Director’s Desk
Looking into the diversity of crops grown in hills, thorough research efforts is being done by ICAR-VPKAS, Almora in diverse field of agriculture. During the period, two varieties of maize (Central Maize VL 55, Central Maize VL Babycorn 2) and one variety of rice (Central Rice VL Dhan 158) were notified. Besides, VL Mandua 380, VL Mandua 382, VL Madira 250 and VL Chua 101 were identified.

During the period, 7 trainings, 10 exposure visits and a kisan metas at institute and total 47 trainings at institute’s KVKs (Uttarkashi and Bagheswar) for farmers, tribal farmers, state officials of Uttarakhand were conducted. Besides, various activities related to Swachhta programs were also conducted at institute and its KVKs.

This publication is a brief of achievements of the institute in the field of research, extension and development conducted during January to June 2017.

The comments of the readers will be appreciated.

(Arunava Pattanayak)

Two hybrids of maize have been notified and released vide S.O. 1007(E) dated March 30, 2017. Baby corn hybrid Central Maize VL Baby Corn 2 (VMH 27) has been released for Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Maharashtra, Karnataka, Andhra Pradesh, Telangana, Tamil Nadu, Rajasthan, Gujarat, Madhya Pradesh and Chhattisgarh and normal corn hybrid Central Maize VL 55 (EFH 3605) has been released for Jammu & Kashmir, Himachal Pradesh, Uttarakhand, North East Hills, Andhra Pradesh. Telangana, Maharashtra, Karnataka and Tamil Nadu.

Central Maize VL Baby Corn 2

Central Rice VL Dhan 158 (VL 8657, IET 22982) This variety is notified by Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Agricultural Crops, New Delhi vide S.O. 1007(E) dated 30th, March, 2017 for Uttarakhand and Himachal Pradesh.

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पर्वतीय कृषि दर्शन

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Pradesh. This variety matures in 110-120 days with mean grain yield of 2,728 kg/ha in lower hills and 1757 kg/ha in medium Northern hills.

Two varieties of finger millet, viz., VL Mandiu 380 (brown grain) and VL Mandiu 382 (white grain) and one variety each of barnyard millet (VL Marad 250) and amaranth (VL Chau 101) were identified for Hills of Uttarakhand at SVT Kharif Workshop held on April 17, 2017 at Directorate of Agriculture, Dehradun.

Registration of Maize Hybrids with PPVF&R
Three hybrids of maize, namely, Vivek Maize Hybrid 39 (Registration No. 48 of 2016), Vivek Maize Hybrid 43 (Registration No. 49 of 2016) and Vivek Maize Hybrid 45 (Registration No. 249 of 2016) have been registered with PPVF&R.

Research Achievements

Nutritional composition of green fodder of dual purpose wheat (VL Gehun 829) under different fruit trees in agri-horti system
Dual purpose wheat crop is capable of providing green fodder during lean period mainly during December-January, when it is most needed. Dual purpose wheat was grown in agri-horti system with different fruit trees under irrigated condition and harvested for fodder after 80 DAS 5 cm above from the ground and their nutritional composition were studied. The highest and lowest crude protein (CP) content of green fodder was recorded under plum (26.5%) and lemon (21.9%) trees.

कृषि बागवानी प्रश्न में विभिन्न कल कृषि के नीचे विकासशील गेहूं (वी एच गेहूं 829) के हरे बाद की मात्रा संख्या

