Varieties Released

Wheat: VL Gehun 907

VL Gehun 907 (DYBR1982-83/842ABVD50/VW9365/PBW343), a nutritionally rich high yielding disease resistant variety has been notified by Central Sub-Committee on Crop Standards, Notifications and Release of Varieties (CSCSNRV), New Delhi for rainfed and irrigated timely sown conditions of hills of H.P., J&K., Uttarakhand, Manipur and West Bengal. It has an average yield potential of 28.0 q/ha under rainfed and 44.3 q/ha under irrigated timely sown conditions and has shown an overall yield superiority of 18.0, 24.2, 16.4% under rainfed and 15.9, 11.0, 5.9% under irrigated conditions over checks HS 240, VL 738 and VL 804, respectively. It is highly resistant to brown and yellow rust diseases. In addition, it possesses higher degree of resistance against the most virulent yellow rust pathotype 46S119 and 78S84, under natural as well as artificial epiphytotic conditions. The variety VL Gehun 907 has been evaluated for the micro-nutrients for the crops grown under rainfed and irrigated situations against VL Gehun 804. The contents of iron, zinc, copper, and manganese were found to be 43.5 & 45.2 ppm, 35.4 & 36.3 ppm, 5.29 & 5.12 ppm and 42.5 & 41.8 ppm, respectively. In addition VL Gehun 907 has very good chapati making quality.


Horsegram: VL Gahat 19

Horsegram variety VL Gahat 19, released from CSCSNRV, has recorded yield superiority of 14.39% over best check AK 42; 16.62% over PHG 9 and 25.98% over the AK 21 during three years (2006 to 2008) testing. It has better digestibility (83.47%) than checks viz; AK 42 (82.35%), PHG 9 (81.80%) and AK 21 (79.83%). VL Gahat 19 has shown resistance to anthracnose and root rot and moderately resistant to collar rot, powdery mildew and leaf spot diseases.

Gyanendra Singh, V. Mahajan, H.S. Gupta, K.S. Hooda, B.L. Mina, S. Saha and J. Stanley
Variety Identified

Cherry tomato: VTG 95

An indeterminate, open-pollinated variety suitable under both polyhouse as well as open-field conditions has been identified by the State Varietal Release Committee for release in Uttarakhand. It yielded 150-200 q/ha under open-field and 300-400 q/ha under polyhouse condition in hills. The fruits of this variety are small having attractive red colour with oval shape; better in nutritive traits (Vitamin C- 86mg/100g and T.S.S -7° Brix), with good taste and are suitable for table purpose.


Research Achievements

Cold Shock Protein Gene (cspa) Detected in Pseudomonad

Type III class ice nucleation activity (-6 to -12 log ice nuclei/cfu) at -10°C was found in cold tolerant pseudomonad isolated from Uttarakhand Himalaya. Major cold shock protein gene (cspa) ~160bp was detected in all the pseudomonads. This encodes a cold inducible protein, responsible for cold tolerance. The gene sequence shows more than 90% homology with the cold shock protein of several Bacillus sp.

Pankaj K. Mishra and J. K. Bisht

Vivek QPM 9 - An Early Maturing Hybrid for the Himalayan States and Peninsular India

Maize (Zea mays L.) is an important food and feed crop of the world. It ranks fifth in acreage and third in production. It is one of the major sources of calorie and protein. However, it is deficient in essential amino acids viz., lysine and tryptophan. Quality protein maize (QPM) with opaque-2 gene along with associated modifiers contains twice as much lysine and tryptophan and 30% less leucine than the normal maize. The reduced level of zein further improves the nutritional quality of the QPM. In India, absence of commercial QPM hybrids in the market is singularly responsible for the poor spread of this nutritionally balanced maize. Although, there are few hybrids available but all of them are of full season (late maturity group); thus, they do not fit in the cropping sequence of the hills, where short duration hybrids are required.

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Hence, work has been carried out to convert the existing early maturing inbreds to QPM inbreds for developing early maturing QPM hybrids.

