अधिसूचित प्रजातियाँ

वी.एल. मंदुआ 347: जल्दी पकने वाली (100 से कम दिन में) मंदुआ की यह किस्म केंद्रीय प्रजाति विभवथण समिति द्वारा बिहार, गुजरात, झारखण्ड, कर्नाटक, महाराष्ट्र तथा उत्तराखण्ड में प्रचलित अवस्था में सिर्फ विभाग की गयी। इस प्रजाति ने उपयोगता छ: मास्य में 22.52 कु. / है. की औसत उपज दी, जो की राष्ट्रीय मानक प्रजाति बी.आई. 708 से 11.4 प्रतिशत अधिक थी। यह प्रजाति प्रत्येक मी. में लौट (7.9 मिला/ 100 ग्राम) तथा जिंक (3.56 मिला/ 100 ग्राम) की मात्रा मानक प्रजाति (5.6 मिला, लौट तथा 0.81 मिला, जिंक/ 100 ग्राम) से अधिक है। यह प्रजाति देश से मानसून आने की स्थिति में वैकल्पिक योजना के लिए भी उपयुक्त है।

गेहूँ में धान प्रति बाली के दाना की पहचान

एच.डबल्यू. 3060 / वी.एल. 830 के संकरण से विकसित गेहूँ की प्रजाति एच.डबल्यू. 0764 का वर्षावर्षण अधिक मानती समस्या नर्सरी में उपज परीक्षण नर्सरी के अंतर्गत 2008-09 से 2010-11 तक किया गया। तीन वर्ष के बाद इस प्रजाति की पहचान दाता (DWR Prog. Rep 2011, Genetic Resources, Vol. V, p 7) के रूप में की गई और इसे राष्ट्रीय जेनेटिक टेक्टक नर्सरी में रखा गया। इस प्रजाति से 45 खानों पर मानक डबल्यू.एच. 147 की औसतन 54.7 दाने प्रति बाली की तुलना में 62.3 दाने प्रति बाली की उपज प्रभाव है। बी. 2011-12 के दौरान राष्ट्रीय जेनेटिक टेक्टक नर्सरी के अंतर्गत इस किस्म ने उत्तरी हिमालयी क्षेत्र, उत्तर पश्चिम में बाली क्षेत्र, हिमालयी में बाली क्षेत्र एवं मैदानी क्षेत्र में औसतन क्रमशः 51, 52, 52 एवं 50 दाने प्रति बाली दिए। कुल मिलाकर इस किस्म से 65 दाने प्रति बाली उपज दी और भारतीय वर्ष में इस गुण में प्रथम रही।

Variety Notified

VL Mandua 347: VL Mandua 347 is an early maturing (matures in <100 days) finger millet (Eleusine coracana) variety notified by CVRC for cultivation in states of Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh and Uttarakhand. It recorded an average yield of 22.52 q/ha in these six states, which was 11.4% higher than national check VR 708 (20.21 q/ha). It has higher iron (7.9 mg/100 g) and zinc (3.56 mg/100 g) contents as compared to check variety VR 708 (iron 5.6 mg/100 g; Zinc 0.81 mg/100 g). The protein, dietary fibre, carbohydrate and calcium contents of VL Mandua 347 are comparable with VR 708. In addition, this variety was found to be moderately resistant to neck and finger blast disease and recorded less mean score as compared to VR 708. It will be a suitable variety for contingent or alternate planning and in areas where monsoon gets delayed or drought is a common phenomenon.

Donor for Grains Per Spike in Wheat Identified

A wheat genetic stock VW 0764, developed from a cross HW 3060/ VL 830, was tested under All India Coordinated Nurseries from 2008-09 to 2010-11 in Yield Component Screening Nursery (YCSN). After three years of testing, it was identified as confirm donor (DWR Prog. Rep 2011, Genetic resources, Vol. V p 7) and has been put in National Genetic Stock Nursery (NGSN), known as suggested crossing block in the country (DWR Prog. Rep 2012, Genetic Resources, Vol. V p 1). Based on three years testing in YCSN at 45 locations of the country it possessed 62.3 average grains per spike as compared to 54.7 grains per spike of the check WH 147. During rabi 2011-12 under NGSN it possessed 51 average grains per spike in North Hill Zone, 52 in North West Plain Zone & in North East Plain Zone, and 50 in Plain Zone. On overall basis it had 65 grains/ear and was ranked first in All India for this trait.

