



A Quarterly Newsletter of Nepal Agricultural Research Council (NARC)

Vol. 12 No. 3

July-September 2005

NARC Annual Progress Review

Annual progress of the research programs conducted by NARC in Fiscal Year 2061/62 (2004-2005) was presented and reviewed at special program organized at NARC, Singh Durbar Plaza on 29 August 2005.

In the program, annual progress of the NARC was presented by Mr. SN Vaidhya, Chief, Monitoring and Evaluation Division of NARC for review and discussion. The function was chaired by Mr. Govinda Prasad Pandey, Secretary of Ministry of Agriculture and Cooperatives. The Minister for Agriculture and Cooperatives, Mr Badri Prasad Mandal was present as the Chief Guest to the function. The function was participated by Executive Director and Directors of NARC, Director Generals of Department of Agriculture and Department of Livestock Services, Joint Secretary, Monitoring and Evaluation

contd. on page 4

NARC signed MoU with DLGSP

A memorandum of understanding between Nepal Agricultural Research Council (NARC) and Decentralized Local Governance Support Program (DLGSP) was signed to provide technical support to community organization (COs) members for promoting agro-based income generating activities through the promotion of appropriate agricultural technology in rural areas. Under the MoU, NARC will provide technical support on training and orientation on agricultural technology promotion to upgrade the skills of social mobilizers, carry out action research, organize exposure visits and information sharing. NARC will extend cooperation to enhance the skills of village experts trained under the program

The MoU was signed by Mr. Shambhu Bahadur Panday, Director of Planning and Coordination, NARC and Mr. Reshmi

contd. on page 8

Varieties of Groundnut and Rapeseed Released

Variety Release and Registration Sub-Committee under National Seed Board that met on 28th and 29th of July 2005, officially released two varieties each of groundnut and rapeseed for the farmers to cultivate at different regions of Nepal.

The varieties have been released along with complete package of practices after many years' research and experiment at Oilseed Research Program, Nawalpur, different research stations, disciplinary divisions and farmers' fields.

Groundnut

Both of the groundnut varieties: 'Baidehi' and 'Rajarshi' are recommended for terai and inner terai. 'Baidehi', the early variety (110 days) has an yield potential of 3.3

contd. on page 8

IN THIS ISSUE

- NARC annual progress review
- NARC signed MoU with DLGSP
- Varieties of groundnut and rapeseed released
- NARC program budget for 2005/06
- True potato seed in Nepal
- Farmers' Training on Fishery at Kaligandaki Hydro Project
- Farmers' Exchange Visit on ICM
- Monitoring of Direct Seeded Rice (DSR) in Farmers' Field
- Availability of PERI Resources in NARC
- Economy of Agriculture Research
- BL 2047: A promising wheat variety for the Siwalik region
- NARC Scientists obtained PhD.



Photo: Rajendra Bajracharya

NARC Programs and budget for FY 2005/06

His Majesty's Government allocated a total of NRs 29,50,55,000 to Nepal Agricultural Research Council (NARC) for the fiscal year 2005/2006 to implement 426 different projects/programs approved on research, production, management, outreach and research support proposed from different entities under NARC. The projects have been proposed with major focus on technology generation on major food crops; industrial and exportable crops; off-season vegetables, meat and dairy production; post-harvest loss control; soil, water and bio conservation; resource conservation; and on other aspects like socio-economics, environment, communication etc. The budget allocated for agriculture research is 0.23% of the total National Budget.

Budget distribution by different categories are given below.

Budget (NRs '000) by funding source

Funding source	Current Year (062/63)		Previous Year (061/62)	
	Budget	Percent	Budget	Percent
NARC/HMG	47650	16.15	48300	15.52
ARP/HMG	200498	67.95	210500	67.63
KR2 Fish/Japan	28500	9.66	30000	9.64
HMRP/SDC	18407	6.24	22449	7.21
Total	295055	100.00	311249	100.00

Budget (NRs '000) by main headings

Headings	Current Year (062/63)		Previous Year (061/62)	
	Budget	Percent	Budget	Percent
Staff Budget	180000	61.01	160000	52.90
Operational Budget	83387	28.26	105089	33.00
Administrative Budget	28468	9.65	36880	12.50
Capital Budget	3200	1.08	9280	1.60
Total	295055	100	311249	100.00

Sector-wise projects and budget (NRs '000)

Sector	No. of Projects	Operational Budget	Percent
Crop	186	32776	39.31
Horticulture	82	8784	10.53
Livestock	58	13363	16.03
Fishery	39	10955	13.14
Multi sector	56	16919	20.29
Others	5	590	0.71
Total	426	83387	100

