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Agriculture Devevlopment Minister visited ARS, Rajikot, Jumla

Honourable Agriculture Development Minister Mr. Hari Prasad Parajuli visited Agriculture Research Station (Horticulture), Rajikot, Jumla on 8th November 2014 (22 Kartik 2071). Acting Executive Director, Nepal Agricultural Research Council (NARC), Dr. Tek Bahadur Gurung received Honourable minister. Administrative Director from NARC, Director Mountain Agriculture Institute (MARI), Guthichaur, Program coordinator from Sheep and Goat Research Programme (SGRP) Guthichaur, Station chief from ARS, Vijayanagar, officials from NARC head office, Regional Director from Regional Agriculture Directorate, Surkhet, Officials from HIMALI, High Value Agriculture Project, District Agricutlure Development Office and District Livestock Services Office from Jumla and other stake holders were among the participants of the visit. Mr. Giridhari Subedi, Station chief of ARS (Horticulture), Rajikot, Jumla facilitated the visit. He made short briefing about the fruit analysis lab and display of different varieties of potato (Desiree, Khumal seto-1, Jumla local and CIP 392222.25), garlic

Hournable Minister of Agriculture Development Mr. Hari Prasad Parajuli Planting of Spur type Apple Variety at ARS, Rajikot, Jumla

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Regional Level Interaction Workshop held

Communication, Publication and Documentation Division organized one day interaction workshop at Regional Directorate of Agriculture, Surkhet, District on 15th October 2014 (29th of Aswin, 2071).

Participants of Regional Level Interaction workshop held at Regional Directorate of Agriculture, Surkhet

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Nepal Agricultural Research Council (NARC) is an apex body for Agricultural Research in the country with the goal of poverty alleviation and sustainable growth of agriculture production through technology generation in different aspects of agriculture.

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(Kathmandu local and Chinese), standard apple varieties (red delicious, royal delicious, golden delicious, ambri, sweet ambri, jonathan, cox orange pippin, tore kullu and masadi), spur type apple varieties (25 varieties which have started fruiting on 2nd year of planting), thin shelled walnut (Payne, Ashley and Hartley), vegetable seed (radish, carrot, broadleaf mustard, swisschard, garden pea, local bean and onion). After briefing the display, visit was made to vegetable seed production block, fruit nursery, kiwi trial block, onion and garlic seed production block, varietal trial of garlic, varietal trial of spur type of apple. During his visit, the honourable minister Mr. Hari Prasad Parajuli showed keen interest in quality seed potato production, vegetable seed production, high density apple planting, quality apple production. Planting of a spur type apple variety (well spur) was done by the honourable minister and the Executive Directo of NARC. Station chief Mr. Giridhari Subedi shared his 8 year long experiences and thanked to all. Honourable minister Mr. Hari Prasad Parajuli appreciated Giridhari Subedi for his works that were the results of 8 year long stay in this station.

Opportunities of Hybrid Seed Production of Cabbage in Nepal

Bir Chandra Mandal and Manoj Kumar Thakur

Cabbage (*Brassica oleracea* L. var. *capitata*) belonging to family Cruciferae/ Brassicaceae is one of the major crops under the generic name of cole crops. *Brassica oleracea*, the most versatile species has generated 11 related vegetable crops as Kale and collards, Chinese kale, Cauliflower, Cabbage, Portuguese cabbage, Brussels sprouts, Kohlrabi, Broccoli, Marrow stem kale, Thousand head kale and Savoy.

Cabbage is a global vegetable crop covering an area of about 3.3 million hectares in 129 countries. China occupies the top rank with a cultivated area of 1.8 million hectares followed by India with 0.31 million hectares. In Nepal, Cabbage is a popular vegetable crop covers around 27431ha. of land with the total production of 658,344 metric tonnes. Cabbage is a cross pollinated crop with high level of heterosis in F_1 hybrids. Cabbage hybrids have been used widely world wide as they have high yield, are uniform, widely adapted, good in quality and offer opportunities to deploy dominant genes conferring resistance to diseases. Further, cabbage hybrids provide built-in exclusivity to the seed producers conferred by the ownership of the parental lines of the successful hybrids. Hybrid cabbage seeds are in great demand in Indian sub-continent and India alone imports about 50-60 tons of hybrid cabbage seed from abroad. Nepal has the potential of producing hybrid cabbage seed and can make a dent and capture sizable market in exporting hybrid cabbage seed to Indian sub-continent.