Vivek Hybrid 9 is one of the best maize hybrids developed and was released for commercial cultivation in the states of Uttarakhand, Himachal Pradesh, J&K, Andhra Pradesh, Karnataka, Tamilnadu and Maharashtra in the year 2000. The parents of Vivek Hybrid 9 viz., CM 212 and CM 145 were converted into QPM versions using 'Molecular Marker Assisted Selection'. The QPM version of CM 212 (VQL 1) and CM 145 (VQL 2) showed 9-12% superiority in grain yield over the normal inbred versions. The reconstituted QPM hybrid (Vivek QPM 9) was obtained by combining VQL 1 and VQL 2. Vivek QPM 9 yielded at par with Vivek Maize Hybrid 9 in the Himalayan states (58 q/ha) as well as in peninsular India (54 q/ha) under the All India Coordinated Maize Improvement Project (AICRP on Maize) during 2005 and 2007. Based on its performance, the hybrid has recently been released for commercial cultivation in the Himalayan states as well as peninsular India (The Gazette of India, No 1448, Part II, October 16, 2008, page No. 2). The new hybrid, Vivek QPM 9 possesses all the good quality of Vivek Hybrid 9 with added advantages of 30% higher lysine and 44% more tryptophan. Better quality of protein in QPM is expected to help in reducing protein malnutrition among rural masses.

**Seed Production and Licensing to Private Seed Producers**

In order to popularize the new QPM hybrid, seed production of Vivek QPM 9 has been undertaken in large scale during last few years. More than 15.0 quintals of hybrid seed has already been distributed from the VPKAS, Almora campus. The seed production and commercialization of Vivek QPM 9 have also been licensed to some private seed producers for its spread among the farming community and have generated more than 10.0 lakhs as revenue by licensing to private companies. This technology is also available for other interested private and public sector seed producers for commercialization.

**H.S. Gupta, P.K. Agrawal, V. Mahajan, B.K. Babu & J.C. Bhatt**

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**Climatic Analysis of 46 Years of Experimental Farm, Hawalbagh**

In Northern hills, the irrigation facilities are confined to around 10% of the cultivated area, whereas, the rest 90% area is rainfed. On average, around 1007 mm rainfall is received annually, which is sufficient to raise good crops. However, during last ten years, the unpredictable pattern of rainfall often has created drought like situations in hills and it is more in the last four years. Owing to this, the crop has to suffer at several stages during growth period. With the climate change, the temperatures are also increasing in hills and there is a decreasing trend in rainfall too (Table 1). Therefore, there is urgent need to devise the ways and means to manage the crop production under these changing situations.

**Trend in Annual Rainfall**

- The trend analysis of 46 years showed an increasing trend in rainfall till 1986, thereafter, decreasing trend prevails. The decadal annual rainfall trend also showed decreasing trend afterwards.
- An increasing trend in frequency of drought years, as 16 drought (5 severe) years were observed between 1964-2000, whereas, 7 drought (3 severe) years were observed in subsequent 9 years.
**Trend During Kharif Season**

- In general, there is a decreasing trend in rainfall during *Kharif* season.
- Frequency of drought years has increased as there were only 15 drought (5 severe) years during 1964-2000, whereas, during last 9 years, 6 (5 severe) were drought years.

**Trend During Rabi**

- In general, no clear cut trend was observed in *rabi* season rainfall, however, there is a decreasing trend in rainfall in the last decade.
- Frequency of drought years increased as there were only 15 drought (5 severe) years during 1964-2000, whereas, 6 drought (4 severe) years have occurred during last 9 years.

In general, *kharif* rainfall is sufficient to meet the water requirement of most of the crops except paddy in case of normal rainfall but in *rabi*, rainfall meets only 1/3rd of crop water requirement.

*S.C. Pandey & A.K. Srivastva*

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**Enhancing Wheat Production in Village Nag**

Wheat is the most important winter cereal crop of Uttarakhand hills. Out of 13 districts, Almora is one of the hilly districts with acreage of around 33,500 ha. Nag, one of the villages in the block Takula in the district of Almora was identified under Wheat Front Line Demonstration (WFLD). Farming is practiced in this village as a source of livelihood. Shri Harish Singh Bora S/o Shri N.S. Bora, a marginal farmer from this village had come in contact with the scientists of VPKAS during rabi 2009-10 while searching suitable villages and farmers for the WFLD. Rice-wheat is the pre-dominant cropping system in this village. By the time the WFLD was taken up, most of the farmers had sown their crop in the first fortnight of November with their traditional variety. Shri Bora and some of the adjacent farmers were about to sow their fields with traditional wheat variety. On discussion with the scientists about the improved wheat variety ‘VL Gehun 892’ suitable for late sown restricted irrigation conditions, the farmers were impressed with the technology and sown the crop on 21st Nov. 2009.

