



A Quarterly Newsletter of Nepal Agricultural Research Council (NARC)

Vol. 11 No.2

April - June 2004

National Outreach Research Workshop

With the theme "Agricultural Technologies for Poverty Reduction", the Seventh National Outreach Research Workshop was held at Khumaltar on 24-25 June, 2004. The workshop organized by Outreach Research Division of Nepal Agricultural Research Council (NARC) had the objective/purpose to bring many organizations and stakeholders both in private and public sectors together in one common forum to learn and share experiences in order to frame a suitable future strategy and to strengthen coordination and collaboration among them to work on effective implementation of Research and Development programs for the benefit of resource poor farmers and disadvantaged groups. The workshop

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National Summer Crops Research Workshop

The 24th National Summer Crops Research Workshop was by NARC at Khumaltar from 28-30 June 2004. The three-day workshop was held with the objectives to review the research activities on summer crops in the past years and their outcomes; to discuss existing problems; and to recommend technologies for release and pipeline. The workshop was participated by scientists/researchers from National Commodity Research Programs, Regional Agricultural Research Stations, Disciplinary Divisions of NARC; Department of Agriculture, District Agriculture Development Offices of Department of Agriculture; NGOs and Donor agencies. In the workshop, working papers about the researches on various summer crops: rice, maize, finger millet, buckwheat,

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Sugarcane Varieties Released

Variety Approval, Release and Registration Sub-Committee under National Seed Board that met on 1st April 2004 officially released two sugarcane varieties for farmers to commercially cultivate in terai and inner terai.

The varieties are released along with complete packages of practices after years of research and experiment at research station and farmers' field in different 7 districts by Sugarcane Research Program, Jitpur, Bara with the help of disciplinary divisions and Agro Enterprise Center (AEC).

The two sugarcane varieties released with the name "Jitpur-3" and "Jitpur-4" are comparatively higher yielding with high sucrose content and resistant to disease and insects.

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Nepal Development Forum Meeting Held in Kathmandu

The Nepal Development Forum (NDF) Meeting was held in Kathmandu from 5-6 May 2004. The meeting was participated by representatives from various donor countries, agencies and high government officials and was formally inaugurated by the then Rt. Hon'ble Prime Minister Surya Bahadur Thapa. In the

meeting Government of Nepal presented National Development Plan and proposal. Rt. Hon'ble Prime Minister in his inaugural address said the government is committed to achieve the goal by modernizing and commercializing agriculture sector. "Without strengthening rural economy through changes in agriculture sector, there is no hope for economic transformation and poverty alleviation".

Development Exhibition

At the occasion of the NDF meeting at Birendra International Convention Center, an exhibition on different development activities was held. Different organizations including NARC participated in the exhibition. The then Rt. Prime Minister opened the Exhibition.



The then Prime Minister Surya Bahadur Thapa observing NARC stall (Inset)

Photo: Rajendra Bajracharya

ISSUE HIGHLIGHTS

- National Summer crops Research Workshop
- National Outreach Research Workshop
- Sugarcane varieties released
- 13th NARC Day
- Nepal Development Forum Meeting held
- National Bio-diversity Fair organized
- Review and Planning workshop on DFID funded project
- Workshop on organic pest management

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

13th NARC Annual Day

13th Annual Day of the establishment of Nepal Agricultural Research Council (NARC) as an autonomous organization was observed with a special function at NARC, Kathmandu on May 7, 2004. The function was inaugurated by the Hon'ble Member of the National Planning Commission (NPC) Dr. Hari Krishna Upadhyaya as the Chief Guest. The Secretary of the Ministry of Agriculture and Cooperatives Mr. Purna Prasad Manandhar Chaired the Function. The function was attended by representatives from different government and non-government institutions, donors, financial institutions, foreign agencies, print and electronic media, NARC officials, employees and others. The Hon'ble Member of the NPC in his inaugural speech said that the agriculture is the key sector that the country solely depends on for the ever current challenges of poverty alleviation, food security and employment. It is the source for subsistence and engine for economic growth. Hence, it is in the high need for modernizing the agriculture sector in order to meet the national needs and to improve the livelihood of the people. He said there

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Workshop on Organic Pest Management

A National Workshop on "Organic Pest Management and Certification Systems for Biodiversity Conservation in Nepal" was organized jointly by National Agricultural Research Institute (NARI/NARC), Himalayan Resource Institute (HIRI), Sustainable Soil Management Program (SSMP) and Agriculture Concern Society (ACoS) on May 21, 2004 at NARC, Khumaltar, Lalitpur.