Brassica oleracea is an allogamous species due to sporophytic system of self-in-compatibility where the incompatibility is impressed on the gametophyte by its sporophytic parents. This system of self-incompatibility is usually controlled by a series of alleles at a single locus with 50 to 70 alleles. The first step in breeding F_1 hybrids in cabbage is to produce inbreds as parents. Therefore, the incompatibility reaction has to be overcome to allow self-pollination. This is done by pollinating the flowers in the bud stage before the SI mechanism is operative. Commercial production of F_1 hybrid seed in vegetable brassicas including cabbage depends on crossing together two inbred lines, each homozygous for a different S-allele. Each of the parental lines is required to be both sib- and self-incompatible but the two lines must be cross compatible. Cabbage is a typical biennial plant that vernalizes in winter and flowers in the next spring. Two important factors must be taken into account while selecting the area for cabbage seed production. The most important one is the temperature in winter which is critical for vernalization. The other is precipitation during flowering, seed maturing and seed harvesting. The vernalization should occur for a period of more than 60 days at a low temperature. The temperature below -10 degree C is generally injurious to the plants. Two suitable inbreds are selected as parents to produce F_1 hybrid seed. The parental lines are planted together at a ratio of 1:1 in the same isolated plot for open/cross pollination under natural conditions. The seed harvested on both the parental lines are hybrid seed.

In principle, the method involves seedling cultivation at fall season, selection of stock, overwintering of stock plants, flowering in the following spring, cross pollination, seed set, and harvesting of hybrid seed. The most suitable sowing time is to keep stock plants at semi-head stage before overwintering. A few tips to produce hybrid cabbage seed are as follows:

- Hybrid production plot should have a minimum isolation distance of 2000 m from cauliflower, kohlrabi, broccoli, kale, Brussels sprouts, etc.
- At least 15 bee hive boxes must be placed in one hectare area.
- Build-up framework and support to prevent lodging.
- Control major pests as aphids, cabbage worm and major diseases such as black rot and powdery mildew through proper disease management practices.
- Adjust time of planting for parental lines, if flowering time of both the parents does not coincide to ensure good seed yield and better seed quality.
- Harvest hybrid seeds from both the parental lines and mix them to improve seed uniformity.

Agriculture Development Minister visited RARS, Tarahara

Honourable Agriculture Development Minister/ Chairman of Nepal Agricultural Research Council (NARC), Mr. Hari Prasad Parajuli visited Regional Agriculture Research Station, Tarahara on 23rd December 2014 (8th Mansir 2071). Acting Executive Director Nepal Agricultual Research Council (NARC), Dr. Tek Bahadur Gurung, Regional Director, RARS, Tarahara Mr. Bedanand Chaudhary received and welcomed the honorable minister. Chief of Agriculture Research Station, Pakhribas, Coordinators of National Buffalo Research Program, Tarahara and Jute Research Program, Itahari and all NARC staff of eastern region also participated in the program. Regional Director of RARS, Tarahara welcomed the minister and briefly presented the major achievements and present status of seven research stations of NARC in the eastern region. Honouarable minister gave keen interest on presentation. In his speech, honourable minister mentioned research as the heart of agriculture development in Nepal. He focused on the ways of making the research system more effective to address the present agriculture scenario of Nepal. He also suggested the scientist to develop nutritious variety for making hunger free nation and secure the future generation. He shared about how to shorten the planting and harvesting period of crop so that farmers could increase their production and productivity. He noticed the insufficient human resources (less than 50 percent) in such a potential and important organization that hampers the research and fruitful results. Despite the existing situation, he appreciated the research works conducted by NARC. He also briefed about livestock and fishery sector research on how to increase growth rate of fish and livestock for commercialization.

Hournable Minister of Agriculture Development Mr. Hari Prasad Parajuli being briefed on fish species at RARS, Tarahara, Sunsari

Finally, the whole team visited different ongoing trials and its status at fisheries and livestock unit where the minister had discussion with concerned project leaders regarding their research issues.