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Identification of Sources of Multiple Disease Resistance in Maize for the Hill Conditions

Maize cultivation in the North-Western Himalayan region is affected by many diseases viz., Turcicum leaf blight (TLB), Banded leaf and sheath blight (BLSB), Maydis leaf Blight (MLB), Curvularia leaf spot and Brown Leaf Spot. VPKAS Experimental Farm, Hawaiwagl (Almora) is a hot spot for TLB. However, in recent years the incidence of BLSB has become very severe, resulting in significant yield losses. The sclerotia produced by Rhizoctonia solani, the cause of BLSB, can survive up to 1-2 years in soil (without the host) and needs attention for its management. In view of studies on the Host-plant resistance to manage BLSB, 35 promising inbreds developed from VPKAS were screened for this disease by artificial inoculation in Kharif 2011. The same set of inbreds was also screened for TLB by artificial inoculation and MLB under natural condition. Five lines V 334, V 336, V 400, V410 and V 414 exhibited moderate resistance against BLSB. The first four lines were also found resistant to TLB and MLB. In order to validate the results, these five promising inbreds along with susceptible checks (CM 145 and CM 212) were again screened during Kharif 2012 under artificial epiphytotic condition for BLSB. They were also evaluated for TLB under artificial condition and MLB under natural condition.

The results observed during Kharif 2011 and Kharif 2012 were comparable and mean disease severity for the disease for two years is presented in Table-1. The lines identified as resistant/tolerant to multiple diseases can directly be used as parental lines for hybrid development and as donors in maize breeding program.

<table>
<thead>
<tr>
<th>Inbred Line</th>
<th>TLB</th>
<th>BLSB</th>
<th>MLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>V 334</td>
<td>3.5</td>
<td>3.0</td>
<td>2</td>
</tr>
<tr>
<td>V 336</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>V 400</td>
<td>3.0</td>
<td>3.5</td>
<td>2.5</td>
</tr>
<tr>
<td>V 410</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>V 414</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>CM 145 (S)</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>CM 212 (S)</td>
<td>3.5</td>
<td>3.5</td>
<td>2</td>
</tr>
</tbody>
</table>

### Table-1. Mean disease severity (0-5 scale) of TLB, BLSB and MLB
Optimization of FYM in gardenpea-french bean cropping system as substitute of chemical fertilizer

The application of organic manure influences agricultural sustainability by optimizing physical, chemical and biological properties of soils. To improve the application rate of FYM in garden pea-french bean cropping system, an experiment was conducted for six years in view to find out the application rate of locally available organic manure (FYM) as a substitute to the chemical fertilizer and Integrated Nutrient Management (INM). The estimation with the help of quadratic response curve showed that application of 20 t FYM/ha (FYMw) provided the economic optimum garden pea equivalent pod yield (312.0 q/ha) and was 54 and 29% higher than the pod yield of recommended NPK and INM (50% recommended NPK+FYM @ 5 t ha⁻¹), respectively. Application of 5.87 and 8.87 t FYM ha⁻¹ could substitute recommended NPK through chemical fertilizer and INM, respectively. The pod yield across the years for optimum yield was more sustainable (SYI=0.606) than that with application of recommended NPK (0.525) and INM (0.549) in the hills.

Successful cultivation of Pleurotus eryngii (King oyster mushroom) using locally available casing overlay

Wheat straw as a substrate for cultivation of Pleurotus (oyster mushroom) and overlaying five locally available casing material on exposed surface has been attempted. Cased substrate was watered at intervals of 3-4 days. Mushrooms were harvested manually when fully matured (pleats and margins become flat).

Yield was expressed as fresh mushroom weight (g)/300 g dry substrate whereas bioclimax efficiency (BE) is the ratio of fruiting body fresh weight to dry substrate weight expressed in percentage.