Even if initially they were concerned about the possible loss because of late maturity as compared to the traditional variety well adapted to their local conditions, they had faith upon the scientists and technologies of VPKAS. The farmers were also assured for buy-back of the produce for seed purpose if they can maintain the standard of the produce to the desired level of purity and follow other standards. The farmers of the village followed the instructions and recommended packages of practices given. In all, 13 farmers adopted the variety covering an area of 0.74 ha.

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A bullock operated seed drill for line sowing and relevant inputs were provided as per WFLD norms. The recommended seed rate of 125 kg/ha (2.5 kg/200 m²) as recommended for late sown condition was followed. The recommended dose of fertilizers, N:P:K:: 120:60:40 was applied and the weeds were managed by spraying isoproturon @ 1.00 kg/ha.

Farmers’ fields were continuously monitored and farmers were also trained in rouging the off-types as well as pre and post harvest care. The institute organized a ‘Field Day’ at the Nag village, in which Dr J.C. Bhatt, Director of the institute along with scientists visited the fields and later in a gathering, enlightened the farmers about the benefits of using the improved technologies. The farmers themselves did a crop cutting of VL Gehun 892 and the traditional variety, and compared the grain harvest. VL Gehun 892 produced 568 ear head as compared to 339/m² area of the traditional variety. They harvested an average yield of 35.42 q/ha (73.96 kg / 200 m²), which was double the yield compared to their traditional varieties. This achievement could be done by adopting the improved crop variety and recommended packages of practices. A part of the seed so produced through farmers’ participatory seed production was purchased back by the Seed Unit of the institute. The farmers were highly impressed with this demonstration and showed their keen interest for cultivating this variety during the ensuing rabi season.

This story of Nag village of Takula block in the district of Almora, Uttarakhand is truly a motivational story for other villages of the district. They could not only produce almost double the amount of grain harvest from the same piece of land but also generated extra income by selling the produce as seed. The WFLD has helped them to learn about the improved package of practices, replace the traditional variety with improved one which fits well to their system even under late sown condition. The farmers’ participatory seed production gave the farmers confidence, improved their skills and additional income. VL Gehun 892 is a micronutrient rich variety too. It contains 35.7, 4.79, 49.8 ppm Zn, Cu and Mn, respectively. Therefore, with the spread of this variety, the nutritional security in these villages will also improve. The success story of Nag village is now being considered as one of the success stories in the Takula block of Almora district and such success stories can be replicated in other places of the district and the state, to provide food and nutritional security in NW Himalayan region.

Lakshmi Kant, Vijay Avinashilingum N.A., M.L. Roy, A. Gupta & J.C. Bhatt

Seed Production of Garden pea

Shri. Laxmana Singh Manral S/o Kundan Singh Manral, a marginal farmer from Dopanki village of Nainital district of Uttarakhand state came in contact with VPKAS in the year 2008-09. He used to cultivate traditional varieties of cereals and vegetables, and used to face difficulties in getting quality seeds at the time of sowing. On coming in contact, the scientists of the institute, advised him to take up seed production of vegetable pea, under the aegis of Horticultural Technology Mission Mini Mission-1 (HTM MM-1). He was provided 4.5 kg seeds of an improved variety of vegetable pea viz., Vivek.
Matar 11 for sowing in a small (600 m²) plot and asked to adopt the recommended scientific package of practices. The foremost point emphasized in quality seed production in garden pea was rouging for removing off-types. Apart from rouging, other important operations namely selection of quality seed, fertilizer, proper irrigation, weeding and plant protection measures were also emphasized. By following the practices, he was able to harvest 1.07 q of quality seed from his 600 m² plot. He kept the seeds for his own requirement and sold the excess to his neighbours. Encouraged by his achievement, the neighbours and other farmers are also keen to take up vegetable seed production in future.

Vijay Avinashilingam, N.A. & N. K. Hedau

Other Activities

Farmers Fair Organized

The farmers' fair of the Institute was organized on March 29, 2010, in which more than 500 farmers participated, of which about half were women—the backbone of hill agriculture. Dr. L.M.S. Palni, Director, Govind Ballabh Pant Institute of Himalayan Environment and Development, Kosi-Katarmal was the Chief Guest on the occasion. The Chief Guest, visitors and farmers were taken around the Farm and briefed about the experiments being conducted at the institute on various aspects of hill agriculture. Dr. J.C. Bhatt, Director, described the progress made by the institute in developing the technologies related to hill agriculture and stressed on the need of food and nutritional security concurrent with the environmental security. The Chief Guest inaugurated an exhibition and released two publications, viz., 'Krishi Calendar' and 'Haritima', and advised the farmers to take full advantage of the technologies developed by the institute. On this occasion, 13 farmers belonging to different areas of hills were honoured for their outstanding work in the field of hill agriculture.

