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UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD



## **RABI PROCEEDINGS 2020-21**

**ZONAL RESEARCH AND EXTENSION ADVISORY COUNCIL AND  
ZONAL RESEARCH AND EXTENSION FORMULATION  
COMMITTEE MEETING**



**NORTHERN DRY ZONE, NORTHERN TRANSITION ZONE,  
HILLY ZONE AND COASTAL ZONE  
(ZONE – 3, 8, 9 and 10)**

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**NORTHERN DRY ZONE, NORTHERN TRANSITION ZONE,  
HILLY ZONE AND COASTAL ZONE  
(ZONE – 3, 8, 9 and 10)**

**Date: 27 & 28<sup>th</sup> August, 2021**

**DIRECTORATE OF RESEARCH, UAS, DHARWAD**

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## PREFACE

The Annual workshop of the Rabi Zonal Research and Extension Advisory Council and Zonal Research and Extension Formulation Committee (ZREAC & ZREFC) for Northern Dry Zone, Northern Transition Zone, Hilly Zone and Coastal Zone (Zone 3, 8, 9 & 10) for the year 2020-21 was held from 27 & 28th August, 2021 at Conference hall (Virtual Mode), UAS, Dharwad. The Scientists from University of Agricultural Sciences, Dharwad and officer from the Department of Agriculture participated in the meeting.

An in depth discussion took place on the research results generated during the previous year and also on the technical programme to be implemented during Rabi 2020-21. In addition, based on the results of the experiments and farm trial conducted **Three** new varieties of different crops were released and this will come in a big way to enhance the farm income.

All the scientists of the University and Extension Officers of the Departments are requested to implement the approved technical programme as finalized in the workshop in the ensuing year.



Director of Research  
UAS, Dharwad

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**UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD**  
**RABI ZREAC & ZREFC WORKSHOP 2020-21**  
**AGENDA**

**Date: 27 & 28<sup>th</sup> August, 2021**  
**Mode**

**Venue: Virtual**

**27.08.2021 (Friday)**

(9.00 to 9.30 AM)	<b>Registration</b>
(9.30 to 10.30 AM)	<b>Inaugural Session</b>
Chairman	<b>Dr. M. B. Chetti, Hon'ble VC, UAS, Dharwad</b>
Rapporteurs	Dr. V. R. Kulkarni and Dr. S. C. Talekar
Director of Research, UAS, Dharwad	: Welcome, Action Taken Report and Overview
Director of Extension, UAS, Dharwad	: Extension Activities of UAS, Dharwad
Address by Hon'ble VC, UAS, Dharwad	
(10.30 to 11.30 AM)	ADR(HQ), Dharwad : Weather and Crop Conditions ADR, Vijayapur
	ADE, Dharwad : ADE, Vijayapur : Field Problems
<b>Technical Session I</b>	Presentation of Research Results of Concluded Experiments and New Farm Trial Proposals
(11.30 AM to 1.30 PM)	Chairman : Dean(Agri.) AC, Vijayapur
	Co-Chairman : Assoc. Director of Extension, UAS, Dharwad
	Rapporteurs : Dr. Suma Biradar and Dr. R. Channakeshava
	Presenters : University HoDs of All the Departments
<b>Technical Session II</b>	Presentation of Results of Farm Trials of <i>Rabi</i> 2020-21
(2.15 to 5.00 PM)	Chairman : Director of Extension, UAS, Dharwad
	Co-Chairman : JDA, Dharwad
	Rapporteurs : Dr. D. A. Nithyashree and Dr. Prasannakumar B. H.,
	Presenters : ADE, Dharwad and ADE, Vijayapur and JDAs of Dharwad, Haveri, Gadag, Bagalkot, Vijayapur, Belagavi and Uttar Kannada

**28.08.2021 (Saturday)**

<b>Technical Session III</b> (9.30 AM to 12.30 PM)	Release Proposals and Modification to PoP Chairman : Director of Research, UASD Co-Chairman : Dean(Agri.), AC, Hanumanamatti Rapporteurs : Dr. Gurudatt Hegde and Dr. Suma Mugali Presenters : Concerned Scientists
<b>Technical Session IV</b> (12.30 to 4.00 PM)	Finalization of Rabi Technical Programme Chairman : Associate Director of Research(HQ), UASD Co-Chairman : Librarian , UAS, Dharwad Rapporteurs : Dr. S. R. Salakinakoppa and Dr. Laxmi Patil Presenters : University HoDs of All Departments
<b>Technical Session V</b> (4.00 to 5.00 PM)	Plenary Session Chairman : Dr. M. B. Chetti Hon'ble Vice-Chancellor, UAS, Dharwad Co-Chairman : Dean (Agri.), AC, Dharwad Rapporteurs : Dr. B. N. Motagi and Dr. Vanishree
(5.00 to 5.15 PM)	Vote of thanks : Dr. Ashok Sajjan Associate Director of Research, RARS, Vijayapur

**(Note: Lunch break from 1.30 to 2.15 PM)**

## INAUGURAL SESSION

**Chairman** : Dr. P. L. Patil, Director of Research, UAS, Dharwad

**Rapporteurs** : Dr. V. R. Kulkarni and Dr. S. C. Talekar

At the outset, Dr. P. L. Patil, Director of Research, UAS, Dharwad welcomed Honorable Vice Chancellor, all the Officers, Joint Directors of Agriculture of districts of UAS, Dharwad jurisdiction, University Heads of all disciplines, Heads of all the departments, Heads of all AICRPs, Teachers and Scientists of Teaching, Research and Extension streams for the virtual meeting of Rabi 2020-21 ZREAC and ZREFC meeting of UAS, Dharwad.

### Action taken report and overview of research during Rabi 2020-21

Director of Research presented the action taken report for the suggestions of the Honorable Vice Chancellor in the previous ZREAC and ZREFC meeting and the overview of research during rabi 2020-21.