First mushroom harvest began 33 days after spawning and lasted for five days. Yield and biological efficiency were significantly affected by casing materials used. The significantly higher yield and BE were observed for treatments SC and SC+FYM+SS (210.0g/300g dry substrate with BE 70% and 191.7g/300g dry substrate with BE 63.9%, respectively), while lowest yield (101.7g/300g dry substrate) and BE (33.9%) was observed for non-cased substrate. Number of fruiting bodies was also affected by use of casing layer. Number of mushrooms for cased treatments ranged from 11-13, considerably higher than the non-cased treatment (9). Weight/fruit body was highest in case of treatments SC (16.2 g) and SC+FYM+SS (15.2 g), however, it was lowest in case of treatments FYM+SS (10.6 g) and non-cased control (11.9 g).
Screening of Plant Growth Promoting Bacteria from Vegetables

A total of 152 bacterial isolates were isolated from the rhizosphere, rhizoplane and endo-rhizospheric region of different vegetable crops on a different medium at 28°C. These were purified and screened for zinc solubilization with different insoluble zinc compounds. Out of these, 10 potential bacterial isolates were selected and plant growth promoting traits (phosphate solubilization, IAA, siderophore, HCN and Ammonia production) were analyzed.

Quantitative estimation of Zn solubilization revealed that isolate Z1 (NVMRs-1) solubilized all the insoluble zinc sources ZnO, ZnCO_{3} and ZnPO_{4}, upto 280.5, 272.64 and 266.22 μg/ml, respectively. Amongst the potential zinc solubilizing isolates tested for plant growth promotion, Z4 (NVMen-1) produced highest amount of IAA production (19.23μg/ml), Z2 (CNNR-5) & Z8 (NVMRs-3) showed strong HCN production and Z10 was strongly positive for siderophore production.

Other Activities

- Institute celebrated its 89th Foundation Day on July 04, 2012. Prof. Swapan Kumar Datta, DG (CS), ICAR, New Delhi graced the occasion as the Chief Guest and Shri M.C. Joshi, Former Director, DARL, Pithoragarh presided over the function. Dr. J.C. Bhatt, Director, VPKAS highlighted the achievements of the institute. Prof. Datta appreciated the research efforts of the institute and suggested for improvements in the programmes to serve the people in a better way. He stressed upon the pivotal role of agriculture and farmers in Indian economy & society, and expressed his views, mentioning the examples from the life of visionaries, like Swami Vivekananda, Rabindranath Tagore, Prof. M.S. Swaminathan and Prof. Boshri Sen, who led the Indian society to the path of integral prosperity. He
उदाहरण देते हुए अपने विचार यक्त किए। उन्होंने कहा कि भूमि तपस्या विभाजन का विकास तथ्यात्मक लोगों एवं कृषिकों की आवश्यकता से जुड़ा होना चाहिए और यदि कृषि से परिपूर्ण आदर्श गांव या आदर्श पद्धति का विकास हो जाये तो उसे केंद्र एवं राज्य के दूसरे भागों में भी दोहराया जाय ताकि कृषि वृद्धि सत्ता पर लाभार्थियों हो सकें। श्री एम.जी. जोशी ने बताया कि विद्यालय, केंद्रीय सेवाएं के साथ वार्ता लेखन ताकि कार्य योजना की जानकारी हो। समारोह का समापन आगतुकों को आम खिलाफ किया गया।

- जनता को गाज़र घास के प्रति जागरूक करने के उद्देश्य से संस्थान का हवाला देने में अगस्त 16 से 22 के दौरान चार घास चुनावत्ता समारोह मनाया गया। अभियान के तहत संस्थान के कर्मचारियों एवं कृषिकों द्वारा गाज़र घास की जाड़ जैसे उत्सव गया। यह अवसर पर आकाशवाणी, अभियान द्वारा कृषि सहकारिता कार्यक्रम के अन्तर्गत लोगों एवं तथ्यात्मक कृषिकों को जागरूक करने के लिए एक कार्यक्रम भी प्रसारित किया गया।

- संस्थान के प्रस्त्र हवाले में सितंबर 28 को किसान में का आयोजन किया गया जिजिए माननीय किसान समा क्षेत्र में अक्षरहारण सरकार श्री गोविन्द सिंह कुंवर जी मुख्य अध्यक्ष थे। मुख्य अध्यक्ष एवं अन्य आयोजकों द्वारा प्रतिष्ठान के दौरान संस्थान द्वारा जिक्रिकुड़ तकनीकियों की सहायता की गई। किसान में के दौरान विभिन्न संस्थानों, गैर सरकारी संगठनों के 25 से अधिक स्टाल लगाये गए। उन्होंने में सीमान्त किसानों सहित 800 कृषिकों ने भाग लिया। इस अवसर पर कृषि वैज्ञानिक विचार-विमर्श गोत्री भी आयोजित की गई।

