srilanka.



Participants of SAARC Workshop on “Current status and future prospects of Pulse Production” at Kathmandu, Nepal

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National Biotechnology Conference 2011

National Biotechnology Conference was held from 12-13 July, 2011 at PPD Auditorium, NARC, Khumaltar. The motto of the program was “Biotechnology for income generation and social well being”. The objectives of the conference were to familiarize the importance and uses of biotechnology research for food

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Dr. Gurung Appointed as Executive Director of NARC



Dr Dil Bahadur Gurung joined Nepal Agricultural Research Council (NARC) as Executive Director. He had been appointed as Executive Director of NARC by the cabinet decision on December 12, 2011.

Earlier, he was in National Maize Research Programme, Rampur, Chitwan where he worked as National Maize Coordinator of that commodity programme.

Dr. Gurung was involved since last fifteen years in the maize research programme as a Senior Scientist and contributed in the national maize breeding programme.

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Talk Program “Paradigm on Horticulture Research and Development in India - A Lesson to learn in Nepal”

A talk program organized by Communication, Publication and Documentation Division (CPDD) at Conference Hall of Soil Science Division on Paradigm on Horticulture Research and Development in India – A Lesson to learn in Nepal delivered by the renowned Horticulturist of Indian Council of Agriculture Research (ICAR), India Dr. H.P. Singh, DDG (ICAR) on 13 July, 2011.

Dr Singh gave overview of last thirty years of horticultural research development in India. The talk was very fruitful with respect to horticultural research improvement in Nepal. Dr Singh who wrote more than 53 books in horticulture pointed out to establish technology mission for horticultural development in Nepal and also suggested to develop knowledge centers for farmers in different corners of Nepal. India is the second largest producer of fruits (shares 10% of world’s production) & vegetable (13.8% of the world’s production) in the world. “Arks Kiran” one of the best variety of guava and “Sree Athira” one of the popular variety of elephant foot yam was developed from India and very much popular.

The talk program was attended by more than 50 scientists, technicians and other professional from NARC, DoA and others.

Interaction Program on Review of Agricultural Policies and Food Security

An interaction program on food security and agricultural policy was organized by WOREC Nepal on 9th of December, 2011 at Saaf Falcha, Babarmahal. The program was attended by all the stakeholders (GOS,NGOs, INGOS and community peoples). The program was organized as a part of 16 days initiative program to prevent violence against women and for making necessary policies.

Education Tour

A team of students studying second semester B.Sc. (Honors) at HICAST, Gaththagar, Kathmandu visited the Communication, Publication and Documentation Division on 12th of November, 2011. The purpose of the visit was to deliver the brief note to the students regarding the extension work done by the division for dissemination of technologies to the farming society as a part of their extension education course.

Agriculture Minister visit to NARC

Agriculture Minister Mr. Nandan Kumar Dutta visited NARC head office in Singha Durbar Plaza on 13 September 2011.

The acting Executive Director Mr. Dinesh Pariyar briefed about the activities and welcomed to the Minister. The detailed program was explained by Dr. Baidya Nath Mahato, Director of Planning & Coordination, NARC. Agriculture Secretary and other Senior Officials from Ministry of Agriculture & Cooperatives were also present in the program. Agriculture Minister Mr. Dutta highlighted the major challenges of NARC and gave assurance to make NARC a prestigious organization. The program was coordinated by Dr T.B. Gurung, Director of Livestock and Fisheries, NARC.

Talk Program

A talk program organized by Communication, Publication and Documentation Division (CPDD) at NARI Conference Hall on December 8, 2011.

The Talk was delivered by Ms. Smriti Mallapaty on the topic “Information about Science & Technology for the developing world including Nepal. Ms. Mallapaty is a freelance journalist working for SciDev.Net-Science & development network. The website www.sci.Dev.Net provides policymakers, researchers, the media & vivid society free access to reports and analysis of the latest developments in science and technology that affect the developing world, as well as practical guide to improve developing countries’ capacity for communicating science & technology. One can registered online at <http://www.Scidev.net/en/user/signup/> for free email alerts and other information. The program was coordinated by Mr Manoj Kumar Thakur, Senior Scientist of CPDD, NARC.

Workshop on Development of Seed-Net in Nepal

One day workshop on Development of SEEDNET in Nepal was organized by International Rice Research Institute (IRRI) on 23rd of December, 2011 at Hotel Mountain Jamal, Kathmandu. The program was chaired by Mr. Nathu P. Chaudhary, Secretary of MoAC, Nepal.