Sl. No.	Suggestion	Action Taken Report
1	Water soluble specially fertilizers especially for high rainfall areas where crops are showing general yellowing symptoms	Water soluble fertilizers (19:19:19, KNO <sub>3</sub> , CaNO <sub>3</sub> , MKP and SoP) in chilli and tobacco was found advantageous
2	Micronutrients such as ZnSO <sub>4</sub> and FeSO <sub>4</sub> have to be developed specially nano-based formulations	<ul style="list-style-type: none"> <li>• Development of nano-micronutrient (Zn, Fe, Cu, Mn, B and Si) is underway using laser abrasion and ball mill grinding technique</li> <li>• Green synthesized magnesium and zinc oxide nano-particles (Bt cotton), potassium, calcium and silicon nano-particles (rainfed wheat), silver and zinc nano-particles (chilli), silver and copper myco nano-particles using <i>Trichoderma harzianum</i> (early blight of tomato) are developed and to be tested under field condition</li> </ul>
3	Development of farm friendly, eco-friendly small scale equipments to reduce drudgery	Small scale equipments like mechanized maize sheller, groundnut decorticator, motorized groundnut stripper and electric motor operated bamboo cutting machines are developed to reduce the drudgery.
4	Studies on climate resilient agriculture	<ul style="list-style-type: none"> <li>• Three outside funded projects are operating at IABT for improving abiotic stress tolerance especially for drought and high temperature stress</li> <li>• Project proposals have been submitted to ICAR on climate resilient crop improvement in groundnut and chickpea, especially in areas of abiotic stress tolerance.</li> <li>• <i>Ectoine</i> genes are being employed for development transgenic rice plants for salt tolerance</li> <li>• During the post-rainy season of 2020-21, advanced generation populations of sorghum were evaluated under late sown conditions for post-flowering drought tolerance</li> </ul>



5	Popularization of released varieties and technologies through various media	Efforts were made to popularize UAS technologies through News papers – 263, FM Radio- 102, Whatsapp groups- 75, Online training- 44 and mKissan groups-9 reaching a total of 5.57.519 farmers
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The Director of Research presented the overall rainfall and cropped area under UAS, Dharwad jurisdiction. In all the districts the rainfall during rabi 2020-21 was normal to above normal except Vijayapura where in the 4.6 % deficit was observed as compared to long period average rainfall. An average of 16.7% and 20.2% excess rainfall was reported in UAS, Dharwad jurisdiction and in Karnataka respectively, as compared to long term average. He emphasized to conduct research on the important crops which are majorly grown in UAS, Dharwad jurisdiction. He informed the house about the area under cultivation of different crops during in comparison with total area in Karnataka. During rabi 2020-21, cereals are grown in about 64.42%, pulses in 59.12, oilseeds in 18.76 %, and commercial crops in 89.68% of total area in these respective crops in Karnataka. Further, appreciated and congratulated all the scientists involved in bring out the release of DASF-1 (ANG-18-02) safflower variety at national level in Zone-I which recorded 19.7% superiority in oil yield and 19.6% in seed yield. In summers 2020-21, the area under UAS, Dharwad jurisdiction in for cereals was 55.38%, 41.12 for pulses, 66.34% for oilseeds and 45.03% for commercial crops as compared to the total area in the state in these crops. The higher cropped area under cereals and pulses was reported in Belagavi and Uttara Kannada districts, respectively. The highest area under oilseeds and commercial crops was reported in Bagalkot district.

To date, a total of Rs. 418.89 lakhs fund was mobilized to the University during 2021-22 through External funded projects; of which Rs. 236.80 lakhs realized through one project from Government of Karnataka; Rs. 177.00 lakhs through three projects from RKVY, New Delhi and Rs. 5.09 lakh through one project from private company. Priority was given to allocate the testing trials to research stations, followed by teachers and the scientists in AICRPs; and similar kind of priority will be continued in future also.

A total of 41 technologies (7- crop improvement, 8-crop production, 2- crop protection, 1- organic, 13-value addition, 5-farm machinery, 1-animal science and 4-others) developed were accepted and recommended for package of practices during rabi 2020-21. In crop improvement, seven varieties / hybrids [DBG 3 & 4 in groundnut, GH 150125 (Dharma) in maize, CSH-42 in Kharif sorghum, DSb-34 in soybean, C-215 in fodder cowpea and DBG-16 in black gram) were identified for release through SVRC.

The efforts made on commercialization of technologies of UAS, Dharwad are presented. A total of 32 varieties / hybrids in different crops are accepted for commercialization through Agrinnovate India (ICAR). DDCC 1 color cotton variety commercialized non-exclusively with a license fee of Rs. 3 lakhs + 18 % GST on Registry saree, Bengaluru. DMB 225 color cotton variety commercialization non-exclusively with a license fee of Rs. 5 lakhs + 18 % GST to Vedanta, Bengaluru and SHAHI exports, Indoor is under process. Commercialization of Bio-fertilizers and Bio-pesticides is under the process by UHoD, Agril. Microbiology; Head, Institute of organic Farming and the scientists. The results of four farm trials accepted during rabi ZREAC & ZREFC meet 2019 held on 3-4 September 2020 are awaited.

A total of 21501 quintals of different classes of seeds (Nucleus – 275 quintals, breeder – 6130 quintals, foundation – 3261 and certified - 11835) are produced during 2020-21. The certified seed production was taken up through Farmer Producer Organizations and generated good income to the University. For nucleus seed production, a special maintenance breeding facility has been developed by the Seed unit for nucleus seed production which is constantly monitored by the Associate Director of Research (Hq), Dharwad. The respective crop breeder are requested to visit this breeding block continuously during the cropping period and act positively to maintain the purity of parental lines of varieties and hybrids.