Workshop on Initiation of Insect Forecasting System held

Every year insect invasion in severely destructive form are being observed either in one or another part of the country causing a huge losses in agricultural production. There is significant role of biotic and abiotic factors in increasing insect population. Among the climatic factors, temperature, rainfall, relative humidity and radiation have major role in increasing insect population while there is also direct relationship between host plant and presence of insects' natural enemies.

The possible invasion of harmful insects can be forecasted after analyzing actual environmental living and nonliving elements. In order to provide pre information of such possible invasion of harmful insects to farmers, Entomology Division, Khumaltar, Lalitpur organized a one-day "Inception workshop on initiation of insect forecasting system in Nepal" on 16-17 December 2014 (1-2 Paush, 2071) at its conference room in Khumaltar. Mr. Y. P. Giri, Chief of the Division insisted on forecasting of insect can be made after analyzing the life cycle of insects and environment of 7-8 years information. Dr. Y. G. Khadka, Director (Crop and Horticulture Research), and Dr. Y. R. Pandey, Director (Planning and Coordination), NARC urged on importance of workshop and wish successful implementation of insect forecasting system in Nepal. Senior scientist of Entomology Division Mr. A. R. Ansari highlighted on objectives of the workshop chaired by Prof. Dr. Resham Bahadur Thapa of Institute of Agriculture and Animal Science. Altogether there were 61 participants including NARC scientists, technical officer, experts and other stakeholders. Dr. Samudra Lal Joshi and Dr. Aananda Kumar Gautam presented five working papers on different procedures and statistics required for insect forecasting system.

National Potato Research Programme organized Press Meet

With the objectives of upscaling recently developed technologies for enhancing productivity of potato National Potato Research Programme (NPRP), Khumaltar organized a press meet on 24th November, 2014 (8th Mansir 2071). Fifteen journalists, representatives of radios, print media and televisions participated the program. Director, National Agricultural Research Institute Dr. Krishna Prasad Poudel, Chief of

Participants of press meet held at National Potato Research Programme, Khumaltar

Outreach Research Division and Council Member Dr. Deepak Bhandari, scientists and technicians of NPRP were also present at the occasion.

The important messages delivered to press were; Causal organism of late blight (*Phytophthora infestans*) has been changing its population structure from mating type A1 into A2 type. In terai and mid hills, wherever, continuous use of metalaxyl fungicide being practiced against late blight 1/3 population of *P. infestans* has become resistant to metalaxyl. Under such conditions Fenamidon (Sectin) or Dimethomorph (Acrobat) has been recommended to manage late blight. Frequency of fungicide spray depends on the level of host resistance against late blight. Late blight resistance potato varieties do not need spray at all, moderately resistant may require 2-4 times whereas late blight susceptible varieties i.e Desiree, Cardinal and Kufri Jyoti require 4-6 sprays. NPRP has developed a potato genotype PRP 25861.1 having late blight resistance, high yield, red skin tuber, processing quality character. There are more than 25

Seientists, Technicians and Journalists observing Potato trials at Hattiban Farm, Lalitpur

late blight resistant clones identified in the preliminary evaluation. In addition to disease aspects, NPRP has developed hydroponic systems of Prebasic Seed (PBS) production, >200,000 PBS are produced every year and technology for integrated crop management for higher yield also being developed. Under the CIP/ADA project, nutrient dense potato clones are also being selected through participatory variety selection using mother and baby trials at Dolakha and Jumla. A part from potato, four orange flashed sweet potato genotypes identified and adapted at the farmers field of Rupandehi and Nawalparasi districts.

First Asian Blight Workshop organized in Nepal

International Potato Center (CIP), Lima, Peru and Nepal Agricultural Research Council, National Potato Research Programme (NPRP), Khumaltar, Lalitpur, Nepal jointly organized the workshop on 6-9 Nov 2014 (20-23 Kartik, 2071) at Dhulikhel Mountain Resort, Kabrepalanchok. This workshop was funded by RDA South Korea and the CGIAR Research Program on Roots Tubers and Bananas. Participants were from all major potato producing countries in Asia: China, Vietnam, Bhutan, Nepal, India, Bangladesh, Indonesia, Myanmar, S. Korea, and the Philippines. External specialists participated from Peru (CIP), Ecuador (CIP) and the Netherlands (Euroblight), making a total of 25 participants in the workshop.