Category and budget (NRs '000)

Project Types	No. of Projects	Operational	
		Budget	Percent
Core	145	36139	43.34
Technology generation	174	16395	19.66
Socio-economics	39	5402	6.48
Environmental	9	1092	1.31
New Frontier	6	820	0.98
Others	53	23539	28.23
Total	426	83387	100

No. of project and budget (NRs '000) by funding agency

Funding agencies	No. of Projects	Operational	
		Budget	Percent
NARC/HMG	89	11800	14.15
HMRP/SDC	51	15089	18.10
KR2 Fish/Japan	41	12000	14.39
ARP/HMG	245	44498	53.36
Total	426	83387	100.00

Status-wise projects and budget (NRs '000)

Status	No. of Projects	Budget	Percent
Ongoing	247	30338	36.38
New	66	8263	9.91
Regular	113	44786	53.71
Total	426	83387	100.00

Commodity-wise projects and budget (NRs '000)

Commodity	No. of Projects	Budget	Percent
Rice	29	3677	4.41
Maize	59	15816	18.97
Wheat	13	2263	2.71
Potato	11	1795	2.15
Rice-Wheat	12	1732	2.08
Major Multiple Crops(rice, maize, wheat, potato)	7	780	0.94
Other Multiple Commodities	96	24831	29.78
Hill Crops	4	454	0.54
Grain Legumes	13	1546	1.85
Oilseed Crops	9	1000	1.20
Commercial Crops(tea, coffee, cotton, cardamom, sugarcane, jute, tobacco etc.)	27	2960	3.55
Vegetables	26	1848	2.22
Off-season vegetables	5	455	0.55
Citrus	9	1210	1.45
Other fruits	4	376	0.45
Flowers	2	145	0.17
Spices (Ginger/turmeric/chilli/garlic)	5	524	0.63
Sericulture	1	44	0.05
Bovine/Cattle	17	4000	4.80
Goat	7	1875	2.25
Sheep	2	207	0.25
Swine	4	1265	1.52
Avian (Chicken/turkey/duck/quail)	7	1977	2.37
Rabbit	1	81	0.10
Pasture/Forage	13	1171	1.40
Fish	39	10955	13.14
Non-commodity	4	400	0.48
Total	426	83387	100

TRUE POTATO SEED IN NEPAL

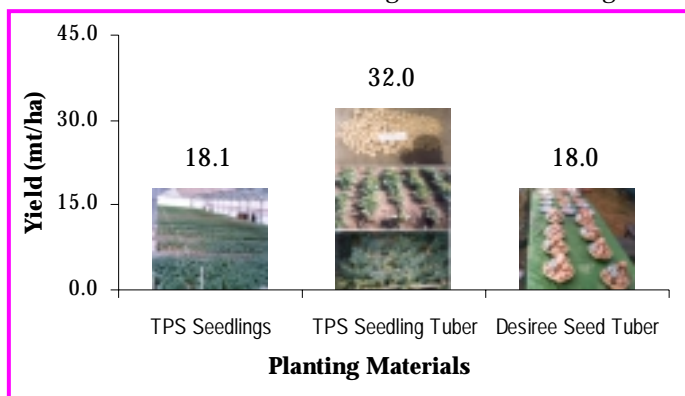
- Ram Chandra Adhikari

Potato ranks fourth most important food crop after rice, maize and wheat in Nepal. The crop plays an important role in the country's food security and poverty alleviation because of its short vegetative cycle and it has a high cash value. It is a staple food in high hills and a major vegetable and snacks in other parts of the country. In 2004, total area under potato was 143027 ha with an average productivity of 10.9 mt/ha, lower as compared to other countries.

The main constraints to cause lower yield are the unavailability of seed tubers in adequate quantity, high seed cost, poor quality of degenerated seed and diseases. The cost of seed tubers accounted for 40-60 percent of production costs. Seed tubers are bulky and perishable and, therefore difficult to transport to hills and high hills. Transportation and storage infrastructure are insufficient for transporting and storing large quantity of seed potatoes. Moreover, the seed tubers are often the source of diseases and pest introductions. True Potato Seed (TPS) has been found as an alternative planting material for potato production to overcome the aforementioned problems. One hundred gm of true seed can replace 2 mt of seed tubers required to plant 1 ha of land thus diverting it for use as food.

What is TPS?