### **Extension activities of UAS, Dharwad**

Director of extension presented the overview of the extension activities during rabi 2020-21. He informed the house that 114 Radio/Television programs, 137 training programs, 6 farmer-to-farmer programs, 3 programs on innovations by the farmers, 177 problematic field visits, 21 disease/insect surveys, 150 programs of one scientist-one RSK, 21 workshops/webinars and 78 farm trials/demonstrations were conducted. To date about 4000 calls from farmers have been received from April 2020. Many activities on creating awareness about COVID-19 disease, DAESI programs/workshops were also conducted. A total of 1063 programs have been conducted through University FM Radio to disseminate the useful information to the farmers. He also informed that Best Krishi Vigyan Kendra was awarded to KVK, Uttara Kannada. The technologies developed in the University are popularized through 263 columns in the News papers, 102 Radio programs, 75 whatsapp groups, 44 online trainings and 09 mKisan groups. Through mKisan groups, the technologies reached about 5,42,560 farmers.

KVK, Hanumanamatti carried out several activities for management of fall armyworm in maize, sucking pests and pink bollworm in cotton in Haveri district. Introduced DHFT-109-3 and DHLM-36-6 minor millets varieties in 500 hectares, and groundnut variety G-2-52 in about 800 hectares. KVK, Bagalkote produced 821 kg *Metarhizium* and sold to farmers. Frontlines demonstrations of onion variety Bhima Super, chickpea variety JAKI-9218, and pigeon pea variety TS-3R were conducted. Activities on apiculture, Joni jagary production organized by KVK, Sirsi. Efforts were made by KVK, Dharwad to popularize and spread of Bhima super onion variety in 950 hectares in Navalagund taluks, encouraged organic paddy cultivation in 20 hectares in Dharwad district, popularized the cultivation of IPM-2-14 green gram variety in paddy fallows in about 750 hectares. KVK, Indi introduced new wheat variety DDK 1029 in about 300 hectares in Indi taluka.

### **Weather and crop situation**

The Associate Director of Research (HQ) presented weather condition and crop situation of 10 research stations and 17 AICRP centres of Zone-8, 9 and 10 during rabi 2020-21. All the research stations received good amount of rainfall during September and October 2020. The mean excess rainfall during rabi season (September 2020 to April 2021) across all the stations was observed to be > 50 % with a range from 29.48 % in Mugad to 136.25 % in Malagi. Yield reduction in chickpea crop was noticed due to excess rainfall in Hukkeri and Sankeshwar.

The productivity of experimental blocks, seed production and general crops in all the 10 research stations and 17 AICRPs are compared with the state average in respective crops. In few stations and AICRPs, more than state productivity was observed, whereas

lower yield was realized in other few stations and AICRPs. The crop breeders are urged to enhance the productivity in experimental fields of all the AICRPs by utilizing highly diverse, trait specific germplasm/breeding material in developing varieties and hybrids. The breeders need to re-look into the potentiality of their breeding material and the methodology as well to realise higher yield levels. The crop production and protection scientists also need to see that the yield levels in proposed treatments has to be more than already recommended and available technologies in the PoP. The scientists of research stations are also informed to see that the yield levels in seed production plots can be more than the state average.

Director of Research appreciated the eye opening presentation by the Associate Director of Research (Hq) regarding the comparison between yield levels of different crops in experimental blocks and seed production with that of state average and highlighting importance of the intervention of all the scientists to enhance the yield to potential levels. Furthermore, all the Heads of Research stations are informed to look into the constraints that are hindering the crop yields so that the productivity can be enhanced.

Associate Director of Research, RARS, Vijayapur presented the weather parameters of Zone-3. He opined that all the research stations in Zone 3 also experienced excess rainfall which ranged from 14.8% in Gadag to 180.1 % in Konnur during September to December 2020. Continuous and excess rainfall during September and October months delayed the land preparation and sowing of crops in Annigeri, Arabhavi, Bagalkote, Belavatagi, Gadag, Kalloli, and Vijayapura research stations, which hampered growth and development in most of these stations. Nevertheless, good amount of rainfall during these months helped timely sowing and good crop establishment in Hombala, Konnur and Mudhol. Incidence of wilt, rust and pod borer in chickpea in Annigeri, head blight in wheat due to excess rainfall during January 2021 in Arabhavi, moisture stress during Nov-Dec months in Bagalkote, significant yield reductions up to 50 % in sorghum and chickpea due to poor germination in Belavatagi, 25 to 75% cotton yield reduction due to pink boll worm incidence and severe rust incidence in Gadag, head blight in wheat due to excess rainfall during January and February in Kalloli, significant yield reduction due to early shoot borer and rust in sugarcane, stem borer and stem fly incidence in late sown in Mudhol was reported.

### **Field based problems and researchable issues**

Associate Director of Extension (Hq) presented the following researchable issues / field problems observed during rabi 2020-21 in Zone-8, 9 and 10.

1. Bakahu: This is the indigenous technology of rural people of Dakshina and Uttara Kannada districts. It was brought to the notice of the house that Honorable Prime Minister of India spoken about its utilization in Man-ki-bat programme. The research related to the utilization of Bakahu in preparation of banana powder and various dishes can be taken up.
2. Looking to the lesser cost and advantages of nano-urea as compared to granular urea, research on the foliar application of Nano-urea on different crops may be initiated instead of existing technologies like 2.0% Urea and DAP application.
3. Water soluble fertilizers and nutrients at different concentrations and combinations may be studied to overcome various deficiencies and stresses.
4. Technologies need to be recommended for management of rust in chickpea.