The workshop was held on the occasion of International Biodiversity Day 2004, with the view to advocate on the important aspects of Organic Pest Management and Certification Systems for the development of organic agriculture and biodiversity conservation in Nepal.

In the workshop, different papers on the organic pest management activities and status were presented. Discussion on the need of certification system in organic agriculture was also held.

National Biodiversity Fair Organized

On the occasion of International Biodiversity Day 2004, a National Biodiversity Fair was held at Birendra International Convention Center, Baneswor, Kathmandu on 22-24 May 2004.

The objective of the Fair was to enhance the knowledge of the younger generation by helping them to realize about the importance of bio-diversity to day to day life and to encourage them to work for its conservation.

In the fair, different types of cultivated and uncultivated plants, domesticated and wild animals in live form or in pictures/film/documentary, books and publications about biodiversity and bio-diversity conservation and utilization activities by different organizations were displayed.

The Fair was organized by HMG, Ministry of Forest & Soil Conservation jointly with Sahayog Research and Service Center and Miss Nepal-2003. Other collaborating organizations were ICIMOD, WWF, IPGRI, UNDP, IUCN, ITDG, Care Nepal, USC Nepal, Dabur Nepal, Action Aid, NARC, Department of Agriculture, FNCCI, LI-BIRD, Department of Livestock, PABSON, N-PABSON, Schools and Colleges.

Review and Planning Workshop on DFID-funded Project

Second Regional Review and Planning Workshop on "DFID-funded Project: Participatory research to increase the productivity and sustainability of wheat cropping systems in the Eastern Subcontinent of South Asia" was organized at Godavari, Kathmandu on June 14-18, 2004.

The five-day workshop organized by DFID/CIMMYT/NARC/DOA - PVS Project was participated by Scientists and Extensionists from India, Bangladesh and Nepal plus farmers who shared experiences on the participatory plant breeding (PPB), participatory variety selection (PVS) for dissemination of newly released varieties with technologies and seed multiplication and distribution. The review workshop also considered other practices like resource conservation technologies (zero/minimum/reduced tillage), in other words integrated crop management (ICM) as a whole, post-harvest, processing, value addition, consumer taste, linkage with industries and market etc.

Fingermillet Project Review and Planning Meeting

The National Annual Review and Planning Workshop on Fingermillet IFAD/IPGRI/MSSRF-NUS Project was held on April 23, 2004 in Kathmandu.

In the workshop, progress reports from the two partners of the Nepal component, NARC and LIBIRD were presented followed by discussion on the past activities and future strategies. Different activities were proposed for next year in the thematic areas: i) Varietal evaluation and production management ii) Socioeconomic study and local knowledge documentation iii) Value addition, project diversification and market promotion vi) Linkage and public awareness. Representatives from IPGRI, IFAD/IPGRI/MSSRF-NUS Project, NARC, LIBIRD, Agricultural Development Offices, Agro-entrepreneurs, and farmers participated the workshop to share the project experiences and formulate strategies for future research and uptake of findings.

NARC and LIBIRD have been the implementing parts the Nepal component of the global project "Enhancing the contribution of Nutrition but Neglected Crops to Food Security and to Incomes of the Rural Poor",

The global project is supported by International Fund for Agricultural Development (IFAD) through International Plant Genetic Resources Institute (IPGRI) South Asian office in which the Asian component of the project is coordinated by MS Swaminathan Research Foundation (MSSRF).

News In Brief

- Orientation training for newly appointed scientists on 15-18 June 2004 organized by National Agricultural Research Institute (NARI)
- A group of 20 trainees from INSAN visited NARC, Khumaltar on 20 May 2004.
- Field Workshops on Resource Conservation Technologies at Agronomy Division and on Plastic House Technologies at Horticulture Research Division were held on 5 May 2004.

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after presentation and discussion on different research and development activities, made out suggestions on improving the access of small and marginal farmers to agricultural technologies and to improve NARC-led participatory technology development (PTD) process.

The workshop was participated by over 100 delegates that include NARC scientists, representative from MOAC, DOA, DLS, Livestock Development Project, IPM Project, SSMP, IAAS, CIMMYT, CEAPRED, LIBIRD, Water Users Associations, Plan Internationals, CARE Nepal, etc. Dr. HK Upadhyaya, Hon'ble Member of National Planning Commission inaugurated the workshop. The workshop concluded with the following suggestion and recommendations.