TPS is the tiny sexually produced botanical seed found in the small, tomato like fruits of the potato plant. It is a small seed with a thousand seed weight of less than one gram.



Utilization of TPS

In Nepal, TPS is mainly utilized by two ways: (1) Potato production from tubers derived from TPS and (2) Potato production by transplanting. In the first method seedlings are grown in nursery beds until tuber maturity. At maturity tubers are harvested and stored until planting for ware potato production. In the second method, seed is sown in nursery beds containing soil of proper physical structure, well rotten manures and moisture as practiced for seedling production of other vegetable crops. Seedlings of 25-30 days are transplanted to main field. This method is applicable, especially in areas where vegetable production by transplanting is common practice and where irrigation is not limited.

In the context of Nepal, potato production from TPS derived tuberlets is practically viable and highest tuber yields also obtained from above 5 g sized seedling tubers as compared to TPS seedlings and clonal seed tubers of Desiree (Fig. 1).

Utilization of TPS and area coverage is in increasing trend (Fig. 2). In Nepal, the use of true potato seed is emerging as a low cost supplemental technology to the growing from seed tubers. The farmers trials conducted in different agro ecological zones (AEZs) have given very encouraging results. Potato Research Program (PRP), Nepal Agricultural Research Council (NARC) has carried much work on evaluation of TPS progeny received from the CIP in different AEZs.

Fig. 1: Comparative yield performance of TPS seedling, seedling tuber and seed tubers of clonal seed Desiree at Khumaltar

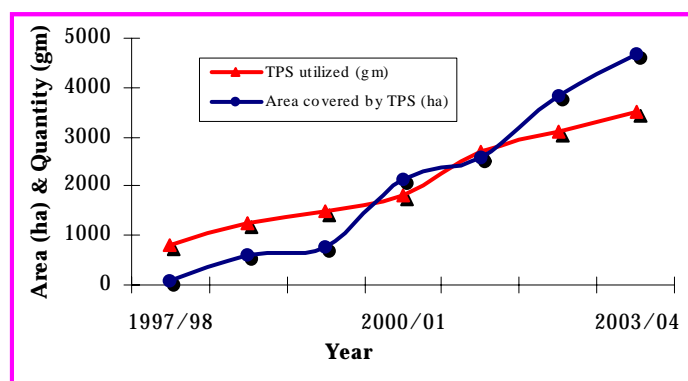


Fig. 2: TPS utilization and area coverage

Future research needs for the promotion of TPS technology in Nepal

- Identification of TPS families for stability of color (red color), uniformity, quality, maturity and yield for different agro ecological zones.
- Research to improve productivity and lowering of production cost of hybrid TPS materials.
- Development of appropriate parental lines for the production of hybrid TPS.
- Generation of appropriate packages and practices for different farming conditions.
- Production of hybrid TPS, storage and handling

Fishery Farmers' Training at Kaligandaki 'A' Hydro Project

A training program for farmers on conservation and management of local fish was organized by Kaligandaki Fish Hatchery Program on 22-23 September 2005 at Beltari, Syangja.

The two-day training was organized with an objective to create awareness and involve local community in conservation and utilization of local fish for their livelihoods.

Technical Officer at the Kaligandaki Fish Hatchery, Mr. Agni Nepal reported that the training was participated by twenty farmers, 12 women and 8 men from fisher communities of different village of Palpa and Syangja districts.

The Fish Hatchery was established in 2002 with MoU between NARC and NEA for maintaining and conserving aquatic biodiversity and fish population, mitigating indigenous fish species, making study and developing fish technologies of important fish for mass production and to minimize the negative impacts on the fish diversity in the river and the local community caused by the hydroelectric reservoirs and dams in the river. NARC has been conducting research activities and running fish hatchery program under the project whereas NEA has been providing

Farmers' Exchange Visit on ICM

A one day- farmers' field visit on Integrated Crop Management (ICM) was organized by Soil Science Division on 12 August at Khumaltar, Katunje and Kavre.

The Soil Science Division has been conducting activities in the farmers' fields in Kavre and Bhaktapur with an objective to train extension and development people and support them in dissemination of existing technologies.

The visit was organized to familiarize farmers of Kavre with new technologies already adopted at similar domain in Bhaktapur where 22 farmers are practicing resource conservation technologies (RCTs).

RCTs are being popular in different parts of the country that have helped to save cost in production and to maintain turn around time in planting.

physical facilities for the fishery research and hatchery program.