### **Suggestions from Director of Research to address above mentioned problems**

- HOD, Food Technology and Food Science and Nutrition were informed to look for the value addition of Bakahu.
- The crop production scientists are suggested to take up the experiments of use of nano-urea in different crops, standardize the concentrations. The experiments may also be taken up to identify the soil application of nano-urea in high rainfall areas as a possible substitute for granular urea. The Dr. B. M. Chittapur, Expert member opined that the studies may be initiated as PG research, large scale or front line demonstrations by KVKs in farmers' field.
- A thorough discussion was held with respect to Adhoc recommendation of technology for management of rust in chickpea. The house opined that the suitable technology can be approved and recommended only after the crop labeling of the chemical by the CIB.

Associate Director of Extension of Zone 3 presented the field problems identified and researchable issues as listed below.

<b>SN</b>	<b>Researchable problem</b>	<b>Location</b>
1	Head blight in wheat	Bagalkote
2	Wheat drying due to moisture stress / rust	Bagalkote
3	Suspected stem borer in wheat	Indi
4	Drying of wheat spikelets due to higher temperature and unknown reason	Mudhol
5	Rust in chickpea	Bagalkote, Gadag
6	Sudden falling of banana plants	Vijayapura
7	Sudden drying of newly established grape orchards	Vijayapura
8	SMD infected red gram	Vijayapura
9	Water scarcity specially in summer	Indi
10	Root grub in pigeon pea, onion and groundnut	Indi
11	Iron and zinc management through Bahar in Lime	Indi
12	Brucellosis in goats	Indi
13	Wilt in pomegranate	Indi
14	Replacement of Jayadhar cotton with dwarf varieties of rabi sorghum in mixed cropping system of onion-chilli-Jayadhar cotton prevailed in Gadag district	Gadag
15	Cuscuta problem and Wireworm damage in carrot	Ron
16	Panicle damage in rabi sorghum	Gadag
17	Whitefly incidence in sugarcane	Mudhol
18	Pyrrilla incidence in sugarcane	Mudhol
19	Onion twisting disease	Mudhol

In response to the above listed identified diseases, University Head, Department of Plant Pathology brought to the notice of Director of Research and informed the house that new technical programs have been already formulated for head blight in wheat, sudden falling of banana plants, SMD incidence in red gram and onion twisting disease and will come out with recommendation to manage these problems. University Head, Department of Agricultural Entomology opined that already available recommendations from the University to manage root grub in other crops can be followed in pigeon pea, onion and ground nut crops; recommendations are also available for management of wilt in

pomegranate and whitefly in sugarcane and same can be disseminated effectively overcome these problems.

Director of Extension opined that technologies are available from University for cuscuta management and the same can be used to reduce its menace. The Director of Research requested the University Heads of the concerned Departments to formulate new technical programmes to address the above mentioned other researchable issues and also requested ADE, Dharwad to pass on the field problems if horticulture crops to University of Horticultural Sciences, Bagalkote to address the problems. At the end of the session, he thanked all the officers and fellow scientists for their active participation in the discussion.

## TECHNICAL SESSION – I

**Chairman:** Dr. S. B. Kalaghatgi, Dean (Agri.), College of Agriculture, Vijayapura

**Rapporteurs:** Dr. Suma Biradar and Dr. R. Channakeshava

### **Presentation of Research Results of Concluded Experiments and New Farm Trial Proposals**

#### **Session started by welcoming the speakers by the chairman**

I Dr. Ramesh Babu, University HOD of Agronomy presented results of four concluded experiments.

**1) Weed management in Safflower:** Among the different treatments, application of Sulfentrazone followed by intercultivation at 30-35 DAS has recorded less number of weeds at 30 & 60 DAS as compared to other treatments and recorded higher seed yield, net returns and benefit-cost ratio in Safflower. House suggested to bring the crop label for Sulfentrazone herbicide before it entering into package of practice. ADR (HQ) asked about any health issues due to usage of herbicides. After detailed discussion, house accepted the proposal for farm trial.

**T<sub>1</sub> :** Sulfentrazone 48 @ 105 g a.i./ha + Intercultivation @ 30 DAS

**T<sub>2</sub> :** Farmer's practice

- 2) Natural farming in comparison with other farming practices in summer groundnut
- 3) Natural farming in comparison with other farming practices in summer black gram
- 4) Natural farming in comparison with other farming practices in summer green gram

Natural farming practices in all the above crops had recorded higher yield, haulm yield, higher shelling percentage and net returns as compared to conventional farming and organic farming. Natural farming exhibited the advantage of higher activity of bacteria, fungi, actinomycetes and beneficial population as compared to other practices.

Dr. P.V. Patil said that, the above trials data has not been presented and discussed in pathology technical meet. Similarly, Dr. P.S. Hugar informed the house that data has also not been presented in entomology technical meet. After detailed discussion, house suggested to call for one special meeting by including all discipline scientists and the data pertaining to entomology, pathology and microbiology should be presented in the said meeting.

Dr Biradar B.D., University HOD (GPB) presented two proposals for Farm Trials and highlights on four release proposals for inclusion in the POP.

**II. 1) Proposal of Sugarcane SNK 13436 for Farm Trial for zone:** The sugarcane genotype is medium maturity, non flowering, high yielding, high sugar yield, better tonnage and non spiny. The entry showed moderately resistant to Red rot and resistant to rust. Since, the proper data on disease and pest incidence was missing, the house suggested to bring the proposal for next *khariif* ZREAC workshop along with relevant information and hence the proposal was not accepted.

**2) Proposal Lucerne DL-5 for Farm trial of Zone 8 and 3:** The fodder legume, which was light green in foliage with broad leaves with higher green fodder yield of 10 to 20 per

cent. It recorded higher IVDMD, lower ADF and low NDF. This proposal also lacking the data on pest and disease, the house suggested to bring the revised proposal along with well compiled relevant data to the next *kharif* workshop. Director of Research suggested Dr. Shridhar to send the proposal for nominating plant pathologist. Hence, the proposal was not accepted.