The workshop was convened and chaired by Dr. Greg Forbes (Scientific Leader, CIP) and facilitated by the local organizer Dr. Buddhi Prakash Sharma, coordinator of the National Potato Research Programme of Nepal. Dr. Shambhu P. Dhital and Dr. Bhim B. Khatri from NPRP also participated in the workshop.

Asia Blight aims to establish a potato late blight research network for Asia, similar to Euro Blight of Europe and Latin Blight of Latin America. The goal of workshop was to lay down the foundations for Asia Blight. This will then be translated into a project proposal to be submitted to international donors. The workshop started with country reports on potato and potato pathology. Asia Blight as a whole aims to establish "Blight Learning and Innovation Centers" (BLIC's) in selected locations within Asia.

Hill Maize Research Project Phase-IV Workshop Concluded

HMRP, NARC and DoA jointly organized an annual review and project closing workshop of Hill Maize Research Program on 15-16 December 2014 (9th Marga to 1st Paush 2071) at Hotel Himalaya, Kupandole, Lalitpur. All stakeholders presented their progress report achieved under the funding of HMRP. Dr. TB Gurung, ED of NARC distributed prize at closing session. Mr. Nirmal Gadal, Coordinator of the project, Mr. Dila Ram Bhandari from crop directorate, DoA, Mrs. Yamuna Ghale from SDC highlighted on HMRP achievements and future strategies. Dr. Yubak Dhoj G. C., DG of DoA declared closing of the workshop with his concluding remarks.

The first Phase of HMRP (1999–2002) was funded by the Swiss Agency for Development and Cooperation (SDC), with the objective to increase food security of farm families by raising production, productivity and sustainability of maize-based cropping systems in the hills of Nepal. First Phase was focused on applied research to develop new maize varieties and technologies suitable for the mid-hills of Nepal. Nepal Agriculture Research Council (NARC) was main partner to generate improved seeds for the rural poor in the hills of Nepal. The second phase (2003 to 2007) of the project balanced to applied (on-station) and adaptive (on-farm) research. The Department of Agriculture (DoA) started collaboration in this phase to transfer new technologies generated by NARC. In phase third (2008 to 2010), the project placed emphasis on the up-scaling of the improved maize varieties and technologies; consolidated partnerships and participatory approaches for technology adoption; emphasized Gender Equity and Social Inclusion (GESI); and expanded to other geographical areas. NGOs were on-boarded in this third phase of HMRP. The fourth phase of HMRP (2010 to 2014) was co-funded by the SDC and the United States Agency for International Development (USAID). The goal of HMRP IV was to improve food security and income of poor and dis-advantage groups (DAGs) in the hills of Nepal by further up-scaling and consolidating project achievements of the past three phases (1999–2010) and maximizing impacts by selective intensification of key project activities. Private and community based seed companies are important partner besides NARC, DoA and NGOs. The project covered 20 hill districts of Nepal (Khotang, Okhaldgunga, Dolakha, Ramechhap, Kavrepalanchok, Sindhupalchowk, Dhading, Baglung, Syangja, Palpa, Gulmi, Jajarkot, Surkhet, Dailekh, Kalikot, Dadeldhura, Doti, Aachham, Bajhang, and Baitadi). 10 NARC research stations, 20 District Agriculture Development Offices (DADOs) coordinated by Crop Development Directorate (CDD) and 5 Regional Seed Testing Laboratories (RSTLs), National Seed Board/ Seed Quality Control Center (NSB/SQCC), 18 NGOs, and 5 private seed companies/organizations were collaborating in phase IV. HMRP IV guided research and development interventions along the entire maize seed value chain which includes project's interventions in varietal development using farmer participatory approaches; source seed production through decentralized method; seed multiplication using Community Based Seed Production and Marketing (CBSP&M) approaches; development of seed processing and storage facilities; and capacity building of HMRP partners. Development of new crop management technologies; seed quality control through public-private partnerships; and seed policy support are major cross cutting interventions in the project. These activities are implemented through a strategic alliances of public, private and community organizations.