Hatchery for fish breeding and fish ladder for upstream/downstream fish movement has been established. Different species of fish mainly Sahar, Asla and Katle are kept in the Hatchery. Millions of fingerlings have been so far hatched and released in the river. Other activities being conducted are: collection and stocking of native riverine brood fish in the ponds, brood fish management, nursing and rearing management of riverine fish, fingerling production and restocking in Kali Gandaki River community, Biological and limnological study of Kali Gandaki River, Response study of riverine fish culture possibility, Formation of local fisher community and fish growers group for sustainable fishery, Mobilization and training to fisher community and fish grower group, Status review of fish fauna, capture fisheries, fish market survey and socio economics of fishers, Development of fishing regulation with fisher's participation for conservation of fish, Pellet feed machine installation and feed production etc.

It is the first program implemented in association with the hydroelectric power plant.

Interaction on Livestock Technologies

A special program for interaction of livestock technologists and extensionists was organized jointly by Nepal Agricultural Research Council (NARC) and Department of Livestock Services on 4 July 2005 at Harihar Bhawan, Lalitpur.

The program was organized to share ideas among scientists and livestock extensionists on development and transfer of technologies in livestock sector, and to strengthen coordination between NARC and DLS.

The meeting reviewed the process of technology generation by NARC and technology transfer process of DLS. Concept paper by scientists and development officers were presented and discussions were held to improve the process.

Monitoring of Direct Seeded Rice (DSR) in Farmers' Field

With an objective to observe performance of direct seeded rice planted by Zero Till Drill, Power Tiller Drill and Drum Seeder and to get farmers' feedback on these resource conservation technologies, a special monitoring program was organized by Agricultural Implement Research Centre, Ranighat under Regional Agricultural Research Station of Nepal Agricultural Research Council(NARC) on 22 August 2005 at different places in Bara and Parsa districts.

The program was attended by Director of Crop and Horticulture Research, Dr. S L Maskey, Chief Agronomy Division, Mr. GP Koirala, Chief of Communication, Publication and Documentation Division Mr. BMS Basnet, Chief of Soil Science Division Dr. DP Sherchan, Nepal-IRRI Coordinator Dr. BP Tripathi, Coordinator of National Rice Research Program Dr. NP Adhikari, Director of Regional Agricultural Research Station Dr. RB Prasad, Senior Scientist Mr. AC Shrivastav and Mr. KP Bhurer and Agriculture Development Officers from Bara, Parsa and Rautahat.

Observation of DSR and interaction with farmers were held at Treveni of Bara, Belwa and Shivharwa of Parsa.

From page 1

Division of Ministry of Agriculture and Cooperatives, scientists and representatives from NARC and Ministry of Agriculture and Cooperatives.

NARC conducted 444 different projects on crops, horticulture, livestock, socioeconomics and others proposed from different stations, divisions and units and approved by Council for the year. Ninety six percent of the target was reported to have been achieved in the year. Total annual budget approved for the year was NRs. 311,249,000 and received NRs. 286,691,000 in the year.

Some remarkable research outputs were also highlighted during the occasion.

Availability of PERI Resources in NARC

- Manoj Kumar Thakur

Communication, Publication & Documentation division (CPDD) of Nepal Agricultural Research Council (NARC) has been providing information access from its library to the agricultural researchers since last fifteen years back. This library is also regarded as the National Agriculture Documentation Center which has the responsibility of strengthening linkages with international agencies for sharing of information and documentation of relevant materials with each other.

NARC as an apex body for agriculture research in the country needs its scientists & technicians fed with the global information on agricultural research for upgrading their knowledge and with the new technology to foster quality research in the country.

In this regard PERI (Program for Enhancement of Research Information) is quite useful for gaining variety of information in different subject areas and accessible with full text information. It is a program oriented by INASP (International Network for the Availability of Scientific Publication) which is based in the United Kingdom. In Nepal, PERI is coordinated by the TUCL (Tribhuvan University Central Library) and NARC is one of the coordinating partner that is providing access of PERI to its users for last one year. PERI began as a pilot program in 2001 in six African countries, which quickly grew to include eight countries. At present, PERI is active in >20 countries throughout Sub-Saharan Africa and former Soviet Union plus Sri Lanka, Ecuador, Bolivia and now in Nepal. The PERI has been implemented in different countries of the universe to bridge up the digital gap between developing and developed world. Sri Lanka is the first country to introduce this programme in South Asia.

PERI has four areas of services - delivering information to enable researchers and scientists to acquire international academic and scholarly information as on-line full text journals; access to national and regional research; strengthening publishing & providing opportunity for the enhancement of the skills in books and journal publishing in print or electronic format and enhancing Information and Communication Technology (ICT) skills within library, university and research institutes.