The program was divided in three sessions and the first session was initiated by welcome speech and few words by officiating executive director NARC Dr. T.B. Gurung. The objective of the workshop was highlighted by Dr. US Singh, Regional Co-ordinator, IRRI, South Asia. Mr. F.J. Olanilua of Nigeria shared his few words on African Seed system.

Dr. Ahmad Salahuddin, IRRI and Dr. Khaliq-zaman (BRRI) highlighted on Rice Seed Net Bangladesh: Journey towards an Evolutionary & a Pluralistic Approach. Further, Dr. J. S. Sandhu had his presentation on Seed systems and variety release **on global scenario**. Similarly, Dr. S. Selvaraj presented about seed system in India.

Mr. D.R. Bhandari, Chief, SQCC, MoAC, Nepal highlighted the need of seed policy and seed sector development strategies in Nepal for enhancing sustainable and prolific growth in agriculture sector. Consequently, Dr. N.P. Adhikari, Director Crops & Horticulture, NARC presented about variety development, source seed production and promotion of stress-tolerant rice varieties in Nepal.

The second session was initiated by Dr. Hussein A. Mansoor, Tanzania who shared his few words regarding the seed system experience of Africa (Tanzania). Dr. Devendra Gauchan (Chief, Socioeconomic Division, NARC) presented about seed business model and approach for tracking stress-tolerant rice varieties in Nepal. Similarly, Mr. Nana Jha, General Manager, National seed Company, Nepal talked about status of seed production and

planning through public sector seed company (NSC) for dissemination of STRVs in Nepal. Status and issues in private sector and community based seed production and marketing in Nepal was highlighted by the concerned representatives in the program.

The second session was followed by parallel session for group discussion i.e., eastern, central and western regions regarding the seed multiplication and dissemination of STRVs in the following regions. Mr. D.R. Bhandari, Chief, SQCC was the resource person for the session. Mr. B.N. Chaudhary (RD, eastern region), Mr. S.N. Sah (Rice co-ordinator, central region) and Mr. D.K. Chaudhary (RD, Mid/Far western regions) presented about the seed multiplication and dissemination of STRVs in their respective regions.

Group presentations from eastern, central and mid/far western regions was carried out as plenary session. Dr. Ahmad Salahuddin presented on the synthesis of the workshop for effective and efficient actions to be taken for better maintenance of seednet in Nepal. Closing remarks were given by the Chairperson of the program.

Talk Program on Strategies for Improving Agricultural Extension in Nepal

A talk program was held on 26th of December 2011 at NARC Plaza hall on the topic “Strategies for Improving Agricultural Extension in Nepal” by Dr. Murari Subedi, Professor at Michigan State University, USA. The program was chaired by Dipendra Bahadur Chettri, Vice-chairman of National Planning Commission. The programme were participated by the extension professionals from Department of Agriculture, Department of livestock services, Nepal Agricultural Research Council and National Academy of Science and Technology.

Azolla Increases Rice Yields

Bishnu H. Adhikary

Senior Scientist, CPDD, NARC

Azolla is a genus of small aquatic ferns that is native to Asia, Africa and Americas. *Azolla* species lives in lakes, & swamps and streams and other small bodies of water, and have been dispersed by man and other natural means to various parts of the world. Some are strictly tropical or sub-tropical in nature, while others grow and thrive in either temperate or tropical climates. The most remarkable feature of *Azolla* is its symbiotic relationship with the cyanobacterium *Anabaena azollae*.



Under suitable field conditions *Azolla* can double in weight every 3-5 days and fix atmospheric nitrogen at the rate of 2-4 kg N/ha/day (equivalent to 10-20 kg of Ammonium sulphate). It can provide a potential nitrogen source for flooded crops such as rice. There are many types of *Azolla* species such as *A. pinnata*, *A. Microphylla*, *A. filiculoides*, *A. caroliniana*, *A. Mexicana*, *A. microphylla*, *A. rubra*, *A. nilofica* etc. depending on the climate of the area and topography.

Recently, *Azolla* has been utilized as a natural source of N to the flooded rice. Research evidences show that average production of 610 kg/ha/day of fresh *Azolla* biomass and 1.3 kg N/ha/day could be produced by *A. microphylla* which indicated a high potential of the *Azolla* for its use in rice production.