HMRP reached to 56,389 households (71% disadvantaged households and 63% women) and covered about 200 VDCs in 20 hill districts till its fourth phase. HMRP in collaboration with NARC/NMRP, NSB, DoA and CIMMYT's Global Maize Program, facilitated the development and release of seven farmer-preferred maize OPVs including one Quality Protein Maize (QPM) i.e. Poshilo Makai- 1. Some other new maize genotypes such as S99TLYQ-B (yellow QPM); Across 9942/Across 9944 (white normal); Arun-4 (early yellow normal) and Pool 17 (extra early yellow) are identified for release through this project. Several droughts, Grey Leaf Spot (GLS) tolerant and QPM genotypes had been introduced from CIMMYT's sources and tested on-station and on-farm for their adaptability and superior agronomic traits.

Through decentralized source seed production, NARC stations, private seed companies and CBSP groups/ cooperatives have significantly increased breeder and foundation seed production (66.8 tons in 2010 and 103 tons in 2013). This seed was sufficient to meet source seed demand for the hills of Nepal (estimated demand-90 tons). A total of 223 CBSP groups and cooperatives produced 1,216 tons of marketable surpluses of improved maize seed which was adequate to meet the targeted 30% maize seed demand for the hills of Nepal (estimated-4,000 tons). Project initiated participatory validation and dissemination of new maize based technologies focusing on maize-vegetable intercropping, composting technologies, weed management, insect pest control, post- harvest management and validation of key resource conservation technologies. Results had shown that these technologies, in combination with quality seeds of improved maize varieties, have potentiality to enhance the maize productivity up to 50 %. The fourth phase was concluded with fostering adoption of improved Maize technologies to promote food security, nutrition, and economic growth in the hills of Nepal.

Black bean of Karnali and its health benefits

Karnali zone is rich in natural resources. It lacks in its proper exploration and scientific management. Consumers have feeling that the agricultural products produced under high hill condition are found to be more tasty than any other region. Though it may be true to some extent which may vary from consumers to consumers, but it is a fact that the indigenous crops are also highly nutritive and local people are lacking to have knowledge of such facts.

Bean (*Phaseolous vulgaris*) is an indigenous pulse crop of Karnali zone and Jumla. Bean elsewhere is consumed mostly as vegetable while the Jumli bean is consumed as pulse. Local people consume it in the form of pulse, take in boiled form, mixed with goat meat and prepare tasty soup etc. etc. People of Jumla are in change of food habit and started to consume pulses imported from terai region. However, most of the people still consume local bean which now needs to be highlighted more on its nutritive value and health benefits from its consumption.


Plant of KBL-1 bean

Agriculture Research Station (ARS), Vijayanagar, Jumla has collected different kind of beans from local area and named as KBL (Karnali Bean Line). The number as KBL-1, KBL-2 and so on are tagged on the basis of type of samples collected. Local bean is highly diversified and is a group of different type of beans in colour, size and shapes. ARS, Jumla has started to differentiate those composites and establish pure line. Among those lines, KBL-1 is a black bean which is one of the different types of bean grown in Jumla.


Pod and grain of KBL-1 bean

Farmers after realizing bean's value through different trainings and visits and also after availability of some high yielding bean from ARS, Jumla; they have staretd to grow commercially. Bean in Jumla has now shifted from an ordinary crop to cash crop as it fetches good price and traders thyemselves collect bean from farmers' house.


Grain of KBL-1 bean

Among other beans, KBL-1 being a black bean has special value and health benefits. These properties need to be highlighted through different media in the region for its promotion and value chain.The six most important health benefits of black bean adapted from "http://www.healthdiaries.com/eatthis/6-health-benefits-of-black-beans.html" are as follows :

i. Digestive tract benefits : Black beans are very high in fiber, folate, protein and antioxidants alongwith numerous other minerals and vitamins. This high quantity of fiber and protein help to move food through the stomach to the large intestine at a healthier pace. This keeps any one part of the digestive tract from having to work too hard and supports the ideal balance of chemicals and populations of micro organisms required for a healthy digestive system.

ii. Blood sugar regulation : The steady movement of protein and fiber through the digestive system allows for a measured breakdown of food into its component parts. This even breakdown of food helps to curtail extremes regarding simple sugar uptake from the digestive tract. An excess of simple sugar uptake all at once can produce an unwanted blood sugar spike. A lack of simple sugar uptake may produce a rapid blood sugar drop. Either extreme can upset blood sugar balance. The quantity of fiber and protein in black bean helps avoid both extremes.