The information resources available through PERI would normally cost for a single institute in the west over 1 million pounds. These same resources are made available in Nepal, being a least developed country for about 27,500 pounds. For Nepal, funding has been made available for 2006 by the Danish Ministry of Foreign Affairs.

With the use of PERI, researchers are getting benefited by accessing the relevant resources of their field of interest and thus improving their knowledge in developing research proposals. The most positive and remarkable feature of the PERI resources is availability of full text content which is merely available online in the other database package.

NARC has registered EBSCO, CABI, Blackwell Synergy, SpringerLink and AGORA, in which CABI and AGORA is most often used by the NARC researchers. PERI is exhaustively used for literature search and to improve the quality of research in

the field of agriculture which will be ultimately addressed the need of the Nepalese farmer and help in uplifting the rural livelihood.

NARC is planning to explore the PERI resources to its regional offices and other agriculture research stations where Internet access is available. CPDD of NARC is also planning to conduct an interaction programme in the near future to make aware of PERI resources to its researchers.

The INASP website provides a gateway to information resulting from PERI resources, global research and experiences. The users can use these online resources on the following websites:

For general information go to the website:

<http://www.inasp.info/peri>

Links to free resources:

www.inasp.info/peri/free.html

Links to AGORA:

<http://www.aginternetwork.org>

Links to CABI:

<http://www.cabdirect.org>

Links to CABI Compendia:

www.cabi.org/compendia

Links to MCB Emerald:

www.emeraldinsight.com/login

Links to EBSCO Host:

<http://search.epnet.com>

Links to African Journals Online:

<http://www.ajol.info>

Links to Oxford University Press:

www.oupjournals.org

Those institutes under NARC can access PERI online resources by registering their institute for the free use of these resources on the following websites.

AGORA:

<http://www.aginternetwork.org>

CABI Compendia:

<http://inasp.info/peri/resources/cabcom.shtml>

MCB Emerald:

<http://inasp.info/peri/resources/emerald.shtml>

EBSCO Host:

<http://inasp.info/peri/resources/ebSCO.shtml>

African Journals:

<http://inasp.info/ajol/index.html>

Oxford University Press:

<http://inasp.info/peri/resources/oup.shtml>

Any problem faced during the registration, kindly contact to cpdd@mos.com.np . We will appreciate of your problem in registration of above resources and always forwarded our hands to resolve it. So, feel free for any kind of assistance. Hope you can browse variety of information of your need and make use of it for the benefit of farming community.

NARC Scientist obtained PhD



Dr. Upendra Man Singh, Senior Scientist (S4) in Nepal Agricultural Research Council (NARC), has obtained Ph.D. in Veterinary Pathology from Indian Veterinary Research Institute (IVRI), Deemed University, Izatnagar Bareilly, U.P.India.

His Ph.D. thesis entitled "Caprine Paratuberculosis: Immuno-Pathology and Diagnosis in goats" mainly concentrated on experimental studies on station at IVRI and spontaneous studies in Nepalese goats.

The experiment was carried out to study the immuno-pathology and efficiency of certain diagnostic tests in experimentally produced subclinical Caprine paratuberculosis. A total of 17 goats of 8-12 weeks old were infected with 4.23×10^9 *M a. paratuberculosis* on 8 occasions and 7 goats as in-contact and 4 goats as gross infected control were also kept.

Six out of 12 infected goats available for study had gl and histological lesions and showed positivity in different diagnostic tests. Johnin test (DTH) detected 6 infected goats out of which 3 goats were acid fast positive and with histopathological lesions of paratuberculosis. AGID detected 2 infected goats positive at 12 months post infection. Absorbed ELISA detected 5 goats positive among which 2 goats were acid fast bacilli positive. Faecal smear was positive in 2 infected goats where as faecal culture was positive in 3 goats. Similarly tissue smears and tissue PCR detected two infected goats positive. Bacteriological culture of tissue was positive in one infected goat.

Gross pathology revealed marked enlargement of the mesenteric lymph node in early stages (3 & 6 months post infection). Thickening and mucosal corrugation in the jejunum and ileum, enlarged and oedematous mesenteric lymph nodes, dilatation of lymphatics and and gelatinization of mesenteric fat were observed in later stages (9 and 12 months post infection). Histological lesions characteristic of paratuberculosis were more pronounced in later stages of infection 9 & 12 months post infection. Immunohistochemistry for detecting cellular reaction of CD2+, CD4+, CD8+, CD25+, MHC I and MHC II in the intestine and mesenteric lymph nodes revealed more reactive cells in infected goats compared to in-contact and uninfected control goats.