विकासशील गेहूं की फलवाद अन्य फल हरे बाद में उगाने से दिशमल –जानक दो सीरीज के दौरान, अन्य उगाने के लिए उगाने की मात्रा में हुई है, यह मात्रा प्रदान करने में सक्षम है। विकासशील गेहूं के पौधे की उगान-फलवादी प्रवृत्ति अन्दर तथा अलग-अलग मूल्य विभिन्न प्रकार के फल में विभिन्न प्रकार के हरे बाद लगाया गया तथा फिर तक 80 दिन पशुपालन प्रणाली से 5 से जीव फार्म काढ़ा गया। विभिन्न प्रकार के हरे बाद विकासशील गेहूं (वी एच गेहूं 829) के हरे बाद की मात्रा संख्या सर्वश्रेष्ठीक उगाने और ग्रीन फोडर (26.5 प्रतिशत) एवं नीतू (21.9 प्रतिशत) के पेड़ों के नीचे क्षेत्र
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plantation, respectively as compared to 23.4% without tree (open condition. Crude fiber (CF) and crude ash content were maximum (15.9 and 4.5%, respectively) in open cultivation. The highest CF and CA content among tree situations were estimated under lemon (14.7%) and apricot (13.2%) trees, respectively. The highest crude fat (CF) content of green fodder was observed under apricot trees (6.7%). The total digestible nutrient content was highest under plum trees (65.3%) compared to 56.3% in the open conditions.

Pathogenicity of chitinolytic Bacillus sp. against plant pathogenic fungi

Bacterial chitinases have a great potential in degradation of chitin, a major structural cell wall constituent of plant pathogenic fungi (PPF).

An attempt to utilize chitinolytic Bacillus sp. from Uttarakhand Himalayas yielded potential antagonists against major soil borne pathogens (Rhizoctonia solani and Sclerotium rolfsii). Under in-vitro dual culture plates these Bacillus sp. and associated chitinases caused clear deformities in mycelium of the pathogen at the contact area between test PPF and bacterial growth. The potential irregularities in fungal hyphae are manifested in the form of uneven thickenings, growth stunting, twisted mycelia, direct degradation, leakage of protoplasm, beading, protoplasm congregation, mycelial merging, localization of protoplasm, thinning of mycelium etc. The most common and prominent abnormalities were degradation of mycelium with uneven thickening followed by lysis and or bursting.

Prevalence of health hazards in finger millet production in Almora district

Prevalence of occupational health hazards in different activities carried out by hill farmwomen were examined in finger millet
के अध्यायों के अंतर्गत पर फसलें किया गया था तथा इनके के लिए ढकाल को ज्यादा वृक्षारोपण की गयी।

ढकाल का का के अंतर्गत तेलोज एवं बाहरी विभाग को बताकर निकाल विभाग को पदयात्रा के रूप में ढकाल, तेलोज व बाहरी विभाग की गयी। यह तेलोज व बाहरी विभाग की गयी।

कृषि विज्ञान केंद्र की गतिविधियाँ
कृषि विज्ञान केंद्र सरकारी एवं निर्माण द्वारा किसानों के लिए विभिन्न प्रशिक्षण कार्यक्रम का आयोजन किया गया है। किसानों को कृषि के विभिन्न क्षेत्रों पर प्रशिक्षण दिया गया। किसानों को कृषि के इस लक्षण नकारात्मकों को मिलान करने हेतु इन क्षेत्रों एवं विभिन्न समाज के प्रभाव को किया गया।

<table>
<thead>
<tr>
<th>गतिविधियाँ / Activities</th>
<th>कृषि विज्ञान केंद्र दिगम्बरी (उत्तरकाशी) / KVK, Chhiringas (Uttarkashi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>आयोजन / Trainings</td>
<td>31 (745 लाख) / 31 (745 beneficiaries)</td>
</tr>
<tr>
<td>आयोजन / FLDs</td>
<td>14.88 है. (302 लाख) / 14.88 ha (302 beneficiaries)</td>
</tr>
<tr>
<td>आयोजन / Production</td>
<td>11.19 है. (7535 जींत) / 11.19 Q. seed &amp; 7535 seedlings</td>
</tr>
</tbody>
</table>

Activities of Krishi Vigyan Kendras Training programmes on different aspects of hill agriculture were organized at KVK Uttarkashi and Bageshwar for the farmers of hills. Apart from this, different improved technologies as front line demonstrations were also conducted at farmers field by KVKs

cultivation in the Almora district. On the basis of the reported hazards, a hazard score was calculated for each activity. As per the hazard score derived, threshing was identified as the most hazard prone activity (Hazard score: 60.00) followed by weeding (Hazard score: 56.10) and harvesting (Hazard score: 55.90) (Fig.1). This suggests that interventions on agricultural health and safety must be introduced in these three activities on priority basis.