iii. Cardiovascular health : Black bean containing soluble fiber is helpful in lowering blood cholesterol level. The increased consumption of soluble fiber from legumes also lowers the risk of coronary heart diseases and heart attack. Black bean also contain a wide variety of both antioxidant and anti-inflammatory properties, which combat cardiovascular disease.

iv. Cancer prevention : Considering that black beans contain at least eight different flayonoids with enormous antioxidant potential, and their high content of phytochemicals, it is hardly surprising that studies have connected black bean consumption with reduced risk of certain cancers.

v. Nervous system health : Folate or vitamin B6, is particularly abundant in black beans. The nervous system relies on folate to produce the amino acids it needs to function. For pregnant women a deficiency in folate can cause the improper development of the fetus's brain and spinal cord. Its high iron content is also particularly beneficial to pregnant women.

vi. Rich in molybdenum : Black beans are extremely rich source of trace mineral molybdenum. Molybdenum serves the useful purpose of breaking down and detoxifying sulfites found in foods like salads and wines. Studies also suggest that molybdenum deficiencies can result in impotence in older men.

Training, Workshop/Seminar, Study and Tours

October- December, 2014

SN	Name	Position	Office	Subject	Duration	Country
			October			
1.	Dr. Bindeshwor Pd. Sah	S-5	Bio-Technology Division, Khumaltar	RAS5056M Supporting Mutation Breeding Approaches to Develop New Crop Varieties Adaptable to Climate Change (RCA)	6-10 Oct., 2014	Indonesia
2.	Dr. Tek Bd. Gurung	S-5	Director, Livestock & Fisheries	Scientific Visit in the field of Animal Diseases	12-24 Oct., 2014	Bangladesh
3.	Dev Kumar Saphi	S-1	NRRP, Hardinath	Conservation Agriculture Gateway for Productive & sustainable cropping systems	Oct. 7-21, 2014	India
4.	Dr. Prem Nidi Sharma	S-4	Entomology Division, Khumaltar	Management of migratory rice plant hoppers and associated virus diseases of Rice in Asia (IPM)	14-18 Oct., 2014	Cambodia
5.	Mahesh Lal Baidha	S-4	Training & Scholarship Division, NARC Plaza	Management of migratory rice plant hoppers and associated virus diseases of Rice in Asia (IPM)	14-18 Oct. , 2014	Cambodia
6.	Resham Babu Amgai	S-3	Bio-Technology Division, Khumaltar	International Rice Congress 2014, Blast Satellite Meeting	26 Oct-1 Nov., 2014	Thailand
7.	Dr Ram Chandra Adhikari	S-4	RARS Lumle	12th Asian Maize conference and Export consultation on maize for food feed, Nutrition and Environment Security	30 Oct-1 Nov., 2014	Thailand
			November			
1.	Bhola Shankar Shrestha	S-4	Animal Breeding Division, Khumaltar	High yielding Dairy Buffalo Breed Development in SAARC Countries	Nov. 15-17, 2014	Pakistan
2.	Dr. Doj Raj Khanal	S-4	Animal Health Division, Khumaltar	Conference on Bluetongue and related orbiviruses	Nov. 05-07, 2014	Italy
3.	Dr. Devendra Gauchan	S-4	SAPORD, Khumaltar	Policy Analysis Workshop	Nov. 10-14, 2014	Italy
4.	Dr. Dhruba Raj Bhattarai	S-2	Horticulture Research Division, Khumaltar	SATNET Asia regional Training Program on Postharvest Management and market linkage for vegetable and Fruits in south Asia	26-28 Nov. 2014	India
			December			
1.	Surya Narayan Sah	S-4	RARS, Tarahara	The annual review and planning workshop of CSISA	Dec. 16-17, 2014	India
2.	Nawal Kishor Yadav	S-4	NRRP, Hardinath	The annual review and planning workshop of CSISA	Dec. 16-17, 2014	India
3.	Dr. Buddi Prakash Sharma	S-4	NPRP, Khumaltar	Improving food security and nutrition of rural people in Nepal & Bhutan through collaborative potato breeding for yield stability & micronutrient density	Dec. 13-16, 2014	Bhutan
4.	Dr. Bhim Bd. Khatri	S-4	NPRP, Khumaltar	Improving food security and nutrition of rural people in Nepal & Bhutan through collaborative potato breeding for yield stability & micronutrient density	Dec. 13-16, 2014	Bhutan
5.	Dr. Tek Bd. Gurung	S-6	Executive Director	2nd Council for Partnership on Rice Research in Asia (CORRA) Global Rice Science partnership (GRiSP)	Dec. 3, 2014	India
6.	Kamal Sah	S-4	Soil Science Division, Khumaltar	Use of geo-information technology for mapping and degradation in SAARC Countries	Dec. 24-25, 2014	Bhutan