A prevalence study of caprine paratuberculosis was also carried out by conducting Interdermal skin test (Johnin test) and examination of faecal and serum samples collected from organized and unorganized goat farms of Nepal. At farm I 8 goats (7.5%) were positive in DTH., 29 (14.14%) in faecal smears, 5 (2.4%) in faecal cultures and 2 in PCR. In the same farm 25 goats (12.19%) were positive in AGID test and 41(20%) were positive in ELISA. At farm II (4.05%) samples were positive and none in AGID test. At farm III all goats were found negative in ELISA. Farm II and III were negative in the faecal smear examination, faecal culture and faecal PCR. In organized farm 29 (10.50%) goats were positive for acid fast bacilli in faecal smears and none were positive for faecal culture and PCR. 17 (6.66%) goats were positive in the ELISA and only 1 (0.30%) goat was positive by AGID.

Dr. U.M. Singh got his M.V.Sc. in Veterinary Pathology from TNUVAS, Chennai and his thesis entitled "Studies on aflatoxicosis in Rabbits" during 1992. He has been working in Animal Health Research Division of NARC as Pathologist.

Talk Programs

"Economics of Plant Breeding: Why it is important to release improved varieties faster" by Dr. Sushil Pandey, Deputy Head, Socio-economic Division, International Rice Research Institute (IRRI) on 1 August 2005 at NARI Conference Hall, Khumaltar, Lalitpur.

●
"Impact of Global Warming on Food Security of Nepal" by Dr. Kishore Sherchand, Senior Scientist and Chief of Agri-Environment Unit, Nepal Agricultural Research Council (NARC) on 18 September 2005 at Ministry of Agriculture and Cooperatives, Singha Durbar, Kathmandu.

Meeting of Nepal Mushroom Association

General Meeting of Nepal Mushroom Association was held at NARI Conference Hall, NARC, Khumaltar on 5 August 2005. The meeting was chaired by Dr. Keshari Laxmi Manandhar, retired Senior Plant Pathologist. The Association involves people engaged in mushroom cultivation and development all over the country.

Meeting on Fishery Program at Kaligandaki'A' Hydro Project

Nepal Agricultural Research Council (NARC) and Nepal Electricity Authority (NEA) had a meeting on Kaligandaki Fishery Program on 8 August 2005 at NARC Building, Singhadurbar Plaza.

Interaction on Agriculture Journalism

An interaction on promoting agriculture journalism in the country was organized at NARC Building, Singhadurbar Plaza on 16 September 2005.

The program was held to introduce the newly formed Nepal Agricultural Journalists' Association (NAJA). NAJA's objectives and its programs were highlighted in the program.

Major objective of NAJA is to work as a bridge between farmers, scientists, extension bodies, government and non-government organizations working on agriculture, marketing managers, and costumers, and to hold interaction between all the stakeholders to promote agriculture in the nation.

MoU on Agriculture Program on NTV

Memorandum of understanding between NARC, Ministry of Agriculture and Cooperatives and Nepal Television was signed on 18 September 2005.

The MoU was signed to continue the daily agriculture Program that is in regular operation for the last eight years with a joint cooperation between Ministry of Agriculture and Cooperatives, Nepal Agricultural Research Council and Nepal Television in order to enhance the knowledge level of the framers/clients in agricultural technologies.

The agriculture news is telecast every Friday evening that covers new innovative information, major events on agriculture and related sector, farmers' success stories etc.

Resource Efficiency in Agriculture Research

- Sudeep Gautam and Sabita Shrestha

New technologies in agriculture can help Nepal achieve its goal of poverty reduction and enhance national economy. Agriculture is the most important sector that we can rely on for building up the national economy and for improving livelihood of rural people by harnessing food security, employment and income generation, and nutritional improvement. It is also the most reliable sector in order to make Nepal's meaningful presence in the global market as a member of World Trade Organization (WTO). What is most necessary is to divert Nepalese agriculture from subsistence-oriented activities into commercialized business of the people that helps in export promotion and import substitution.

Agriculture research is one of the most important components of development in the country that, with new technologies, gives opportunities to shift agriculture system into more profitable business through increased productivity of commodities with no or minimum hazard to environment balance. Some approaches appeared in the past or are still followed for increasing production that did not consider environmental aspects but the negative impact it caused in long run has now been widely realized. The analysis of cost, benefit, socio-economic and environmental impact has to be a major component in assessing any new technology. Cost of research is another important part to be considered. A research takes place a series of events at different phases that involves a good deal of resources-money and time. It is important to minimize the cost in generating technologies and disseminating to farm level.