Display of Adopted Farmer's Produce
MGMG Activities
Under the MGMG programme 31 village in 6 clusters have been takenup in Almora district. Scientists of the institute are regularly visiting these sites for various activities undertaken i.e. interface with farmers, update farmers on agro-practices, provide information on inputs, spread awareness about swachh bharat abhiyan, climate change, water conservation, soil fertility, organizing farmers’ meet with institute specialist regarding solution of their problems related to agriculture. The activities carried under MGMG during the period were demonstrations of improved varieties of soybean (VL Soya 65 and VL Soya 65), rice (VL Dhan 65), ragi (VL Mandua 324 and VL Mandua 552) and barnyard millet (VL Madhwa 172) were conducted. A total of 4 Goshthi/ meetings were conducted alongwith distribution of farmer friendly literature. Eight crop based advisories were also sent to farmers through mKisan portal and need based SMS service. Linkages between farmers and NABARD were strengthened.

Soybean Demonstrations in Raun-Dal Villages
A Work for the Conservation and maintenance of proper discharge of the natural spring (naula) was undertaken under the Swachh Bharat Programme jointly with District Administration, Almora. VPKAS adopted a spring named Badreshwar near Almora bus station. The situation of this spring was very precarious and dirty prior to adoption. The institute completely renovated it and after that maintained its discharge with a proper outlet.
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- Swami Vivekananda Birth Anniversary was celebrated as National Youth Day at the institute on January 12, 2017.
- National Productivity Week was celebrated at the institute during February 12-18, 2017. During the week various programmes like radio talk, slogan competition, special trainings were conducted.
- International Women Day was organized at the institute on March 8, 2017. On the occasion, two mentally challenged girl students of Mangal Deep School, who won medal in Para Olympics were also honoured.

Honour of mentally challenged girl

- The Institute Management Committee Meeting was held on March 18, 2017 under the chairmanship of the Director, ICAR-VPKAS, Almora.
- Khairi Kisan Mela was organized at the Experimental Farm, Hauzaukhon on March 22, 2017 with great enthusiasm. Ex-DG BISA Dr. H.S. Gupta was the chief guest of the function. The Chief Guest appreciated the work done by the Institute for the upliftment of the Hill Agriculture. During these melas, some varieties developed by the institute were launched by the Chief Guests.

Farmer presenting handicraft to the Chief Guest

- Rabit Field monitoring was done on April 3, 2017 at Experimental Farm, Hauzaukhon.
- Swachhta Pakhwada was organized at the institute during May 16-30, 2017.
The World Environment Day was celebrated at the institute on June 5, 2017 with intent to create awareness among school children. Dr. O.P. Yadav, Director, ICAR-CAZRI, Jodhpur graced the occasion as chief guest. Transplanting was also done on the occasion.

**Plantation on the Occasion of Environment Day**

- The Meeting of Institute Research Council for Kharif 2017 was held on June 17, 2017 under the Chairmanship of Director of the Institute.
- Institute obtained ISO 9001:2015 certificate
- International Day of Yoga was organized on 21st June 2017 at ICAR-VPKAS Headquarter, Almora and its Experimental Farm at Hawalbagh.
During January-June 2017 a total of 7 trainings and 10 exposure visits were organized by the institute. A total of 370 participants which included farmers and extension personnel were benefited.

An economic analysis of Institute trainings suggested that the total cost of training per farmers was Rs. 1438.00. It was also found that the average irrigated land holding with the trainee farmers was 16 Nali (3200 sq.m) and out of that in average 60 per cent area (9.6 Nali) was utilized for vegetable cultivation by them. Thus, the total additional income gained by the trained farmers as compared to untrained farmers could be worked out as Rs. 8454.7. This gave a B: C ratio of Rs. 5.88:1.