III. Dr. P.S.Hugar, University HOD of Entomology presented the results of the concluded experiments.

**1) Management of Fall armyworm through seed dressers and sprayable formulations in *rabi* Sorghum:** Among the different treatments, Seed treatment with (Thiamethoxam + Cyantraniliprole) followed by spraying of Chlorantraniliprole at 0.3ml/lit at 30 days after emergence and Seed treatment with (Thiamethoxam + Cyantraniliprole) followed by spraying of Spinetoram @ 0.5ml/lit at 30 days after emergence was found to be effective in controlling fall armyworm larval population, per cent infestation and recorded higher seed yield, net returns and benefit cost ratio at both Vijayapura and Dharwad locations. Dr. P.S. Hugar informed to the house that, the above listed insecticides have been recommended by CIBRC. Dr. S.M. Kachapur suggested to separate the pooled yield data year wise over the locations Vijayapura and Dharwad location. It was accepted for farm trial.

**T1 :** Seed Treatment with (Thiamethoxam + Cyantraniliprole) @ 5ml/kg seed + Chlorantraniliprole @ 0.3ml/lit at 30 Days after emergence

**T2 :** Seed Treatment with (Thiamethoxam + Cyantraniliprole) @ 5ml/kg seed + Spinetoram @ 0.5ml/lit at 30 Days after emergence

**T<sub>3</sub> :** Untreated control

**2) Management of shoot fly in wheat:** The experiment was conducted as multi-location trial at MARS, Dharwad, ARS, Nippani and AEEC, Mudhol. Among the different treatments, seed treatment with Thiamethoxam 30 FS at 5 ml per kg of seeds followed by spraying of Cypermethrin 10 EC at 0.5 ml/lit at 15 days after emergence has found to be superior in controlling oviposition by shoot fly, per cent dead heart and recorded higher yield and net returns at all the locations. Dr. P.S. Hugar informed the house that, the above listed insecticides have been recommended by CIBRC. The proposal was accepted for farm trial.

**T1:** Seed treatment with Thiamethoxam 30 FS @ 5ml /kg followed by spraying of Cypermethrin 10 EC @ 0.5ml/l at 15 Days After Emergence.

**T2:** Untreated check

**3) Management of fall armyworm through seed treatment in maize:** Among the different treatments, seed treatment with Cyantraniliprole 19.80% + Thiamethoxam 19.8% w/w FS) @ 6 ml/kg of seeds has found to be effective in controlling fall armyworm larval population and per cent leaf damage and recorded higher seed yield and net returns in maize. House suggested to conduct the farm trial only at university centers. It was accepted for farm trial.

**4) Management of fall army worm in maize through foliar sprays in maize:** Among the different treatments, foliar spray of Emamectin benzoate 5% + Lufenuron 40%WG at 31.5 (3.5+28) g. a.i./ha had recorded lower incidence of fall armyworm larval population and per cent leaf damage in maize. It was accepted for farm trial to conduct at the university centres.

### 5) Management of fall army worm in maize through novel molecules in maize:

Among the different treatments, foliar spray of Chlorantraniliprole 9.3%+ Lambda cyhalothrin 4.6% ZC @ 35 (23.42+11.58) g a.i./ha was found to be effective in controlling the incidence of fall armyworm larval population and recorded higher yield and net returns. It was accepted for farm trial to conduct at the university centres.

Dr. P.S. Hugar informed to the house that, the above listed insecticides have been recommended by CIBRC. The Director of Research suggested the scientist to conduct above three farm trials and LSD by including all three treatments viz., seed treatment with Cyantraniliprole 19.80% + Thiamethoxam 19.8% w/w FS) @ 6 ml/kg, foliar spray of Emamectin benzoate 5% + Lufenuron 40% WG at 31.5 (3.5+28) g. a.i./ha and foliar spray of Chlorantraniliprole 9.3%+ Lambda cyhalothrin 4.6% ZC @ 35 (23.42+11.58) g a.i./ha along with untreated check.

**T1** Cyantraniliprole 19.80% + Thiamethoxam 19.8% w/w FS @ 6 ml/kg of seed

**T2:** Foliar sprays of Emamectin benzoate 5% + Lufenuron 40% WG @ 0.15 ml/lt (2 sprays at 15 days interval starting from 15 DAE)

**T3:** Foliar spray of Chlorantraniliprole 9.3%+ Lambda cyhalothrin 4.6% ZC @ 0.5 ml/lt (2 sprays at 15 days interval starting from 15 DAE)

**T4:** Untreated Control

IV. Dr Sarawad I.M., University HOD (Soil Science) presented the results of two concluded experiments.

The results on two proposals on “Effect of supplement and reduced dose of N through FYM under Sorghum + Chickpea (2:4) intercropping system in calcareous vertisols” and “permanent manurial trial: safflower + chickpea (2:4) intercropping system” were discussed thoroughly. The house felt that the FYM application with such high dose may not be economically feasible which may lead to higher cost of cultivation, and suggested Dr Kumara to compile the data after one more year of continuation.

V. Dr Nawalagatti, University HOD (Crop Physiology) spoke about the concluded results of “**Use of PGR’s and nutrients for enhancing the productivity of Chickpea**”. The treatment T5: chickpea magic @0.8% at 40 and 60 DAS resulted in higher plant height, chlorophyll content, chlorophyll stability index, higher photosynthetic rate, higher proline content and more number of branches which yielded higher grain production under rainfed condition with added advantage of drought tolerance. The proposal was accepted for farm trial.