Sensitization Workshop on PPV&FRA Organized

Sensitization Workshop on Protection of Plant Varieties and Farmers Rights Act (PPV&FRA), 2001 was organized at the institute on March 25, 2010. Dr. S.S. Baghel, Former Vice-chancellor, Assam Agricultural University, Jorhat inaugurated the workshop and narrated different issues related to this act and explained how farmers' rights have been safeguarded in this act. He said that India is the first country in the world, which has recognized farmer as a breeder. He showed his concern over the less number of applications submitted by the farmers for registration.
under PPV&FRA and urged the scientists and state agricultural department officials to guide the farmers for registration of their varieties. The guest of honour, Dr. C.L. Acharya, former Director, Indian Institute of Soil Sciences, Bhopal emphasized on the conservation of natural resources. He urged that IPR issues are getting utmost importance in Indian agriculture hence, there is need to document various farmer's varieties as well as indigenous technical knowledge on priority basis.

Dr. J.C. Bhatt, Director, VPKAS, stressed on the importance and significance of plant variety protection and discussed on mechanism to make it more practical. He stressed upon the need for thorough understanding of the protection of plant varieties and farmers rights act. He reiterated that Himalayan region is a hub of traditional varieties; therefore accelerated efforts are needed to conserve these bio-resources. He called upon the breeders and farmer's community to come forward to register their indigenously developed crop varieties with the authority. Prof. H.S. Chawla, GBUAA&T, Pantnagar, who was instrumental with registration of three farmers' varieties of rice, also shared his experiences with participants. The workshop deliberated on various issues of the Act, DUS testing, conservation of farmers' varieties, commercialization in agriculture and intellectual property management in technological extension: new issues in agricultural research, farmers' rights under the act and geographical indicators in agriculture.

A total of 150 participants including Joint Director Research (GBPUAA&T, Pantnagar) Chief Agriculture Officer (Almora), Govt. officials from Agriculture and Horticulture Departments, Scientists from GBPIHE&D, VPKAS and Krishi Vigyan Kendra, progressive farmers from the villages Dunagiri (Almora) and Pukhrar and Dubhkar (Nainital) participated in the workshop.

**Honour to the Farmer of the Adopted Village**

Shri Amba Dutt Pandey, a farmer from the adopted village Bhagartola, was honoured by Hon’ble Minister of Agriculture Shri Sharad Pawar ji during a programme organized at Vigyan Bhawan, New Delhi on February 26, 2010. He was out of the 101 farmers of different states who were honoured for their commendable work in the field of agriculture.

**Brainstorming Meet on Conservation Agriculture**

A brain storming session on Conservation Agriculture for hill region was organized at VPKAS on May 11, 2010. Dr. I.P. Abrol [Former Dy. Director General, (NRM), ICAR] was the Chief Guest. Chairing the session, Dr Abrol has introduced the house with 3 principles of Conservation agriculture viz., (i) minimum soil disturbance, (ii) keeping the soil covered and (iii) adopting crop rotation in temporal and spatial scale. Dr. A.K. Srivastva, Head, Crop Production Division briefed resource conservation technologies like, perennial vegetation on bunds, vegetable cultivation through harvested water, seed priming and deep sowing for crop establishment, which may constitute Conservation Agriculture. Dr. P.K. Sharma, Dean College of Agriculture, Ch SKHPKV, Palampur addressed the issues of conservation agriculture and emphasized the need of using weeds for nutrient, conservation tillage giving example of rice-wheat cropping system. He urged the house to identify important issues to be taken up and proceed with site specific multilocational trials, which may benefit the hill farmers. Dr. Subhash Chandra, Chief Scientist, Water Management,
GBPVA&T, Pantnagar explained conservation agriculture as a driving force for looking alternative technologies. He told that puddling of rice field is one of the main constraints for the adoption of conservation agriculture in irrigated lands. In the concluding session, Dr. Abrol complimented the Institute authorities for their thoughtfulness in organizing this discussion on a very substantive issue and expressed that efforts of the scientists in this direction would be path breaking in addressing the problems facing by the farmers of the region. The Director and all the scientists of the institute participated in the meet.