- The institute has been honoured for the development of landmark varieties of maize (VL Makk 54 and HIM 128) and wheat (VL Gheva 421) during the Platinum Jubilee Celebration of ISGFPI on February 11, 2017. These varieties contributed towards food and nutritional security of the country.
Director receiving the award of landmark varieties

Dr. Lakshmi Kant, Head, Crop Improvement Division has been elected as Fellow of the Prestigious Indian Society of Genetics and Plant Breeding, New Delhi for the year 2015 in Platinum Jubilee Celebration function of the Society at Indian Agricultural Research Institute (IARI), New Delhi on February 11, 2017

Dr. Lakshmi Kant receiving the fellowship award

Dr. J. Stanley, Scientist received the SBA-Dr. TM Manjunath Young Scientist Award for significant contributions to Biological Control Research during Fifth National Conference on Biological Control held at Bangalore on February 9-11, 2017.


Drs. Renu Jethi and N.K. Singh received Young Scientist Award by Society of Human Resource and Innovation at Ist National Conference on “Advances in Global Research in Agriculture and Technology” during March 19-20, 2017 at Agra.

Dr. Kushagara Joshi, Mr. N.C. Belwal and Mr. Manoj Bhatt participated and put institute exhibition stall at Pantnagar Kisan Mela during March 4-7, 2017. The Stall won special prize as best stall in Government category in the event.

Dr. Nirmal Chandra, Pr. Scientist received "Outstanding Scientist Award" at IJTA 5th International conference on Agriculture, Horticulture and Plant science held at Ganga Beach Resort, Rishikesh, Uttarakhand during June 24-25, 2017.
मानव संसाधन विकास

- डॉ. एल. जयर एन एल से मुला ने राजस्थान प्रकाश सरकार व विकास अनुक्रमण, हैदराबाद में 2-23 जनवरी, 2018 को आयोजित 21 दिवसीय विशेष विश्वसनीय कार्यक्रम अनुसार दान नवीनीकरण प्रोजेक्ट, पंजाब प्रदेश सरकार उपरेड में नागीनी वर्तमान थी।
- डॉ. अनुनाद बाहुलक ने गैस टर्मिनल पर तृणतंत्र एवं विविध विकिन्द्रिय विकसित, पंजाब में 3 फरवरी से 5 मार्च, 2017 तक आयोजित 21 दिवसीय प्रशिक्षण कार्यक्रम के लिए उद्यमी विभाजन अनुक्रमिक एवं कृषि विभाजित रूप से आयोजित किया।

-human resource development

- Dr. ARNS Subhanna attended 21 days training programme on "Stored grain pest detection, identification and phytosanitary treatments" at National Institute for Plant Health Management (NIPHM), Hyderabad during January 2-23, 2017.
- Dr. Amuradha Bhartiya attended 21 days training programme on "Adoption of Suitable Conventional and Biotechnological Approaches for Biotic and Abiotic Stress Management in Crops" at CBPUA&T, Pantnagar during February 3 to March 5, 2017.
- Dr. Nirmal Chandra attended Training Programme on "Managing Technology Value Chain for Directors and Division Heads" at ASCI, Hyderabad during February 27 to March 3, 2017.
- Mr. Medni Pratap Singh attended Sensitization workshop-cum-training on "Recent Agricultural Engineering Technologies" at Ciae, Bhopal during January 9-13, 2017

Retirement

- Shri Sundar Singh Kanwal, Assistant on June 30, 2017

Transfer

- Shri. Suman Roy, Scientist to ICAR-Central Research Institute for Jute & Allied Fibres, Barrackpore, Kolkata on March 10.
- Dr. Salej Sood, Scientist to ICAR- Central Potato Research Institute, Shimla, Himachal Pradesh on March 25.
- Dr. Raghu, B.R., Scientist to ICAR- Indian Institute of Horticulture Research, Bengaluru on June 24

New Colleagues

- Dr. Jitendra Kumar, Scientist on April 15.

Promotion

- Shri. Naveen Chandra Joshi, Sr. Clerk to Assistant on February 3.
- Shri. Premod Kumar Chaudhary, PA to PS on February 4.
- Shri. Nandan Rajwar, Jr. Clerk to Sr. Clerk on February 4

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