Similarly, the efficiency of urea-N could be increased by the application of *Azolla* and urea-N applied together. Dual cropping of *Azolla* with rice was found effective than incorporating *Azolla* before rice planting. Results suggested that national average rice yields could be driven to higher levels by the introduction of *Azolla* in irrigated

rice fields. *Azolla* growth rate and production is greatly influenced by phosphorus application methods to *Azolla*. Split application of P to *Azolla* has been recommended. Extra application of P to rice is not needed. *Azolla* also can increase the N content of rice grains and OM content of soils. It can increase the rice yields without the application of urea-N. Evidences showed that it can increase approximately 37% soil N and as high as 112%

rice grains. Isolation of better N-fixer species and development of adverse condition resistant *Azolla* varieties need further research for its maximum exploitation in Agriculture.

References:

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- Adhikary BH et al. 1996. Thai Journal of Soils and Fertilizers. Soil and Fertilizer Society of Thailand, Bangkok. vol. 18(4):223-234.
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Turkey Production Technology

Manoj Thakur

Senior Scientist, CPDD, NARC

Introduction

Nepal is low supply of animal protein that is indicated by wrinkle faces of the adults, anemic condition in pregnant women and malnutrition and growth retardation in children. Only approximately half (9.6 g/p/d) of the daily required animal protein has been supplied through existing sources. Avian species, especially chickens are the major source of animal protein. Turkey meat constitutes low fat percentage and low content of cholesterol as compared to chicken and ducks meat and delicacy in human food. Turkey meat not only contains of essential fatty acid but also contain of polyunsaturated fatty acids than chicken and duck, which is highly desirable for human health.

Origin and domestication of Turkey

Turkey was first domesticated in 1498 by early explorers to Europe and later on rural farmers began to grow Turkeys as a large scale. American Standard of perfection for poultry recognizes seven breeds of domesticated Turkeys. Bronze, White Holland, Bourbon Red, Narragansett, Black Slate and Beltsville Small White are recognized breeds (Gascoyone, 1989). Presently, only three varieties of Turkeys are more commonly used, namely, Large White (Broad-Breasted White), Bronze (Broad-Breasted Bronze) and Small White (Beltsville-White) which can also be grown successfully in Nepal.

Management and floor space requirements

The management of Turkey is almost similar to that of chicken. The building should have good floor that can be easily cleaned and disinfected. Turkeys are generally reared on range or in deep litter system, cage system is not much proper for small flock, but for breeding purposes cage rearing are also required.

Turkey fowls grow very rapidly and for the best performance they should not be over crowded. One square feed (sq.ft.) floor space is required for 3-4 weeks and there after up to 8th weeks space should be 1.5sq.ft. per poult. From 8th to 12th weeks of age, the floor space increased to 2 sq.ft. per poult. After 16th weeks onward the floor space should be 3-5 sq.ft. per bird. Turkey

required warmer environment, poults should be brooded at 95°F for first week then 5°F temperature per week should be reduced till 70°F. The Turkey may be marketed as broiler at approximately 16th weeks of age when hens usually reach a live weight of 8 kg and to 12 kg. Birds can be slaughtered earlier than 16 weeks for fryer roasters.

Nutrition and Feeding

The Turkey is a very rapidly growing birds, day old poult of Turkey multiply 22 times in 28 days and 327 times in 140 days of age. To fulfill rapid growth Turkey



*Turkey rearing at Khumaltar
Photo courtesy: Rishi R. Adhikari*

required high nutrient intake compared to chicken. Turkey meat contain low level of fat, therefore they need narrower ratio of energy to protein in their diets. Fiber digestion is relatively better than chicken, so, Turkey may obtain more matabolizable energy (ME) from same feed given to chicken. Research recommended 28 percent protein and 2800 kcal/kg ME during starter period

(0-4 wks) and gradually changes to 14 percent protein and 3300 kcal/kg feed for finisher stage (20-24 wks). Turkey is a monogastric birds, they need balanced level of 10 different essential amino acids in their diets. Lysine, methionine, and theonine are the most critical amino acids, which should be balance during ration formulation as recommended by NRC (1994). Vitamin A,D,E,K (fat soluble) and B-vitamins & C are also needed for their proper growth and metabolism.

Health care and disease control

Turkey are relatively resistant to various diseases as compared to chicken. Prevention should be done against Ranikhet, Fowlpox and emphasis should be given to control measures against coccidiosis, fowl cholera, fowl typhoid, blacked head, erysipckes, infectious sinovitis and internal parasites.

Conclusion and recommendation

In Nepal farmers have low level of technical know-how of this technology and it could be promoted to rural resource poor farmers for income generation and quality animal protein source for urban population. As a new venture, this technology should be kept under national broadcasting medias as “the meat of the New Millennium”.