Participatory approach has been found very effective in technology development. NARC has adopted this approach in planning its programs and conducting research. There are several outreach research sites at different locations in the country where researches are conducted in participation of farmers on their fields by involving the extension people as well. This helps to minimize time and money as the farmers, the ultimate target clients, have direct feedback and their own conscience about the technologies. Farmer to farmer extension is very effective and faster.

Another way of minimizing cost in research is to avoid duplication of works. There have been many fragmented

research works done but have no proper documentation. These come to no knowledge of later researchers but disappear without follow-ups. NARC has been an apex body legally responsible for agriculture research in the country but there are other bodies that assign or conduct researches in agriculture without any notice of NARC.

It is necessary that NARC as per its mandate should lead the research or should at least have notice of programs before they come to effect. All the organizations involved in agriculture research need to have strong coordination for planning and implementing the research. The research programs and outputs have to be properly documented in database that can be easily accessed. This can help save resources and give better output.

The agriculture technologies have to prove in themselves that they can help to get better benefit to attract active population of the country that is moving away for work in different parts of the world. Although foreign employment helps to raise remittance, rural agricultural production is adversely affected as a result of labor shortage. But due to low productivity and insecure food supply they find no other way out. Many socioeconomic studies done by Outreach Research Division of Nepal Agricultural Research Council (NARC) have shown that an average household-product food lasts for 5-6 months only.

Agriculture research needs to address these problems developing appropriate technologies for higher production in quantity and quality that is linked to the reduction of poverty. In the sense of access to safe and nutritional food, even privileged consumers are poor in food security. Over two billion people globally subsist on diets that lack the essential vitamins and minerals necessary for normal growth and development. A majority of this belong to the South Asian Region. Agriculture research has to concentrate on to these issues more efficiently against the resource constraint.

As the cost of cereal production for Nepalese farmers is higher as compared to those of neighboring countries where the farmers get subsidy on inputs, it is necessary to give priority on high value crops like tea, coffee, large cardamom, ginger, off-season vegetables and other horticultural crops that have export potential.

TRAINING WORKSHOP/SEMINARS, STUDY & TOURS ABROAD (July - September 2005)

SN.	Name	Position	Subject	Duration	Country
1.	Mr. Ram C Munankarmi	S-3, Soil Science Div.	Coordinated Research Meeting	11-15 July	Bangladesh
2.	Dr. Ananda Kumar Gautam	S-4, NRRP, Hardinath	Rice Technology Transfer System in Asia	28Aug-11Sept	Korea
3.	Dr. Dhruva Thapa	S-2, Agri. Botany Div.	44th Annual Wheat and Barley Workers Meeting	27Aug-30Aug,	India
4.	Mr. Ram Chandrika Prasad	S-4, HMRP, Kabre, Dolakha	44th Annual Wheat and Barley Workers Meeting	27Aug-30Aug	India
5.	Mr. Ram Krishna Mahato	S-4, NMRP, Rampur	Maize Improvement Training	29Aug-7Oct	Mexico
6.	Mr. Hari Prasad Prasai	T-7, RARS, Lumle	Maize Improvement Training	29Aug-7Oct	Mexico
7.	Mr. Krishna Adhikari	Co-ordin, NMRP, Rampur	9th Asian Regional Maize Workshop	5-9 Sept	China
8.	Mr. Naresh Singh Thakur	S-4, Outreach Div.	9th Asian Regional Maize Workshop	5-9 Sept	China
9.	Dr. Keshav Babu Koirala	S-4, RARS, Lumle	9th Asian Regional Maize Workshop	5-9 Sept	China
10.	Mr. Bimal Kumar Baniya	Chief, Botany Division	SANPGR & GCDT Strategy Meeting	5-10, Sept	Malaysia
11.	Mr. Govinda Prasad Koirala	Chief, Agronomy Division	Administration/Finance/Research Mngm Training	9-18, Sept	India
12.	Mr. Dhruva Prasad Subedi	A-7, Administration	Administration/Finance/Research Mngm Training	9-18, Sept	India
13.	Mr. Basant Kumar Pandey	A-6, Administration	Administration/Finance/Research Mngm Training	9-18, Sept	India
14.	Mr. Dev Raj Dhakal	AF-6, Administration	Administration/Finance/Research Mngm Training	9-18, Sept	India
15.	Mr. Sanjib K Lamichhane	AF-6, Administration	Administration/Finance/Research Mngm Training	9-18, Sept	India
16.	Dr. Surya Laxmi Maskey	Director, Crop & Hort.	9th Annual Council Meeting for Partnership (CORRA)	9-11, Sept	Indonesia
17.	Mr. Diwakar Sharma	S-4, NMRP, Rampur	Monitoring of HMRP Activities	11-18 Sept	Bhutan
18.	Mr. Ram Bahadur Katuwal	T-6, ARS, Pakhribas	Monitoring of HMRP Activities	11-18 Sept	Bhutan
19.	Mr. Beda Nanda Chaudhary	S-4, NRRP, Hardinath	IPR W'hop & INGER Tech. Advisory Commt. Meeting	26 Sept-2 Oct	Thailand
20.	Dr. Kishore K. Sherchand	Chief, Ag. Env. Unit	7th International Carbondioxide Conference (ICDC7)	25-30 Sept	USA