Recommendations

Proven technologies for dissemination

RICE

RP1017 (In Eastern Development Region)
OR-367 (In Central Development Region)
B6144F-MR-6 (In Western Development Region)
BPI-3-2 (In Mid and Far Western Development Regions)

MAIZE

HPW and HPY (In rain-fed condition)

WHEAT

BL 1887, BL 1923 (In Eastern, Western and Far Western Development Regions)
NL 750 (In Mid and Far Western Development Regions)

LENTIL

ILL 7723 (In Mid and Far Western Regions)

BLACKGRAM

Rajakochautara and Barabise (In Western Region)

PIGEONPEA

ICPL 95009 (In mid terai)
Pusa 9 (For Rabi season)

TOMATO

Bises (Off season) and N-162 (In Hills and Terai)

ONION SET

N-53 (Off season in Hills and Terai)

CAULIFLOWER

Snow King, Silver Cup 60, Whiteflash, Snowcrown and Snow Mystique (In Hills)

POTATO

362256148 (In Mid and Far Western Regions)

CABBAGE

NS 21, NS 25, and NS 27

Other Proven Technologies

- Pensibao+Urea=165kg/tree in mango crop
- Saffron (room condition)-1.58 kg/ha
- Rice seed selection based on sp. Gravity principle (1 ltr of water+225gm urea or 200 gm of salt)
- Rice + fish with trench – yielded fish 529 kg/ha and rice 12% yield increased
- Turkey rearing – male 10.9 kg and female 6.4 kg at 10.5 month
- Bokashi in vegetable production 100g/plant with compost 20 ton/ha
- 25 kg potassium to be applied in rice and wheat in NWRP command area
- Zero tillage technology in wheat should be scaled-up
- Manual and power rice transplanter should be promoted
- SRI technology should be disseminated with different stakeholder

General Suggestions

- Domain should be defined based on Climate; Market; Socio-economic situation; Industry
- Uptake pathways and scaling up through demonstration in larger plots, stakeholders workshop and through different media
- Strong linkage with MOU in central level and develop indicators
- ATWG workshop implementation guidelines be endorsed by MOAC
- PTD modalities-different for different disciplines/commodities
- Better Information system
- More financial and human resources needed for effective scaling up
- Complete set of core scientists in each ARS/RARS commodity program
- Technology registration/recommendation
- Formal linkage and role between ORD and RARS/ARS/commodity program.
- PTD modalities should be developed for fruits and plantation crops, animal science
- Attractive incentives to DADO
- Consistency in terminology used within NARC in PTD
- Easy movement for on farm research eg hiring vehicle, budget provision
- Improvement in M and E

Animal Nutrition Research and Outcome

Animal Nutrition Division (AND) of the Nepal Agricultural Research Council (NARC) is responsible for executing animal nutrition and feeding related researches in order to generate appropriate technologies for varying physiographic conditions and farming system in Nepal. Since its establishment, nutritional analysis of various feeding materials like crop residues, fodder leaves, concentrates has been done for generating database, which is the basic step towards formulating Nepalese feeding standard. At the same time, AND is capable of generating some cost efficient and sustainable technologies. Some of the important research findings and technologies developed by AND are:

- In lactating cross-bred dairy cow ration, 25% of the concentrate mixture can be replaced by cotton seed meal without any adverse effect in total feed intake, apparent digestibility as well as milk yield and its constituents (Pandey et al., 1996).
- Daily live weight gain of castrated male goat increases by 7gm with supplementation of complete mineral mixture in fodder tree leaves based diet (Pandey and Sainju, 1997).
- Feeding of Urea molasses mineral block to the lactating cross bred dairy cows improves the efficiency of utilization of fibrous crop residues like straw and improves the quantity as well as quality of milk yield (Pandey et al., 1998).
- The practice of feeding Badahar produces better response than Dabdabe among growing female goat. Tanki and Nimaro are of decreasing order of importance with regard to the body weight gain and nutrient digestibility (Khanal and Upreti, 1998).
- In the concentrate mixture for Angora rabbit, maize can be replaced by brewer's grain upto 16% without affecting total body weight gain and wool production (Tiwari et al., 2003).
- With the supplementation of methionine and lysine in broiler ration, Crude Protein level can be reduced to 19% from 23% of NRC recommendation in case of starter and 16% from 20% in case of finisher without affecting final body weight and feed efficiency (Osti et al., 2003).

(Reported by Dr PR Regmi, Animal Nutrition Division, NARC)

Contd. from page 1 (Summer crop..)

summer oilseed crops, grain legumes and jute were presented and discussions on different issues were held followed by group presentation about the recommendations on technologies for release, pipeline technologies, and some system and management issues. The workshop after deliberate discussions in three different groups made out the following recommendations.