- संस्थान प्रबंध समिति की बैठक अक्टूबर 16 को आयोजित की गई।
- इसी 2012-13 हेतु संस्थान सेवक परिषद की बैठक अक्टूबर 19-20 को आयोजित की गई।
- शोध संस्थान के सदस्य की सहभागी बैठक का आयोजन में श्री मिश्रा, रूपसुङ्कुलाल, से-ए-कर्मनी कृषि एवं तकनीकी विश्वविद्यालय, जामुं की अयाहारा में अक्टूबर 30-31 को किया गया।
- संस्थान द्वारा 'संसार' के साथ जुड़ाई 25 को अनुमुख किया गया।
- कृषि विभाजन कोट्टे, बागेश्वर की वैज्ञानिक सहायता समिति की 5वीं बैठक का आयोजन अगस्त 1 को किया गया।

Parthenium Awareness Week was celebrated at Hawalbagh Experimental Farm during August 16 to 22, with the main objective to create awareness among the people about this weed. A cleaning campaign was organized to uproot the Parthenium at Hawalbagh. The institute's staff and farmers participated in this campaign. A program was also broadcasted through All India Radio, Almora under 'Krisht Samridhi Programme' to aware the people and local farmers of the area.

Kisan Mela was organized at Experimental Farm, Hawalbagh on September 28. Shri Govind Singh Kunjwal, Hon’ble Speaker, Legislative Assembly, Uttarakhand, was the chief guest of the function. He and the other dignitaries visited the farm and appreciated the technologies developed by the institute. More than twenty five exhibition-cum-sale stalls were put by various line departments, institutes and NGOs. About 800 farmers including tribal farmers from border districts of Uttarakhand participated in this event. A farmer-scientist interaction meet was also organized.

The institute Management Committee (IMC) meeting was held on October 16.

Institute Research Council (IRC) meeting for Rabi 2012-13 was held on October 19-20.

The XVII Research Advisory Committee (RAC) meeting of VPKAS, Almora was held on 30-31 October, under the Chairmanship of Dr. B. Mishra, Former Vice-Chancellor, SKUAS&GT- Jammu (J&K).

MOU signed with (SANCHAR) on July 25.

Fifth Scientific Advisory Committee meeting was organized on Aug. 1 at KVK, Bageshwar, in which 40 officials participated.
• संस्थान में जुलाई 28 को जीव विविधता दिवस मनाया गया। इस अवसर पर बांज्य एवं कचनार के 300 पौधे लगाये गये।
• संस्थान राजमार्ग कार्यालय समिति की बैठक सितम्बर 12 को सम्पन्न हुई।
• संस्थान में 14 सितम्बर से 13 अक्टूबर तक हिंदी वैज्ञानि का आयोजन किया गया।
• बैठक में कई मुद्दों पर चर्चा की गई।
• सामाजिक, राजनीतिक, विद्यालयों एवं स्कूलों के बीच आयोजन का आयोजन किया गया।
• ज्ञान एवं शिक्षा का निरीक्षण सितम्बर 21-22 को किया गया।
• अ. आर. टी. दुबारा, सहायक महानिदेशक (क्षेत्र एवं वारा क्षेत्र) द्वारा अक्टूबर 1 को संस्थान का भ्रमण किया गया।
• डॉ. तेज परशार सिंह, कुलपति, कांग्रेस। क्षेत्र एवं वारा क्षेत्र में अक्टूबर 29 तक की संवाग में और क्षेत्र प्रदर्शनी का आयोजन किया गया।
• कृषि विभाग के बाद, उत्तरकाशी, विभागीय पंचायत में अक्टूबर 30 को किसानों में बोलकर कृषि प्रदर्शनी का आयोजन किया गया।
• अ. आर. टी. दुबारा, सहायक महानिदेशक (क्षेत्र एवं वारा क्षेत्र) द्वारा अक्टूबर 3 को संस्थान का भ्रमण किया गया।
• बैठक में कई मुद्दों पर चर्चा की गई।
• ज्ञान एवं शिक्षा का निरीक्षण सितम्बर 21-22 को किया गया।
• अ. आर. टी. दुबारा, सहायक महानिदेशक (क्षेत्र एवं वारा क्षेत्र) द्वारा अक्टूबर 1 को संस्थान का भ्रमण किया गया।
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• कृषि विभाग के बाद, उत्तरकाशी, विभागीय पंचायत में अक्टूबर 30 को किसानों में बोलकर कृषि प्रदर्शनी का आयोजन किया गया।
• माननीय शहीद विकास मंत्री द्वारा में और प्रदर्शनी का उद्घाटन किया गया।
• माननीय मंत्री एवं अन्य आयुक्त द्वारा क्रियाशीलता की सराहना की गई।
• कृषि मंत्री द्वारा अधिकारी उपाध्याय के अधीन कृषि प्रदर्शनी का आयोजन किया गया।
• बैठक में कई मुद्दों पर चर्चा की गई।
• ज्ञान एवं शिक्षा का निरीक्षण सितम्बर 21-22 को किया गया।