Training, Workshop/Seminar, Study and Tours

July - December 2011

S.N.	Name	Position	Office	Subject	Duration	Country
1.	Rishi Ram Adhikari	Computer Officer (T6)	CPDD, Khumaltar	CSISA Video Production	1-14 July, 2011	Bangladesh
2.	Dr. Chet Raj Uprety	Chief Scientist (S5)	Bovine & Avine Research Program, Khumaltar	Scientific Visit	9-22 July, 2011	China
3.	Dev Narayan Mahato	Senior Technical Officer (T7)	NRRP, Hardinath	Seminar on hybrid Rice	July 13-August 2	China
4.	Babu Ram Regmi	Senior Technical Officer (T7)	NMRP, Rampur	Seminar on hybrid Rice	July 13-August 2	China
5.	Shreemat Shrestha	Senior Scientist (S4)	Agri.Engineering Division, Khumaltar	Expert Group Meeting	26 July 2011	Thailand
6.	Rajendra Pandit	Senior Finance Officer (A7)	NARC, Singh durbar Plaza	Conference: MDGS	July 26-30, 2011	Germany
7.	Dr. Deepak Bhandari	Senior Scientist (S4)	NWRP, Bhairahawa	Training on Wheat Pathology	August 15-Sept. 15, 2011	Mexico
8.	Sudha Sapkota	Scientist (S1)	SARPOD, Khumaltar	Enhancing global rice research leadership	Aug 15-26, 2011	Philippines
9.	Ram Krishna Mahato	Senior Scientist (S4)	RARS, Tarahara	Part of Ph.D.Thesis program	August 18-Oct 18, 2011	Philippines
10.	Hari Krishna Shrestha	Senior Scientist (S4)	Planning Division, NARC	AFACI Meeting	August 22-26, 2011	Korea
11.	Kailash Pd. Bhurer	Regional Director	RARS, Parwanipur	Cross-project Meeting	August 29-September 2, 2011	India
12.	Anand Kumar Mishra	Scientist (S1-Agri Engineer)	NARC, Singh durbar Plaza	Inspection Visit	Sept. 2-5, 2011	India
13.	Hari Krishna Upreti	Senior Scientist (S4)	Agri-Botany Division, Khumaltar	Temperate Rice Research Consortium	Sept 5-8, 2011	Russia
14.	Salik Ram Gupta	Senior Scientist (S3)	Gene Bank, Khumaltar	Symposium of Japanese Society for tropical agriculture	Sept 17-18, 2011	Japan
15.	Suresh Kumar Wagle	Senior Scientist (S4)/Chief	Fishery Research Division, Godhawori	Consultation on development trends in fisheries	Sept 20-23, 2011	China
16.	Tirtha Rijal	Senior Scientist (S3)	NMRP, Rampur	Standardization of stem rust note taking & evaluation of germplasm	Sept 26-Oct 7, 2011	Kenya
17.	Hemanta Kumar Chaudhary	Technical Officer(T7)	NWRP, Bhairahawa	Standardization of stem rust note taking & evaluation of germplasm	Sept 26-Oct 7, 2011	Kenya
18.	Dr. Hira Kaji Manandhar	Senior Scientist (S4)	Plant Pathology Division, Khumaltar	Workshop on Asian Network for sustainable organic farming technology	Sept 26-28, 2011	Republic of Korea
19.	Dr. Renuka Shrestha	Senior Scientist (S4)/Coordinator	NGLRP, Rampur	5th World congress on conservation agriculture	Sept 26-29, 2011	Australia
20.	Dr. Krishna Prasad Paudel	Senior Scientist (S4)/Chief	Horticulture Research Division, Khumaltar	Workshop on Asian Network for sustainable organic farming technology	Sept 26-28, 2011	Republic of Korea
21.	Rameshwor Maharjan	Scientist (S1)	Entomology Division, Khumaltar	Ph.D.Entomology	BS 2068/5/25-071/5/24	Republic of Korea
22.	Mahendra Jung Thapa	Senior Scientist (S4)/Chief	Food Research Unit, Khumaltar	Post-harvest technology for rice production	October 10-14, 2011	Thailand
23.	Purnendu Shekhar Sharma	Senior Scientist (S4)/Chief	Food Research Unit, Khumaltar	Post-harvest technology for rice production	October 10-14, 2011	Thailand
24.	Dil Raj Yadav	Scientist (S1)	NRRP, Hardinath	Advanced Biometrical Techniques in crop improvement research	October 10-15, 2011	Kanpur, India
25.	Vivek Sapkota	Scientist (S1)	RARS, Tarahara	Advanced Biometrical Techniques in crop improvement research	October 10-15, 2011	Kanpur, India
26.	Dr.Dil Bahadur Gurung	Senior Scientist (S4)/Coordinator	NMRP, Rampur	Study tour to India on maize research observation	October 10-17, 2011	India
27.	Dr. Devendra Gauchan	Chief	SARPOD, Khumaltar	7th Asian Society of Agricultural Economists	October 13-15, 2011	Vietnam
28.	Mr.Krishna Prasad Timsina	Scientist (S1)	Training & Scholarship Division	Rice:Postproduction to market training course	Oct 17-28, 2011	Philippines
29.	Mr.Dinesh Pariyar	Executive Director	NARC, Singh durbar Plaza	15th CORRA Annual Meeting	October 24-25, 2011	Philippines
30.	Dr.Tek Bahadur Gurung	Director, Livestock and Fishery	NARC, Singh durbar Plaza	ICARDA'S Board of Trustees Meeting	Oct 27-31, 2011	India