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Several local journalists, Officiating Regional Director Mr Krishna Bahadur Basnet, District Agriculture Development Officials, Surkhet, CPDD Chief Mr. Ram Bahadur Bhujel, Chief of Agriculture Research Station, Dasarathpur, Surkhet Dr. Tara Bahadur Ghimire, Senior Scientist Mr. Manoj Kumar Thakur, Scientists, Technicians and leader farmers of concerning sites of Agriculture Research Station, Dasarathpur, Surkhet participated in the workshop. During the trip to Surkhet Mahelkuna and Gumi were visited and interacted with the farmers of the concerning VDCs. Interviews, interaction programme and Video Clips were also taken. The workshop and interaction programme with farmers was found very successful.

Similarly, CPDD/NARC organized one day interaction workshop at Agriculture Research Station, Kimugaun, Dailekh, on 17th October 2014 (31st of Aswin, 2071). Several local journalists, District Agriculture Development Officer Mr. Surya Nath Yogi and team, Chief of CPDD Mr. Ram Bahadur Bhujel, Chief of Agriculture Research Station, Kimugaun, Dailekh Dr. Tul Bahadur Pun, Senior Scientist Mr. Manoj Kumar Thakur, Scientists, Technicians and leader farmers of concerning sites of Agriculture Research Station, Kimugaun, Dailekh participated in the workshop. During the trip to Dailekh HMRP field site Saltada, Dailekh was visited and interacted with the farmers of the concerning VDCs. Interviews, interaction programme and Video Clips were also taken. The workshop and interaction programme with farmers was also found very successful.

The workshop was chaired by Mr. Krishna Bahadur Basnet in Surkhet and Dr. Tul Bahadur Pun in Dailekh. CPDD Chief Mr. Ram Bahadur Bhujel welcomed the participants and highlighted on workshop objectives. Dr. TB Ghimire from Surkhet, Mr. Bikash Ghimire from Dailekh and Mr. Manoj Kumar Thakur from CPDD presented papers on hill maize research activities.

Adhikari obtained Ph.D. Degree

Mr. Buddhi Prakash Sharma Adhikari, Senior Scientist (S4) of Nepal Agricultural Research Council (NARC) has obtained Ph.D. degree in Agriculture (Plant Pathology) from Tribhuvan University (TU), Institute of Agriculture and Animal Sciences (IAAS), Rampur, Chitwan. Dr. Sharma Adhikari is the first student obtaining Ph.D. with major in Plant Pathology under 'Plan B' programme in TU.

His dissertation title was "**Studies on Genetic Diversity and Sustainable Management of Late Blight (*Phytophthora infestans* [Mont] de Bary) in Nepal**" with the objectives of studying genetic diversity of *P. infestans* population, measuring susceptibility of potato genotypes to late blight, stability of potato genotypes to multi environments, efficacy evaluation of fungicides and identify cost effective management options as per the host resistance levels of potato genotypes in Nepal.

P. infestans mating types A1 and A2 both were prevalent in Nepal but their population dominance varies greatly with respect to geographical regions; A1 population is dominant in Terai where as in high hills A2 type was dominant. In addition, 1/3 population of *P. infestans* in terai and mid hills was found to be resistant to metalaxyl fungicide. Application of fenamidon (Sectin) and dimethomorph (Acrobat) fungicides were found effective options for the management of late blight irrespective of metalaxyl resistance *P. infestans* population. Late blight susceptible genotypes require 4-6 sprays, moderately resistant require 2-4 sprays of Sectin whereas resistant genotypes don't require any fungicide application through the crop period.

Dr. Sharma Adhikari obtained his B.Sc. Agriculture from Tribhuvan University, Institute of Agriculture and Animal Sciences, Rampur, Chitwan in 1981 and M.Sc. Agriculture from Govind Ballav Pant University of Agriculture and Technology (GBPUA&T), Pantnagar, Nainital, India in 1991.

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