Vigilance awareness week organized during October 29 to November 4.

Field monitoring of kharif experiments was conducted on September 21-22.

Dr. R.P. Dua, ADF (FFC) visited the institute on October 1.

Dr. Tej Partap Singh, Vice-Chancellor, SKUAST-K, Srinagar (J&K) alongwith Dr. S.A. Vani, Director (Res.) visited the institute on November 3.

Kisan Mela and Agri exhibition was organized at Krishi Vigyan Kendra, Chinyalisaur on Oct. 30. Shri Pratam Singh Pawan, Hon'ble Minister for Urban Development, Urban Employment, Animal Husbandry, Fisheries, Fruit Industry, Civil Defence & Homeguards and Prisons of Uttarakhand Government was the Chief Guest of the function. He along with other dignitaries visited the farm and appreciated the activities.

More than 26 Exhibition-cum-sale stalls were put by various line departments/ institutions and NGOs. About 900 farmers participated in this event. A farmer-scientist interaction meet was also organized.

New Colleagues

• Shri Manoj Bhatt as Field Technician (T-3) on July 13.
Activities of Krishi Vigyan Kendra

Different training programmes were organized at KVK Uttarkashi and Bageshwar for the farmers of hills. These trainings were organized on different aspects of hill agriculture. Apart from this, demonstration of different improved agricultural technologies were also done at farmers field in terms of front line demonstrations by these KVKs (Table-2).

<table>
<thead>
<tr>
<th>Krishi Vigyan Kendra</th>
<th>Training</th>
<th>Beneficiaries</th>
<th>Adhol Pati Pradaran</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uttarkashi</td>
<td>55</td>
<td>1343</td>
<td>(74 हेक्टर)</td>
<td>1530</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(74 ha)</td>
<td></td>
</tr>
<tr>
<td>Bageshwar</td>
<td>24</td>
<td>515</td>
<td>(105.04 हेक्टर)</td>
<td>2591</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(105.04 ha)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28 इकाई (600 चुंचुं)</td>
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<td></td>
<td>28 इकाई (600 चुंचुं)</td>
<td>28</td>
</tr>
</tbody>
</table>

Table-2: Tranings and front line demonstrations organized by KVKs
From Director’s Desk

VPKAS, an institute of ICAR, has been engaged in agricultural research and evolving technologies required to cater to the needs of farmers of N-W Himalayas. In view of the needs of small and marginal farmers, the institute has developed a number of technologies. These technologies provide potential to uplift agriculture for its sustenance and build up confidence of farmers through their economic upliftment.

Cereals and millets form the major part of food in Himalayan states. Millets fare relatively better in adverse climatic conditions than other crops and are nutritionally rich. In finger millet, a variety VL Mandua 347, developed by this institute has been notified during the reported period. In wheat, VW 0764 has been identified as donor for grains per spike. Sources of multiple disease resistance in maize were also identified.

Biodiversity Day was organized by planting 300 plants of Quercus sp. and Bahania sp. Parthenium Awareness Week was celebrated to make hill people aware of its ill effects.

“GREETINGS FOR HAPPY, PROSPEROUS AND PRODUCTIVE NEW YEAR 2013”

(J.C. Bhatt)
Director

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