**NAIP-SRLS Meeting**

The 2nd Annual workshop and 3rd meeting of Consortium Advisory Committee of the NAIP–SRLS Project Component 3 entitled “Enhancement of livelihood Security through Sustainable Farming Systems and Related Farm Enterprises in North-West Himalaya” was organized at Sher-e-Kashmir University of Agricultural Science and Technology, Srinagar, during May 03-05, 2010. Rural livelihood is getting assured in North West Himalayan districts of Kupwara, Doda, Chamba, Tehri Garhwal and Champawat. This is evident from the deliberations on the project reports during 2nd Annual Workshop and 3rd meeting of the Consortium Advisory Committee.

Dr. A.P. Srivastava, National Coordinator of NAIP Component-3 (Sustainable Rural Livelihood Security) setting the goal of the workshop, emphasized high expectations from the project. He dealt with implementation issues leading to success of the project. Dr. J.C. Bhatt, Director and Consortium Leader, highlighted the relevance of project for hill and mountain region.

The consolidated report of the project across five districts (Kupwara, Doda, Chamba, Tehri Garhwal and Champawat) being implemented by 9 Consortium Partners (SKUAST-K, SKUAST-J, ChSKHPKV, GBPVA&T-R, CSWCRTI, GBPHEP, IIT-Delhi, BAIF, led by VPKAS) and two Associate Partners (DCFR and INHERE), was presented by Dr. A.K. Srivastva, Consortium Principal Investigator of the project. He emphasized the excellent cooperation of the partners on contributing towards success of the project. Results across five districts: Kupwara, Doda, Chamba, Tehri Garhwal and Champawat in three N-W Himalayan states of Jammu & Kashmir, Himachal Pradesh and Uttarakhand, indicated increase in food production from 3615 t (2410 ha) to 4097 t (2254 ha) due to increased productivity. Similarly, vegetable production increased from 1685t (sufficient only for 9 months) from 602 ha (2.8 t/ha) to 3516 t (19 months) from 700 ha only (5.0 t/ha). This was due to additional area of 98 ha, increase in cropping intensity and high productivity by improved management. Thus, achievements in terms of ensuring food security, intensification and diversified farming, strengthening natural resource management, farm ponds-protected cultivation-fisheries, community organization, processing and Knowledge Centres were presented. The innovative and integrated efforts under the project, which was started as one of the first 3 sponsored consortium under NAIP-SRLS, have started resulting significant improvement in rural mass. This has been made possible by concerted efforts of all the stakeholders- scientists, farming families, institutions and development agencies. The innovative approach included all the 3737 farm families in 15 selected clusters of villages, improving integrated farming system supported by natural resource development, allied activities, processing, marketing and establishing community organizations.

Dr. H.S. Gupta, Director, IARI and Founder Consortium Leader, expressed great satisfaction on increasing production of vegetable, food and allied interventions production. He emphasized need for processing, social organization and credit.

Padma Bhushan Dr. Chandi Prasad Bhatt ji highlighting the achievements expressed that now “farm families are themselves speaking, instead of the figures and reports. There has been astonishing transformation in Kupwara villages. Impact has been remarkable and other villages want to be included in the project".
Prof. Anwar Alam, Hon’ble Vice Chancellor of SKUAST-K, elaborated the beginning stage of the project in the District Kupwara. He emphasized the all round development achieved in the project is only way to meet the aspirations of people. In subsequent sessions, detailed report of project implementation was presented by all the CoP.I.s, supported by the Associate Scientists, which was followed by constructive discussion.

3rd meeting of the Consortium Advisory Committee was held on May 04, 2010. All the members critically reviewed the progress and expressed great satisfaction on the achievements. The Chairman of CAC, Padma Bhusan Dr. Chandi Prasad Bhatt ji concluded by saying that now it is not the data and reports but the people are speaking about the progress of the project.

Plenary session was held on May 05, 2010, under the Chairmanship of Dr. Harbans Singh, Former Vice Chancellor SKUAST-K, Srinagar and he emphasized upon the balanced approach of resource development, diversified farming supported by allied activities and value addition-processing as key for future thrust of the project. Dr. J.C. Bhatt, Director and Consortium Leader emphasized need for comparative evaluation of enterprises.