T1: Magic @0.8% at 40 and 60 DAS of Chickpea

T1: Farmers practice

VI. Dr. Shashidhar Shirahatti, University HOD (Agril. Engineering) presented the proposal for modification of POP on “**Impact of subsoilers on *in situ* moisture conservation in vertisols**”. The treatment T3: Subsoiling @2m + Vermicompost @2.5t/ha conserved the highest moisture till the maturity of the crop with the highest output-input energy ratio. The discussion went on for the suitability of soil, frequency and vermicompost application. Dr M.S. Shirahatti explained that, this operation has to be carried out once in a three years with one round of vermicompost application which is economically viable. It is much more beneficial technology for medium to deep black soils. The expert member Dr Chittapur commented on the suitability of this technology, the information on soil compactness and finally the worth of the technology. At the end, Director of Research



accepted the proposal looking to its practical utility and application. Hence, the proposal was accepted for inclusion in the POP.

There were no concluded experiments from Seed Science and Technology, Agril. Biotechnology and Plant Pathology.

The Director of Research informed the house that HODs who have not sent the proceedings of Plant scientist's meeting will not be allowed for presentation and hence, the concluded experiments from Horticulture, Animal Science and Agril. Extension were not presented.

The session was concluded with remarks of the chairman Dr S.B. Kalaghatagi, Dean, AC, Vijayapur, who expressed happiness for thorough discussion and good suggestions during deliberations. The Director of Research thanked the Chairman for nice conduct of marathon session.

**New farm trial for the year: 2021-22, Zone – 3 and 8, Season: Rabi 2021-22**

Sl. No.	Crop/ Subject	Objectives	Details of treatments	Methodology and observations	Districts/ Location	No. of trials	Cont. / New	Expected date of completion	Contact Scientist/ Collaborators with Phone No.
1	Safflower/ Agronomy	Weed management in Safflower	<b>T<sub>1</sub></b> : : Sulfentrazone 48 @ 105 g a.i./ha + Intercultivation @ 30 DAS  <b>T<sub>2</sub></b> : Farmer's practice	1) Number of weeds/sq mt  2) Yield kg/ha	KVK, Dharwad KVK, Bagalkot KVK, Vijayapur AEEC, Vijayapur AEEC, Dharwad AEEC, Gadag JDA, Vijayapur JDA, Gadag Contact Scientist (LSD)	02 02 02 02 02 02 02 02	New	2022	<b>Dr. G. Somanagouda</b> Associate Professor (Agronomy) AICRP on Soybean, MARS, UAS, Dharwad Mob: 9900213620
2	Sorghum/ Agril. Entomology	Management of Fall Army worm through seed dressers and sprayable formulations in <i>rabi</i> sorghum	<b>T<sub>1</sub></b> : Seed Treatment with (Thiamethoxam + Cyantraniliprole) @ 5ml/kg seed + Chlorantraniliprole @ 0.3ml/lit at 30 Days after emergence <b>T<sub>2</sub></b> : Seed Treatment with (Thiamethoxam + Cyantraniliprole ) @ 5ml/kg seed + Spinetoram @ 0.5ml/lit at 30 Days after emergence <b>T<sub>3</sub></b> : Untreated control	1) Per cent Foliage damage due to FAW  2) Yield (q/ha)	<b><u>Zone-3</u></b> KVK, Vijayapur AEEU Vijayapur KVK Indi KVK, Bagalkote AEEC Gadag KVK, Gadag JDA Vijayapur Contact Scientist (LSD)  <b><u>Zone-8</u></b> KVK, Dharwad AEEU Dharwad KVK Mattikoppa KVK, Tukkanatti AEEC Arabhavi KVK, Hanmumatti JDA Dharwad Contact Scientist (LSD)	: 02 : 02 : 02 : 02 : 02 : 02 : 01 : 01  : 02 : 02 : 02 : 02 : 02 : 01 : 01	New	2022	<b><u>Contact Scientist for Zone-3</u></b> <b>Dr. S. S. Karabhantanal</b> Senior Scientist (Agril. Entomology) AICSIP, RARS, Vijayapur Mob: 94819 82960  <b><u>Contact Scientist for Zone-8</u></b> <b>Dr. Shaila H M</b> Scientist (Agril. Entomology) AICSIP, UAS, Dharwad Mob: 94485 89096

3	Wheat (Agril. Entomology)	Managem ent of shoot fly in wheat	<b>T1:</b> Seed treatment with Thiamethoxam 30 FS @ 5ml /kg followed by spraying of Cypermethrin 10 EC @ 0.5ml/l at 15 Days After Emergence  <b>T2:</b> Untreated check	<ul style="list-style-type: none"> <li>• Per cent dead heart before spraying and at 5, 10 and 15 days after spraying</li> <li>• Grai yield (q/ha)</li> <li>• Gentye: UAS 304</li> </ul>	JDA , Dharwad JDA, Belagavi JDA, Gadag JDA, Bagalkote AEEC, Gadag AEEC, Belagavi AEEC, Mudhol KVK, Dharwad LSD- MARS,Dharwad LSD-ARS, Mudhol LSD RARS-VJP	01 01 01 01 01 01 01 01 01	New	Rabi 2021- 22	<b>Leader:</b> Dr. D.N.Kambrekar Associate Professor (Agril. Entomology), College of Agriculture, UAS, Dharwad. Mob: 9845516968  <b>Collaborators:</b> Dr.Poornima Matti Dr.A.H.Biradar, Mr.Suresh Jambagi Dr.C.P.Mallapur Dr. Rudra Naik
4	Maize (Agril. Entomolog y)	Manageme nt of fall army worm through seed treatment in maize	<b>T1</b> Cyantraniliprole 19.80% + Thiamethaxam 19.8% w/w FS @ 6 ml/kg of seed  <b>T2:</b> Foliar sprays of	<b>1.</b> Per cent leaf damage at weekly interval till 6 weeks after germination	LSD- KVK, Dharwad LSD-KVK, Hanumanmatti LSD-KVK, Uttara Kannada	01 01 01 01 01	<b>New</b>	Rabi 2021- 22	<b>Leaders:</b> Dr. Shaila H.M. Dr.C.P.Mallapur Dr. Guruprasad
5	Maize (Agril. Entomolog y)	Manageme nt of fall army worm in maize through foliar sprays.	Emamectin benzoate 5% + Lufenuron 40%WG @ 0.15 ml/l (2 sprays at 15 days interval starting from 15 DAE)  <b>T3:</b> Foliar spray of Chlorantraniliprole 9.3%+L ambdacyhalothrin 4.6%	<b>2.</b> Grain yield (q/ha)	LSD-KVK, Tukanatti LSD-AEEC, Dharwad LSD-AEEC, Gadag LSD RARS-VJP LSD – MARS, Dharwad	01 02			<b>Leaders:</b> Dr. Shaila H.M. Dr.C.P.Mallapur