31.	Mr.Dinesh Pariyar	Executive Director	NARC, Singh durbar Plaza	Expert Consultation on Agricultural Biotechnology, Biosefty, and Biosecurity	October 27-28, 2011	Taiwan
32.	Surya Prakas Paudel	Scientist (S1)	RARS, Tarahara	Pheotyping for Abiotic Stresses in rice	October 27-Nov 11, 2011	Philippines
33.	Ananda Chaudhary	Scientist (S1)	NRRP, Hardinath	Pheotyping for Abiotic Stresses in rice	October 27-Nov 11, 2011	Philippines
34.	Mr.Dinesh Pariyar	Executive Director	NARC, Singh durbar Plaza	Regional Dialogue on Conservation Agriculture	Nov 1-2, 2011	India
35.	Dr.Niranjan Prasad Adhikary	Director, Crop & Horticulture	NARC, Singh durbar Plaza	Regional Dialogue on Conservation Agriculture	Nov 1-3, 2011	India
36.	Mr. Bedananda Chaudhary	Regional Director	RARS, Tarahara	ACIAR Sub-regional Workshop	3-Nov-11	India
37.	Dr. Renuka Shrestha	Coordinator	NLRP, Rampur	ACIAR Sub-regional Workshop	3-Nov-11	India
38.	Mrs.Mitali Sah	Scientist (S1)	RARS, Parwanipur	Hybrid rice planting and extension for Nepal countries	Nov 9-29, 2011	China
39.	Mr.Ajaya Ratna Bajracharya	Senior Scientist (S3)	ARS, Pakhribas	Hybrid rice planting and extension for Nepal countries	Nov 9-29, 2011	China
40.	Mr.Ghana Shyam Malla	Senior Scientist (S3)	Agri-Environment Unit, Khumaltar	Hybrid rice planting and extension for Nepal countries	Nov 9-29, 2011	China
41.	Mr.Biseshwor Pandey	Scientist (S1)	ARS, Jumla	Hybrid rice planting and extension for Nepal countries	Nov 9-29, 2011	China
42.	Mr.Dev Kumar Safi	Scientist (S1)	NRRP, Hardinath	Hybrid rice planting and extension for Nepal countries	Nov 9-29, 2011	China
43.	Dr.Dil Bahadur Gurung	Senior Scientist (S4)/Coordinator	NMRP, Rampur	11th Asian Maize Conference (AMC)	Nov 7-11, 2011	China
44.	Dr.K.B.Koirala	Senior Scientist (S4)/Coordinator	HCRP,Kavre	11th Asian Maize Conference (AMC)	Nov 7-11, 2011	China
45.	Mr.Y.R. Pandey	Regional Director	RARS, Lumle	11th Asian Maize Conference (AMC)	Nov 7-11, 2011	China
46.	Mr. Bhanu Bhakta Pokhrel	Senior Scientist (S3)	ARS, Surkhet	11th Asian Maize Conference (AMC)	Nov 7-11, 2011	China
47.	Dr. Jwala Bajracharya	Chief	Seed Technology Division, Khumaltar	11th Asian Maize Conference (AMC)	Nov 7-11, 2011	China
48.	Mr.Nawal Kishor Yadav	Director, Finance	NARC, Singh durbar Plaza	IFAD 954-ICRISAT Project Annual Review & Planning Meeting and Project Steering Committee Meeting	Nov 14-16, 2011	India
49.	Mr.Deokanta Chaudhary	Regional Director	RARS, Khajura	IFAD 954-ICRISAT Project Annual Review & Planning Meeting and Project Steering Committee Meeting	Nov 14-16, 2011	India
50.	Mr.Hari Krishna Shrestha	Chief	Planning Division, NARC	IFAD 954-ICRISAT Project Annual Review & Planning Meeting and Project Steering Committee Meeting	Nov 14-16, 2011	India
51.	Mr.Rajendra Darai	Senior Scientist	RARS, Khajura	IFAD 954-ICRISAT Project Annual Review & Planning Meeting and Project Steering Committee Meeting	Nov 14-16, 2011	India
52.	Dr.Niranjan Prasad Adhikary	Director, Crop & Horticulture	NARC, Singh durbar Plaza	Inception workshop on regional initiative on improvement of vegetables and adaptive trials in SAARC countries	Nov 16-17, 2011	Bangladesh
53.	Mr. Suchin Kumar Mishra	Chief	ARS (Agri-implements), Ranighat	Regional meeting of CSISA Hubs-Eastern Gangetic plains	18-Nov-11	India
54.	Dr. Doj Raj Khanal	Senior Scientist (S4)	Animal Health research Division	Animal transboundary and emerging diseases	Nov 27-Dec 13, 2012	Israel
55.	Mr.Rajendra Darai	Senior Scientist	RARS, Khajura	Exposure Training Workshop of SAARC-Australia Project on "Developing capacity in cropping systems modeling to promote food security and the sustainable use of water resources in South Asia	Nov 20-24, 2011	Bangladesh
56.	Dr.Baidya Nath Mahto	Director, Planning & Coordination	NARC, Singh durbar Plaza	Regional Seminar on Rice Production and Mechanization	Dec 12-13, 2011	China