RECOMMENDATIONS

RICE

Technologies for release:

- CNTLR 85033 (Fine aromatic rice for Terai and river basin)
- BPI 3-2 (Fine and early variety for Terai and river basin)
- OR 367 (For terai and river basin)
- NR 1190-24, BR4962-12 (Normal season rice for rainfed lowland of Terai and river basin)
- B6144FMR (Early/Bhadiya for rainfed condition of terai and river basin)
- B6149FMR-7 (Early/Bhadaiya for terai and river basin)
- NR10414-25 (Normal season fine rice for mid-hills)
- NR10353-8 (Normal season rice for mid-hills, foot-hills and river basin)
- Barkhe 2001, Barkhe 3004 (Normal season medium fine rice for mid-hills)
- Sugandha-1 (Normal season aromatic rice for mid-hills)
- NR-10288-10J-2J, NR- 10288-015J-015J-7 (Blast resistant)
- NR 1769-20-2-2-3-4 1 (Sheath blight resistant)
- Pusa 834, NR 1558-76-1-1-2-3-1-2-3, FRX 29F3B-5F6BF7, FRX 29F5B-5F6BF8, Sabitri, Radha 11, Jaya, NR 1743-1-2-4-1-2-2, BR 802-78-2-1, NR 1736-4-6-2-1-1-1 (Sheath blight resistant)
- Eswarakora, Velluthancheera, PTB 21 and Aganni (Gall midge resistant)
- 45 rice genotypes in NRBPHN and 4 varieties MUDGO, ARC-10550, IR13146-45-2-3-1 and PTB-33 in IRBPHN (Brown plant hopper resistant)
- Community seed production model (Terai to Inner-terai)
- RP1017 (to be scaled up in Eastern Terai)
- Barkhe 1027, Sughnadha-1, Panta Dhan-10 (early maturing, suitable for upland low fertility condition, good post harvest quality for E & C Terai)
- Sarju 52 OR 367 (for Western Terai)
- Barkhe 2001, Kanchi Masuli (Suitable for partial irrigated and medium fertility condition, good post harvest quality for E Terai)
- Direct seeded Rice on puddled soil (pre- germinated seeds) by drum seeder
- Direct seeded rice in unpuddled soil with power tiller drill/zero till drill/ bed planter
- Potassium effect has positive effect, scaling up is needed
- Azolla use should be promoted @ 2 t/ha
- Intercropping of upland rice with black gram/soyabean
- Rampur Masuli and NR601-1-1-9 can be grown with 55 to 65 days old seedlings
- Rice-potato-mungbean, rice-lentil-mungbean
- Imidacloprid (Confidor 200 SL @ 0.08%) <chloronicotinyl insecticide>

Technologies in pipeline

- NR601 (fine Early rice for Mid and Far Western Region)
- B6149-F-MR-6 (for Medium Upland)
- Aromatic-CNTLR 85033-9-3-1-1 (for Terai)
- WAB 99-17 (Aromatic)
- PR-101 (Early maturing, Suitable for Rice – vegetable

system, good cooking quality)

- Judi 572, Judi 566 (Early maturing, Suitable for Rice-vegetable system, good cooking quality Partially irrigated, Medium
- SRI technology
- Rice transplanter machine
- Rotary weeder And Almix-post emergence herbicides for weed control
- BRRRI Dhan 36 and Gautam (Boro Rice)
- IR 60267-PMI-3-1-3-1 and IR 70 -181-32-PMI-1-1-4-2 (Fine and BLB resistance)
- Kaohsing-139 (Normal season in Mid hill)
- NR10342-29 (Normal season Fine grain for Mid hills)
- NR0288-15 (Cold tolerance for High hills)
- NR10293-5J (Cold tolerance for High hills)
- LR93002 (Cold tolerance Medium fine for High hills)
- Khumal-11, Chandannath-1, NR-10285 (Boro Rice) (for milling and physico-chemical quality)
- The Vietnamese model rice husk stove more efficient than local

MAIZE

Technologies for release:

- ZM 621 (Improved for husk cover, Full season for Mid hills)
- POP 44 C10 (Full season for Mid hills)
- Upahar (Yellow grain, lodging tolerance for Full season in Terai, Inner terai and Foot hills)
- Arun 4 (Early Terai/Midhill)
- Hill pool yellow and Hill pool white (for Full season)
- Pre-and post-harvest training on seed production (in Western hills)
- Traditional use of tobacco leaf and ash (Western hills)
- Two hand-weeding at 25 and 50 days after seeding to control Pre- and post-harvest pests (Western hills)
- Complete package of technologies-model (Western hills)
- Mother and baby model in food crops appropriate for dissemination in remote areas of Mid-hill districts
- Good husk cover for lodging and weevil resistance (Western Development Region)
- Maize based vegetables-relay/intercropping (Mid and high hills)
- Weed management with modified tools (Mid & high hills)
- IPNMS-Maize based system (for Terai and hills)
- Preparation of quality FYM with black plastic sheets for Soil fertility
- Maize/soyabean intercropping
- 100 X 25 cm for maize 2 rows at 20 cm for soybeans (Mid and High hills)
- N and density in OPV full season maize and hybrid (66660) (Terai)
- Liming for red clay soils to improve pH (for Mid-hill and Tar river basin)
- Integrated chemical fertilizer + Compost
- Organic + Inorganic maize (1:1) in potato + maize cropping system (High hills)
- Stripping of lower third leaf sheath(to check upward movement of Banded Leaf and Sheath Blight)
- Use of Validamycin @ 300 ppm (to control Banded Leaf and Sheath Blight)
- Use of *Trichoderma harzianum* and *Pseudomonas fluorescens* (to control Banded Leaf and Sheath Blight)
- Bangalore 9745, Manakamana-2 (Northern leaf blight resistant)

Technologies in pipeline

- *Trichoderma koeningii* (TSB-55, THB-1 and TSB-67 isolates) against Banded Leaf and Sheath Blight)
- CA00310, CA00102, CML 451, RL 5, CLQ 6602 and CA00314 (Southern leaf blight resistant)
- CLQ 6601, CA 00310, CML 165, ZM-621 Manakamana-3, Ganesh-1, HPW and HPY (Northern leaf blight resistant)
- *Trichoderma* as biocontrol against sheath blight
- Bavistin spray @2g/lit of water against Anthracnos
- POP 45 C8 (Full season, Yellow grain early Mid hills)
- POOL 16 E and POOL 17E (X-tra early for Terai/Midhill)
- CML161xCML164, CML161xCML165 and CML161xCML172 (QPM) Hybrid (Terai/Inner Terai/Foot hills)
- ACROSS9331 (Full season in Terai)
- (Terai/Inner Terai/Foot hills)
- Bangalore 9745 (Short duration for Mid hills)
- KYM33 x KYM35 (Hybrid Orange Flint)

OILSEEDS

Groundnut

Technologies for release:

- M-13, ICGV-86300, ICGV86124, ICM (For Terai and Inner Terai)

Technologies in Pipeline:

- ICGV-91074, ICGV-92167 (For Terai)
- ICGV-92167 (Short duration for Terai)
- ICGV-88473, ICGV-86928, ICGV-91060, ICGV-91104 and ICGV-91089 (Tolerant to leaf spots)

Other technologies for release

- ICM technology (Improved variety, B4), Seed rate: 2.3 kg Kernel/katha, Seed treatment with Bavistine 2-3 g/kg seed, Use of Rhizobium in new areas, 3 Kg DAP/katha, Insecticide 1-2 spray (need based), Fungicide 1-2 spray (need based)

HILL CROPS

Fingermillet:

Technologies for release:

- GE 5016 (Mid hills), GE 5176 (Foot hills)
- Post harvest research to diversify consumption (confectioneries) in CDR

Technologies in Pipeline:

- GE 5177 and GPU 0025 (Mid hills)
- ACC 523-1 (Suitable for relay cropping in Mid hills)
- KLE-103, KLE-139, KLE-222, KLE-124, KLE-159 and GE-516 (Immune to Finger and neck blast)
- KLE-150, KLE-169, KLE-178, KLE-184, KLE-192, KLE-197, KLE-240, IGE-156, Acc.# 433-1, Acc.# 2334-2, Acc.# 2402, Coll.#GYN-53, KLE-216, KLE-224 & Acc.# 2452 (Cercospora Leaf Spot Resistant)
- Coll.#KN-510, KLE-123, Acc.#506-1 & Acc.#2334-2 (Blast resistant /Immune)
- Acc.#2452, KLE-224 & KLE-216 (Cercospora leaf spot resistant/ immune)
- Product development, promotion - Flour confectionery, Malting, Supplementary weaning food

GRAIN LEGUMES

Technologies for release:

Cowpea

- IT86D792 Bold seed size, suitable for dual purpose (Vegetable and pulse, Soft and thin seed coat Central to mid western terai)

Mungbean

- VC6372 (45-8-1) (Bold and attractive seed (6gm/100seed), Resistant to MYMV, 85% matured at first picking, Central to mid western terai)

Soybean

- PK-416 (Early maturing, medium bold seed and fit in Maize- Soybean-toria cropping, Terai and inner terai)

Soybean Vegetable type

- AGS352 (For Kathmandu valley and similar kind of environment)

Pigeonpea

- Pusa-9 and Pusa-14 (Rabi season -September Planting) Medium bold seeds and suitable for late planting in Central to Mid Western Terai
- ICP7035 (Resistant to wilt and SMD, bold seed, suitable for vegetable and fodder for Central to Mid Western Terai)