6	Maize (Agril. Entomology)	Management of fall army worm in maize through novel molecules	ZC @ 0.5 ml/lit (2 sprays at 15 days interval starting from 15 DAE)  <b>T4: Untreated Control</b>						<b>Leaders:</b> Dr. Shaila H.M. Dr.C.P.Mallapur
7	Chickpea/ Crop Physiology	PGR's and nutrient management for yield improvement in chickpea	T1 : Chickpea magic 0.8 % at 40 and 60 DAS T2 : Control	1. No of pods/plant  2. Yield (kg/ha)	JDA Dharwad KVK Dharwad AEEC Dharwad KVK Hanumanamatti KVK Vijayapura JDA Vijayapura AEEC Belagavi AEEC Gadag LSD by scientist	1 2 2 1 2 1 1 1 1	New	2021-22	Dr. K. N. Pawar Principal Scientist (Crop Physiology) & Head, AICRP on Cotton, Agricultural Research Station, Dharwad Farm, Dharwad -580007 Ph : 9449891616

## TECHNICAL SESSION – II

**Chairman** : Dr. Ramesh Babu, Director of Extension, UAS, Dharwad  
**Co-chairman** : Miss Geetha L, JDA, Dharwad  
**Rapporteur** : Dr. D.A. Nithyashree  
Dr. B.H. Prasanna kumar

### Presentation of Results of Farm Trials of *rabi* 2020-21

At the out set, the chairman of the session welcomed all the agronomists and asked the scientists to present the results of the Farm Trials of *rabi* 2020-21.

**Dr. P.S. Hugar**, Associate Director of Extension, UAS, Dharwad informed the house that, there are 4 farm trials allotted to zone 8, 9 and 10, out of that 4 have been implemented and Further he presented the results of farm trial.

1. High yielding and early maturing linseed variety DLV-6
2. Evaluation of Mesotrione 40 % EC against weed complex in sugarcane
3. Folior nutrition of different sources and concentration of material on yield of chickpea
4. chickpea
5. Nutrient management in Rabi/summer groundnut (Dh-256 variety) in coastal zone under sandy soils (irrigated)

**JDA, Dharwad** presented the results of 1 farm trial allotted to Dharwad District ie. High yielding and early maturing linseed variety.

**Dr. Ravindra Belli**, Associate Director of Extension, AC, Vijayapura, UAS, Dharwad, presented the results of 2 farm trial allotted to zone 3.

1. Evaluation of Mesotrione 40 % EC against weed complex in sugarcane.
2. Folior nutrition of different sources and concentration of material on yield of chickpea

**JDA, Bagalkot**, presented the results of 1 farm trial allotted to Bagalkot District, ie Folior nutrition of different sources and concentration of material on yield of chickpea. Special Officer (Seed) suggested to come out with good photographs to show the treatment difference.

**JDA, Belagavi** presented the results of 8 farm trials allotted to Belagavi District.

1. Evaluation of Mesotrione 40 % EC against weed complex in sugarcane
2. Management of sucking pest complex through application of Niterpyram 25 sp in BT cotton
3. Varietal trial and topping technique in Tobacco

**JDA, Haveri**, No farm trial allotted to Bagalkot District.

**JDA, Gadag**, No farm trial allotted to Gadag District.

**JDA, Vijaypur,** presented the results of 1 farm trial results allotted Vijayapuradistrict ie,

1. Folior nutrition of different sources and concentration of material on yield of chickpea
2. Evaluation of Mesotrione 40 % EC against weed complex in sugarcane

JDA, Vijapur raised the 3 issues regarding

1. Replacement of sorghum variety M35-1 with other high yielding variety
2. Requested to take up research work to release new varieties of redgram
3. Area under sunflower is increasing in vijayapura. So improved varieties of sunflower need to be developed

Answering to these issues,

Director of Research Dr.P.L.Patil replied that the area is decreasing not just because of the unavailability of varieties but due to less profitability and no minimum support price. In this regards DR also informed that during the visit of Chairman, Food Commission to the sorghum fields, a request has been placed before him to appraise the Government about this matter and to see that the MSP for sorghum will be announced well in advance, so that it will be a motivation factor for the farmers to take up sorghum cultivation.

Dr.Kubsad mentioned that already FLD's are given for the variety SPV 2217 and Dr.bablad mentioned that this variety is gaining popularity in Zone 3. But Dr. Vijayakumar mentioned that SPV 2217 is not suitable for Vijayapura as it is of long duration.

Director of Research also instructed Dr.Gowramma Sajjannavar to come out with new varieties of sorghum suitable to Vijayapura area and also popularize them.

JDA said that there is a need to have a centre of AICRP on pigeonpea at Vijayapura. In this regard Director of Research informed that already a proposal has been sent to ICAR regarding this and shortly there are possibilities of getting the approval of this.