BL 2047: A promising wheat variety for the Siwalik region

BL 2047 out of five improved wheat genotypes tested in FFT at NMRP outreach research sites viz. Shukranagar (Chitwan) and Rajahar (Nawalparasi) in 2004/05 has now been in high demand among the farmers.

It was selected with judgment from multidisciplinary team from NMRP along with DADO officials (Chitwan and Nawalparasi) in local farmers' participation that monitored the standing crop at the sites and also with the reaction, choice and preferences of farmers. Farmers in

leaf blight. The genotype is highly glabrous, which is an indicator of drought resistance. The problem due to its late maturity, as the farmers said, can be managed by planting early in the second week of November, immediately after rice harvesting. Based on its performance and good characters desired by farmers, this variety has been recommended for the process of release for the region. This variety is suitable for rain-fed and timely sown condition in the Siwalik region.

Field Monitoring



Rajhar in Nawalparasi



Sukranagar in Chitwan

both the OR sites preferred the genotype BL 2047 due to its longer and attractive spikes and, as some farmers reported, less infection by stored grain pest. Farmers' second preference was Gautam, which is a recently released variety.

The genotype BL 2047 is medium tall in height and late in maturity. It has longer spikes and showed resistant reaction to

NMRP, Rampur has been conducting wheat varietal improvement and selection in order to select varieties in Siwalik condition. The other genotypes included were BL 2196, BL 2217, NL 923, and BL 2064.

*Reported by B. R. Pandey,
NMRP, Rampur*

contd. from page 1

mt/ha and 'Rajarshi', late variety (136 days) has an yield of 2.8 mt /ha. The high yielding early variety 'Baidehi' and the late variety 'Rajarshi' are found to have more protein and oil contents.

Rapeseed

The rapeseed variety: 'Preeti' has been recommended for terai, inner terai and lower valleys under irrigated condition and has yield potential of 2.6 mt/ha. and the variety 'Unnati' has been recommended for western terai, inner terai and lower valleys in rainfed condition and has an yield potential of 2.2 mt/ha. Maturity period of the varieties is 83-86 days. Both of the varieties have bigger seed grains with higher oil contents as compared to those of previously released varieties: 'Pragati' and 'Bikash'. The varieties are also disease and pest resistant

contd. from page 1

Raj Pandey, National Program Director, DLGSP.

Decentralized Governance Support Program (DLGSP) is being implemented in different 662 VDCs of 60 districts of the country with the support of United Nations' Development Program (UNDP) and Norway with the objective of enhancing effective and meaningful participation of people in the local governance process ensuring improved access to socio-economic services by the rural poor, particularly women, Dalit and disadvantaged groups.

Editor: Dr. Ram Prasad Sah, Executive Director
Nepal Agricultural Research Council (NARC)
Singh Durbar Plaza, P.O. Box No. 5459, Kathmandu, Nepal
Phone: (977-1) 4256837, 4262650, **Fax:** 4262500,
Email: edharc@narc.net.np

Published by:

Communication, Publication and Documentation Division
Khumaltar, Lalitpur,
Phone: (977-1) 5523041, 5525704, **Fax:** 5521197,
Email: cpdd@mos.com.np, cpdd@narc.gov.np

Website: www.narc-nepal.org

Bhola Man Singh Basnet : Division Chief (Technical Editor)
Krishna Raj Bhatta : Editor
Kul Prasad Aryal : Scientist (Editor)
Manoj Kumar Thakur : Technical Officer (Associate Editor)

To

Printed at :