Prior to the workshop & CAC meeting, the team visited the non arable land plantations, orchard plantation, fish ponds, water harvesting and protected cultivation areas. The Chairman Padma Bhusan Dr. Chandi Prasad Bhatt ji along with the CPI and CoP.I Kupwara, visited the selected clusters on May 01, 2010. This was followed by detail interactions with farm families.

Annual Workshop on National Network Research Project on Arid Legumes

XXVI Annual group meeting of National Network Research Project on Arid Legumes was organized at the institute on May 27-28, 2010, in which 65 Arid Legumes research and development workers and officers from government & non-government institutions across the country actively participated. Hon’ble Minister Shri Prakash Chandra Pant Ji from the Cabinet of Uttarakhand also participated in one of the sessions. He was apprised of the activities of the institute during his visit to museum and the institute. He praised the work being conducted by the institute and the help rendered by ICAR. The catalogue entitled Evaluation of Indigenous Horsegram Germplasm of Uttarakhand Hills for Utilization in Breeding Programme, the bulletin Sustainable Fodder Production Management in NW Himalaya and VPKAS Hindi Newsletter Parvatiya Krishi Darpan (Oct. 2009 – March, 2010), were released during the workshop. Research work undertaken in various disciplines in Kharif 2009 were reviewed and technical programmes for Kharif 2010 were formulated with special emphasis on development of mapping population on the traits like maturity, yield, gum quality in gour and resistance to abiotic and biotic stresses.

Research Advisory Committee Meeting

The XIV Research Advisory Committee (RAC) meeting of VPKAS, Almora was held on March 23-24, 2010 under the Chairmanship of Dr. S.S. Baghel, Former Vice Chancellor, Assam Agricultural University, Jorhat (Assam). Other members namely, Dr. C.L. Acharya, Former Director, IISS, Bhopal; Prof. T.C. Thakur, National Professor, Agricultural Engineering Deptt., GBPUA&T, Pantnagar; Dr. Jagdish Kumar, Prof. & Head, Agriculture Economics, GBPUA&T, Pantnagar and Shri Susheel Mishra attended the RAC meeting. All the Heads of Divisions and scientists also attended the meeting.

Chairman of the RAC, Dr. S.S. Baghel, in his opening remarks commended the work being carried out in the institute. He remarked that the institute has done fabulous work in the field of crop improvement, crop production, protection and extension services. He has mentioned that the RAC in first meeting has suggested many research areas, some of which are beyond the scope of institute’s mandate. Moreover, topics like harnessing the improved yokes, survey report on adoption were partially attended. The Chairman has lauded the efforts of the members of RAC for their fruitful suggestions.
Dr. J.C. Bhatt, Director welcomed the RAC and presented significant achievements made by the institute during October 2008 to March 2010. He also appraised the Committee about the points discussed in DG’s meeting with Institutes of Crop Science Division during January 19-21, 2010 in Delhi. The Committee has shown its agreement with points mentioned in the proceedings circulated by the DDG (Crops).

The Chairman, Dr. S.S. Baghel released an e-book CD on Uttar Pashchimi Parvatiya kshetron Mein Krishi Upadaka Ki Vridhi Ke Liye Unnat Taqnik for faster dissemination of technology to different stake holders.

Institute Management Committee (IMC) Meeting

The meeting of IMC was held on March 25, 2010 under the Chairmanship of Director of the institute. The achievements made by the institute during last six months and proposed agenda items were discussed in the meeting.

Institute Research Council Meeting

The meeting of the Institute Research Council (IRC) was held on May 12-13, 2010 and reviewed the progress of research undertaken during Kharif 2009 and to finalize the programme for ensuing Kharif 2010, in view of the points discussed in ICAR meeting.

Monitoring of Field Experiments

The monitoring of field experiments planted in Rabi 2009-10 was done on April 1, 2010 under the Chairmanship of Dr. A.K. Srivastva, Head, Crop Production Division. All the Scientists of the Institute visited and monitored the experiments. The progress was reviewed by the Director.

Scientific Advisory Committee Meeting of KVK, Uttarkashi

The Scientific Advisory Committee meeting of KVK, Uttarkashi was held on June 21, 2010 under the Chairmanship of Dr. J.C. Bhatt, Director, VPKAS. Mr. M.S. Kotiyal, the CDO, the CAO, NABARD, Uttarkashi, scientists of GBUAA&T hill Campus, Ranichauri, progressive farmers, Chairman/ members of different farmers’ federation and KVK staff participated in the meeting. The progress was reviewed and planning for the ensuing season was done in the meeting.