Technologies in Pipeline:

Pigeonpea

- Dhanusha Local and ICPL 95008 (Bold grain for Mid and Far Western Terai)

Mungbean

- VC6370-92 and VC6141-90 (Central terai/inner terai)

Soybean

- PK7394 (tolerant to cercospora leaf spot, Central terai/inner terai)
- IARS-87-1 (Central terai/inner terai)

Soybean vegetable type

- AGS380 (Kath. valley and similar kind of environment)

Blackgram

- Barabise local and Rajako chautaro (High yielding for Western mid hills (600masl)
- Intercropping combination of Blackgram with Niger in spacing of 40 cm between two rows of black gram with one alternate row of Niger in spacing of 30 cm
- Application of 40 kg/ha Phosphorus and seed treatment with 0.25% Ammonium or sodium Molybdate

General Suggestion

- Interaction with scientist/farmer/Stakeholder/ industrialist/entrepreneurs/village level workshop/ farmers day
- Researches on integrated way (holistic) and coordination within and outside NARC environment
- Improvement of communication and IT facilities
- Policy research and socioeconomic study
- Establishment of national level data/information knowledge bank (Technology data bank, web page etc)
- Strong core outreach research team at central and regional level
- Training and promotional activities for scaling up
- Program level linkage be reflected in target
- Multi disciplinary and multi institutional approach
- Seed Processing units for breeder and foundation seeds, laboratory facility and Trained human resources
- Effective participatory research with stakeholders
- Plant Breeders' Meeting at regular level, once in two years (Botany Division-Country level)
- Coordination between bio-tech Unit and breeding programs
- Institutionalization of PVS approaches (gradually endorsed the approach)
- Use of GIS/match plant soil and climate for variety recommendation

Animal Health Research and Technologies

With a suitable geo-climatic environment, topography, soil, and other natural resources, the livestock sector has been one of the most important sectors that can greatly contribute for poverty alleviation and overall development of the country. However this has been jeopardized due to prevalence of several health related problems associated with mortality and reduced productivity of farm animals in different agro-ecological regions of the country.

Animal health research in the country is striving for generation and verification of technologies for prevention, control and treatment of diseases and improvement of animal health to increase livestock production and productivity, and safeguarding veterinary public health. Only the technical interventions through appropriate research and development activities can streamline livestock and poultry development in the country.

The research planning on animal health has to be based on farmers' needs with feedback from the field veterinarians and farmers. Responsibility of implementation of the programs on scaling up of recommended technologies on animal health, should be shared by both research and development authorities. Training of this kind can be considered as an interface of the process.

Since last three decades, animal health research in the country is focusing mainly on the diseases of economic importance for the development of their prevention and control programs. During this period, major diseases of economic importance have been identified and prioritized. These include:

- Bovine Health Problem: Foot and mouth disease, endo-parasites, reproductive disorders and associated infertilities, mastitis, ecto-parasites, haemoprotozoan diseases, specific infections (HS, BQ, Anthrax), mycotoxins in feeds, non-specific diseases (diseases of unknown etiology).
- Sheep and Goat Health Problems: Endo and Ecto-parasites, enterotoxaemia, PPR, kid mortalities, abortions, respiratory disease complex
- Poultry Health Problems: Avian neoplastic diseases, respiratory disease complex, infectious bursal disease, Ascitis, new castle disease, salmonellosis
- Pigs and Mono-gastric Animals Health problems: Endo and Ecto-parasites, piglet mortality, foot and mouth disease, swine fever, mange and skin infection, agalactiae in sows.

Focus and priorities:

- Stream lined research system related to commodity research programs for different niche
- Research verification of imported technologies.
- Improvement of local technology
- Information system of research data
- Skilled and semi-skilled field veterinarians for field level services
- Farmers empowerment in commercial livestock farming
- expansion of technical capacities
- Linkage and coordination

(Reported by Dr KP Paudel, AHRD, NARC)

NARC Scientist: Recent Ph.D. Holder



Mr. Devendra Gauchan, Senior Scientist (S4), NARC obtained PhD degree in April 2004 from the University of Birmingham, United Kingdom. Dr. Gauchan was awarded International Plant Genetic Resources Institute (IPGRI) grant to focus his PhD research on Economics and Policy Incentives to Conserving Crop Genetic Diversity in Nepal. His PhD research grant from IPGRI was funded by various sources such as DGIS (the Netherlands Government), Biodiversity Economics (European Union), IDRC (Canadian Government) through Nepal component of the *In Situ* Conservation of Agrobiodiversity On-farm Project. Part of his research funding also supported by Genetic Resource Policy Initiative (GRPI) Project, Nepal.