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The program focused on the importance of pulse crop research and development in eliminating poverty and malnutrition in the South Asian countries and highlighted the present status of pulse production in SAARC countries and its future prospects. Agriculture Specialists from different SAARC countries presented the pulse crop research and development of their respective countries and exchanged views and opinions for making regional pulse policy to enhance production and productivity of pulse crops in South Asian countries.

R. Shrestha, RK Neupane and NP Adhikari presented on the status and prospect of Pulses in Nepal. The presenters highlighted the fact that Nepal contributes 0.4% of world pulse area and production and the diverse climatic and environmental conditions offers enormous opportunities for growing many species of food legumes in Nepal. Sharp increase in area, production and productivity under grain legumes by 40%, 99% and 42% was addressed by the presenters. The fact that grain yield had been increased by more than 42% but the national average yield production is still less than 1 mt/ha was of general concern in the discussion. The varietal development and technology transfer done by National Legume Research Centre, Rampur was also presented in the program.

Nasrith Akhtar, Program co-ordinator of SAC; Dr. NP Adhikari, Director of Crops and Horticulture; Ramprasad Pulami, SAARC representative from Nepal; chief guest Tashib Ahammad and others had given their valuable words in the program.

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Prior to National Maize Research Programme he held of member of Research and Development positions at Agriculture Research Station, Dailekh and other research entities of NARC. Dr. Gurung entered in the government service on 1983 as Assistant Plant Protection Officer.

Dr Gurung belongs to Shree Manjang VDC of Lamjung district and obtained his PhD from Philippines on Plant Breeding.

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security and poverty alleviation in Nepal and to prioritize the policy, administration, research and development in biotechnology. Chief guest of the program was Dr. Subodh Narayan Jha, member of National Planning Commission. The program was chaired by Dinesh Pariyar, ED, NARC.

Dr. NP Adhikari, Director Crops and Horticulture highlighted the subject matter and intent of the conference in brief. The conference was attended by scientists, lecturers and students from various organizations. DR. Bhab Prasad Tripathi, scientist at IRRI and Dr. Arun Kumar Joshi, scientist at CIMMYT announced that they are eager and willing to help the Biotechnology unit as far as possible for the betterment of agriculture sector in Nepal.

Total of 27 papers were presented in the conference covering the topics of tissue culture, DNA technology and bio-safety. The program was attended by more than 200 participants representing various government, non-government and private sectors.

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Published by
Communication, Publication and Documentation Division (CPDD)
Khumaltar, Lalitpur,
Phone : (977-1) 5523041, Fax : 5521197
Email : cpdd@narc.gov.np
Website : www.narc.gov.np

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