Meetings/workshop/trainings organized at the institute

- Two days training on Parvatiya kshetron mein fasaloo ka upadanan avam unnat taqnikain for Ajeevika Samvardhan was organized from January 22-23, 2010 for 30 participants. The UPASAC, Bageshwar sponsored the training.
- Three days training on Parvatiya kshetron mein fasaloo ka upadanan avam unnat taqnikain for 30 women of SEWA Bharat, Dehradun was organized from February 9-11, 2010.
- Two field days - one on lentil cultivation at village Karalagaon and another on vegetable pea cultivation at village Sainji were conducted with participation of 148 farmers on March 12 and 19, 2010, respectively.
- The meeting of Horticulture Technology Mini Mission-I was held from March 15-17, 2010 at the institute, in which projects running at different locations in Uttarakhand were reviewed.
- Four days training on Parvatiya kshetron mein fasaloo ka upadanan avam unnat taqnikain for Horticulture and Cash Crops Development, Government of Sikkim, Gangtok, was organized from March 20-23, 2010 for 40 participants.
- Seven training programmes (April 3-6, 7-9, 11-17, 21-27, June 4-7, 21-23, 28-30, 2010) were organized on various aspects of hill agriculture, which included water conservation, protected cultivation, production technology, mushroom production, apiary etc. for 169 farmers from Uttarakhand.
Participation of the Institute at Various Meetings/Fairs/Exhibitions etc.

- Institute and its KVKS participated and displayed exhibition stall in Uttarayani Mela from January 13-18, 2010 at Bageshwar.
- Dr. V.K. Sachan, Project Coordinator and M.P. Singh, Farm Superintendent, KVK, Bageshwar participated and represented exhibition stall of VPKAS in North India International Trade fair at Moti Jheel campus, Kanpur from January 19-26, 2010.
- KVK, Bageshwar has celebrated Technology Week from February 19-25, 2010 at KVK campus with participation of more than 200 farmers/farm women. These participants were exposed to various technologies developed by VPKAS as well as by other institutes. They were provided with certain critical inputs (seeds/pesticides) during the event.
- Two Animal Health Camps were organized at village sainj and Karasghat by KVK, Bageshwar on February 26 and March 31, 2010, respectively. A total of 206 animals were checked and advised for treatment.
- Institute participated in Kisan Mela at GBPUA&T, Pantnagar (U.S. Nagar) from March 6-9, 2010.
- Mr. Kamal Pande, SMS attended National symposium on Conservation Horticulture held at Dehradun from March 21-23, 2010.
- The Subject Matter Specialists of Bageshwar and Uttarkashi KVKS have participated in Krishi Mahotsava programme organized by the State Government during May 6-14, 2010.
- Dr. J.K. Bisht participated in All India Coordinated Research Project on Forage Crops National Group Meet at GBPUA&T, Pantnagar from May 21-23, 2010.
- Dr. J.C. Bhatt, Director attended XXI Regional Committee Meeting of Committee No.1 at SKUAST-J (J&K) from June 10-12, 2010. Dr. A.K. Srivastava, Head, CPD and Programme Coordinator/Incharge of KVKS Dr. V.K. Sachan and Mr. Hari Govind Jaiswal also attended the meeting from June 10-11 and June 11-12, 2010 respectively.
- Dr. A.K. Srivastava, attended the Brain Storming Session on protected cultivation at SKUAST-K on June 12, 2010.
- Drs. J.K. Bisht, L. Kant, M.L. Roy and Mr. D.S. Panchpal participated in Kumaon Srijan 2010 at Munshyari, Pithoragarh from June 15-17, 2010.

Human Resource Development Activities

Training of Institute's Staff at Other Institutes

<table>
<thead>
<tr>
<th>Duration</th>
<th>Participants</th>
<th>Topic</th>
<th>Venue</th>
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<tbody>
<tr>
<td>April 09-10</td>
<td>Ms. Shobha SMS. KVK Bageshwar</td>
<td>Orientation Training cum workshop on Home Science</td>
<td>GBPUA&amp;T Pantnagar</td>
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<tr>
<td>April 11-22</td>
<td>Mr. ARNS Subbanna Scientist</td>
<td>Training on Bt.</td>
<td>DRR, Hyderabad</td>
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<tr>
<td>May 10-15</td>
<td>Mr. T.B. Pal Technical Officer T-6 &amp; Mrs. Renu Sanwal Technician</td>
<td>Creative Writing on Agriculture</td>
<td>IIMC, Dhekanal, Orissa</td>
</tr>
</tbody>
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Publications