In his PhD research, Dr. Gauchan focused his research work in Bara and Kaski ecotype of the Nepal component of *In Situ* Agro biodiversity Conservation Project using the rice crop to analyse variety choices of farmers and plant breeders as well as the policy and market incentives that influence these choices. He developed a methodological tool to identify, prioritize and predict genetic resources of (i) high private value based on farmers' perception and (ii) high public value based on the opinions of plant breeders and conservationists. By combining revealed preferences of farmers and stated preferences of plant breeders, genetic resources of interest to both farmers (private value) and society (public value) are identified and a strategy for a least cost-approach to conservation is suggested. In addition, institutional and market analyses were carried out to understand market based and policy induced (dis) incentives that influence conservation of rice diversity on-farms. Econometric analysis was carried out to identify the economic determinants of on-farm rice diversity and to predict the location and profile of farmers that have high likelihood of maintaining socially valued rice genetic resources. Study also focused to analyse the possible trade-off in the policy designed for on-farm conservation of rice genetic diversity in Nepal. The findings showed that in the changing local and global economic context, on-farm conservation of genetic resources of potential social value could be sustained with the support from formal sector scientists (conservationists and plant breeders). Finally issues are raised on the development goals, incentives and equity implications of the findings for designing and sustaining on-farm conservation programs.

Dr. Gauchan was a recipient of Winrock-Ford International Fellowship for his MS studies in Thailand and a Colombo Plan Scholarship for his B.Sc Agriculture studies at the University of Agricultural Sciences, Bangalore, India. He was also a visiting Science and Technology Agency (STA) research fellow at National Research Institute of Agricultural Economics, Tokyo, Japan.

Talk Programs Held at NARC

"The Effect of Soil Solarization on the Biological Community in Nepal Rice-Wheat Cropping System" by Mr. Steve Culman, Graduate Student, Cornell University, USA on May 21 2004 held at Soil Science Division organized by NARI/NARC

"Shitake Cultivation: Technology and Prospects" by Dr. Keshari Laxmi Manandhar, Executive Director/ Project Coordinator, CAT on April 23, 2004 at NARC Khumaltar organized by Society of Agricultural Scientists (SAS/N)

"Evaluation of Anthropogenic and Biophysical Factors in Relation to Soil erosion in the Foot-hills of Shivaliks" by Mr. K. B. Thapa of Soil Science Division on 30 April 2004 organized by Soil Science Division

TRAINING WORKSHOP/SEMINARS, STUDY & TOURS (April - June 2004)