Institute Publications
- Parvatiya Krishi Darpan (October 2009 – March, 2010)
- Hindi Magazine, Haritima
- Krishi Calendar 2010-11

Technical Bulletins
- Market-led Extension: Experiences at VPKAS
- Evaluation of Indigenous Horsegram Germplasm of Uttar-khand Hills for Utilization in Breeding Programme

Leaflets
- Amla Ke Mulya Vardhiti Upad
- Tamatar Ke Mulya Vardhiti Upad
- Krishi Vigyan Kendra Bageshwar – Ek Parichay
- Krishi Vigyan Kendra Bageshwar – At a Glance
- Up Rao Dhan Ki Vaigyani Kheti

New Colleagues
- Mr. K. Jeevanandand, Scientist (Agril. Microbiology) on March 15.
- Mr. Manik Lal Roy, Scientist (Agril. Extension) on March 15.
- Mr. Hukumraj Laxmanrao Kharbikar, Scientist (Agril. Economics) on April 23.
- Mr. Suhel Ahmad Dand, Scientist (Forestry) on April 23.
- Dr. Renu Jethi, Scientist (Home Science Extension) on April 23.

Transfer
- Dr. (Mrs.) N.K. Durga, Sr. Scientist to NRPCPBT, New Delhi on May 12 (AN).
- Dr. Vinay Mahajan, Pr. Scientist to DMR, New Delhi on May 18 (AN).
- Dr. K. Srinivas, Pr. Scientist to NAARM, Hyderabad on May 22 (AN).

Selection
- Dr. Lakshmi Kant, Sr. Scientist to Pr. Scientist w.e.f. February 9.
- Dr. P.K. Agrawal, Pr. Scientist to Head, Crop Improvement Division w.e.f. February 18.

Visitors
- Dr. B.P. Nautiyal, Director, Horticulture, Govt. of Uttarakhund, Udyavan Bhawan, Chaubatia on February 3, 2010.
- Shri Trivendra Singh Rawat, Hon’ble Minister of Agriculture, Animal Husbandry and Horticulture, Govt. of Uttarakhund on February 7, 2010.
- Dr. D.K. Pandey, Scientist E, Deptt. of Science & Technology, New Delhi on April 29.
- Dr. G.J. Samathanam, Advisor & Head, TDDT, DST, New Delhi on April 29.
- Dr. S.K. Sinha, Principal Director, FSAD, Krishi Bhawan, Gangtok, Sikkim on May 22.
- Mr. Pankaj Kumar Prasad, GMM, NSC, New Delhi on May 22.
- Rear Admiral (Retd.) K.L. Malhan, Gurgaon on May 25.
- Dr. N.K. Tyagi, Member, ASRB to KVK, Uttarkashi on June 17-19.
- Dr. J.G. Varshney, Director, Directorate of Weed Science Research on June 23-24.

Activities of Krishi Vigyan Kendras

The two Krishi Vigyan Kendras (KVKs) of the institute established in the districts of Uttarkashi and Bageshwar, carried out the following activities during January-June, 2010.

Trainings – For uplifting socio-economic status of farmers, KVKs had conducted 46 and 34 training programmes at Uttarkashi and at Bageshwar, respectively on various topics like, Crop Improvement, Crop Production, Horticulture, Plant Protection, Animal Science, Home Science, Agricultural Extension in which 976 and 793 farmers including farm women, rural youths and extension functionaries participated.

Front Line Demonstrations – Front line demonstrations (FLDs) on wheat (VL Gehun 829, VL Gehun 892), vegetable pea (Arkel), lentil (VL Masoor 4), toria (VL Toria 3) and cabbage (T-621) were conducted at farmers’ fields (10.80 ha). Total 359 farmers were adopted under this programme. During Kharif FLDs on oilseed, pulses and other crops were conducted at the farmers’ field in an area of 20 ha.

Seed Production Programme – A total of 12.46q seed of wheat, pea and lentil was produced at KVK Bageshwar and 51.5q seed (wheat – 43 q, lentil - 2.5q, field pea – 2q and vegetable pea – 4q) was produced at KVK, Chinyalisaur.