S.N.	Name	Position/Discipline	Subject	Duration	Country
1.	Dr. Ash Kumar Rai	Chief/Fish Res.Div.	Tilapia Culture in Bangladesh: Constraint & Potentials	4-5 April	Bangladesh
2.	Dr. Ram Pratap Sah	Director/Crop & Hort.	Second Project Steering Committee Meeting	5-11 April	China
3.	Dr. Surya Prasad Pandey	Director/Planning	Second Project Steering Committee Meeting	5-11 April	China
4.	Mr. Ram Krishna Neupane	S-4/Legume.Res.Prog.	Second Project Steering Committee Meeting	5-11 April	China
5.	Mr. Ram Narayan Chaudhari	S-4/Oilseed Res.Prog.	Second Project Steering Committee Meeting	5-11 April	China
6.	Mr. Subash Ghimire	T-5/Fish Res.Div.	IFF-2004 Integrated Fish Farming Training Course	15April-13July	China
7.	Mrs. Bhawana Shrestha	T-6/Monitoring Div.	W/S on the Social Science Component of the IRRI-CIMMYT-IFAD	24-26 April	India
8.	Mr. Ganesh Sah	S-4/Agri-tools Res.	“Reaping the Benefits” on Impact Assessment of Resource Conservation	5-7 May	Bangladesh
9.	Mr. Kailash Prasad Bhurer	S-4/RARS, Parwanipur	“Reaping the Benefits” on Impact Assessment of Resource Conservation	5-7 May	Bangladesh
10.	Mr. Dhan Bahadur Gharti	S-4/RARS, Parwanipur	“Reaping the Benefits” on Impact Assessment of Resource Conservation	5-7 May	Bangladesh
11.	Mr. Yug Nath Ghimire	S-4/Outreach Res.Div.	“Reaping the Benefits” on Impact Assessment of Resource Conservation	5-7 May	Bangladesh
12.	Dr. Hari Prasad Bimba	Chief/Bio-tech. Unit	Study visit and Observation tour on Collaborative Research of Bio-technology	1 May-16 June	Sweden & Denmark
13.	Mr. Hari Krishna Shrestha	S-3/Planning Division	Scientific Writing and Presentation Skills Course	17-28 May	Philippines
14.	Mr. Ram Prasad Sah	T-6/MaizeRes.Prog.	Bed and Zero Till Planting Technology for Integrated and Rainfed Wheat	20 May-20 June	Mexico
15.	Mr. Raghu Nath Pd. Sapkota	Executive Director	Observation tour on Agricultural Research in Australian Agri.Res.Institute	21-31 May	Australia
16.	Dr. Surya Prasad Pandey	Director/Planning	Reg. Meeting on Enhancing the contribution of nutritious but neglected crops	21-22 May	India
17.	Mr. Ram Prasad Upreti	S-5/Crop & Hort.	Reg. Meeting on Enhancing the contribution of nutritious but neglected crops	21-22 May	India
18.	Mr. Rajendra Darai	T-6/Legume Res. Prog.	W/S on Improving Income and Nutrition by Incorporating Mungbean	26-30 May	India
19.	Dr. Ram Pratap Sah	Director/Crop & Hort.	Third Steering Committee Meeting of CURE	2-4, June 2004	Thailand
20.	Dr. Madhusudan Pd. Upadhyay	S-4/Agri. Botany Div.	GRPI Training Team Building Meeting and Legal Experts	7-11 June	Canada
21.	Dr. Devendra Gauchan	S-4/Outreach Res.Div.	GRPI Training Team Building Meeting and Legal Experts	7-11 June	Canada
22.	Dr. Kishor Kumar Sherchan	S-4/Environment Unit	Seminar on Crop Simulation Model & 1st Int'l CLIVAR Science Conference	21 June-9 July	USA & Thailand
23.	Mr. Shrimat Shrestha	S-3/Engineering Div.	Seminar on Crop Simulation Model	28 June-9 July	Thailand
24.	Mr. Suresh Kumar Rai	S-3/Soil Science Div.	Seminar on Crop Simulation Model	28 June-9 July	Thailand
25.	Mr. Raghu Nath Pd. Sapkota	Executive Director	Observation tour on RWC's activities	17-24 June 2004	India & Pakistan

Contd. from page 1 (NARC Day..)

are remarkable achievements in technology generation, major indicator is the increased productivity but it needs to be doubled to meet the food requirement. NARC, with its organized scientific force, has great responsibility to assist the farming community through newer innovative technologies in different aspects of agriculture. The Agriculture Secretary, Mr. Manandhar



Photo: Rajendra Bajracharya

Contd. from page 1 (Sugarcane..)

Jitpur-3 has the potential yield of 79.29 t/ha of sugarcane in rainfed natural condition. Jitpur-4 gives a yield of 86 t/ha in irrigated condition.

Sugarcane is a major industrial crop in Nepal cultivated in 59,400 hectare with a total production of 23,0500 mt as for the year 2003/04.

Nepal Agricultural Research Council (NARC) has been conducting demand-driven research in collaboration with several sugar factories and sugarcane farmers.



Photo: Rajendra Bajracharya

Exhibition on NARC Day

from the Chair said, 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. The farming needs to be popularized among people as prestigious occupation. The technologies should be sufficiently and equitably transferred to farmers level, he added.

Executive Director of NARC, Mr. Raghunath Prasad Sapkota welcoming all the guests and participants in the function presented highlights on activities and achievements of the NARC.

At the occasion, a veteran Scientist and Ex-Executive Director of NARC was honored by Hon'ble Member of NPC for his long outstanding contribution in the field of agricultural research. 47 NARC employees having completed 25 years of their service were honored with plaques and certificates

by Hon'ble Member of NPC. Other NARC employees were also honored for their remarkable contribution and support in agriculture research.

Hill Agriculture Research Project (HARP), Kathmandu, Nepal and Agriculture Research Station, Dailekh of NARC were awarded for their outstanding effort and contribution in technology development.

Special Exhibition

An exhibition with special focus on rice to mark the "International Year of Rice 2004" was held on the occasion of NARC Day

Press conference

Earlier on the eve of the 13th NARC Annual Day, a Press Conference was organized at NARC Building, Ramshahpath on 6 May 2002.

In the program Chief of Communication, Publication and Documentation Division Bhola Man Singh Basnet 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. Journalists from different print and electronic media had interactions with the NARC scientists on various issues related to agriculture.

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Published by:
Communication, Publication and Documentation Division
Khumaltar, Lalitpur, **Phone:** (977-1) 5523041, 5525704, 5540818,
Fax: 5521197, **Email:** cpdd@mos.com.np

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To