Dr.Vijayakumar replied that DSFH 3 variety sun flower seed production is taken up this year and the seeds will be available next year. He also mentioned that JDA Vijayapura has sent an indent for 200 qtls. of seeds with respect to chickpea variety BGD111-1. But the seed unit has replied to them that they will be providing 50 qtls this year and 200 qtls. Will be provided next year.

**JDA, Uttarkannada,** presented the results of 1 farm trial results allotted to Uttara Kannada district ie, Nutrient management in Rabi/summer groundnut (Dh-256 variety) in coastal zone under sandy soils (irrigated)

He also requested for new paddy varieties in the place of presently grown Bhadra and Jaya varieties. Chairman Dr. Ramesh Babu in his concluding remarks mentioned that there is a need to take up farm trials in more number of plots than restricting to one and utmost care should be taken in farm trials by the concerned scientists. He also instructed to provide good photographs along with labeling the treatments in the farm trial.

## TECHNICAL SESSION – III

**Chairman:** Dr. P.L. Patil, Director of Research, UAS, Dharwad

**Co Chairman:** Dr. Basavarajappa, R. Dean (Agri), AC, Hanumanamatti

**Rapporteurs:** Dr. Gurudatt M. Hegde and Dr. Suma Mogali

**Crop Experts:** Dr. S. S. Patil, Plant Breeder, UAS, Dharwad

Dr. B.M. Chittapur, Agronomist, UAS, Raichur

### Release Proposal and Modification to POP Rabi 2020-21

At the outset the Director of Research and the Chairman of the session welcomed all the presenters and participants for the session. There were four proposals for varietal release and three varieties were accepted for release after a detailed discussion. The proposal on sugarcane variety SNK 635(CoSnk 08101) suited for Joni bella/liquid jaggery was deferred for want of up to date station trial data and Agronomy data that ought to have been presented at the agronomy Annual technical meet.

The following varieties were accepted for release /adoption

#### I. Linseed Variety DLV-6 for Zone 8 of Karnataka

**Pedigree :** Mutant of NL 115

Dr. Suma Mogali presented the proposal for release of linseed variety DLV6 for rabi season to zone VIII of Karnataka and proposal was accepted

**Special features :**

DLV-6 has early maturity with a duration of 105 days compared to early check NL-115 with 111 days and Indira Alsi (113 days). It has recorded ALA content of 55.18% (NL 115- 53.71%) and SDG content of 18.8 mg/g (NL-115 - 12.7 mg/g) both of which have health benefits, produces 15% higher yield (799kg/ha) over the best check. It has more number of capsules(76-85) with a higher seed size and test weight 7.2 g and has a semi erect growth habit with dark brown seeds

**Developer : Dr. Suma Mogali**

**Collaborators:**

Dr. Ganajaxi Math, Dr. Gurupada Balol, Dr. Yamanura, Lalita Jaggal, Dr. O. Sridevi, Dr. Suma Biradar, Dr. Hanumanamatti N.G., Dr. Anita Bhandari, , Dr. Subhas Kandakur, Dr. Shashidhar, , Dr. Dinesh H.B, Dr Kaveri Biradar, Dr Sanjay Patil, Dr S.S. Nooli, Dr B.R.Patil Dr P.S.Mattiwade Dr. Arun Satareddy, ARS Bagalkoti, Dr. Salakinkoppa, Dr Yogesh., UAS , Raichur, Dr G.K.Naidu, Dr B.N. Motagi, Dr Sadana Kalloli, Dr Sannapamma, Dr Iramma Gowdar, Dr G.B. Vishwanath, Dr Maruti Malwade, Dr S.N.Jadhav, Dr B.C.Kamanna ,Dr Ashoka, Dr Shivmurthy , Dr shubha, Dr. Kalavati, JDA dharwad

#### II. Adoption proposal of notified variety Safflower variety Annigeri-2020

Adoption proposal of notified safflower variety Annigeri-2020 was presented by Dr. Naghabushana Nayidu for zone 3 and 8 of Karnataka and the proposal was accepted

**Pedigree : ANN-2-04 X APS-09-8.**

**Special features :**

It is a semi-spreading, spiny type of plant with a plant height of 83 cm having yellow coloured flower at blooming stage and will turn to orange during fading stage. On

an average it has 28 capitula per plant with ~26 seeds per capitula and its 100 seed weight is 5.73 gm and its seed colour is white. A-2020 matures at 123-130 days.

Annigeri-2020, (1795 kg/ha) recorded 9.6 % & 7.4 % higher seed yield over the National check A1 (1638 kg/ha) and PBNS-12 (1672 kg/ha) respectively. This variety is having higher Oil content- 28.6 % as compared to A1 (27.7%) and Annigeri-2020, (516 kg/ha) recorded 13.5 % & 6 % higher oil yield over the national check A1 (454 kg/ha) and PBNS-12 (486 kg/ha) respectively.

#### **Developers**

Dr. Naghabushana K. Nayidu, Dr. Gopalakrishna K. Naidu, Dr. Manjula Marlappannavar and Dr. Rajesh S. Patil

**Collaborators:** Dr. Sujatha, Dr. Ushakiran, Dr. Prabhavathi Rao, Dr. SangshettyBalkunde, Dr. Rajendra Nandagavi, Dr. Ashok P. C., Dr. Kumar Lamani, Dr. U. K. Shanwad, Dr. Somangouda G., Dr. Basavarajappa M. P., Dr. B. K. Athoni, Dr. Subash Kandakur, Dr. B. N. Motagi and Dr. Rafee C. M.

### **III. Adoption proposal of notified groundnut variety Dh 257**

Adoption proposal of notified groundnut variety Dh 257 for zones 3, 8, 9 and 10 for Rabi-summer cultivation was presented by Dr B.N .Motagi and was accepted for adoption

#### **Pedigree:**

#### **Salient features of Dh 257**

Dh 257 variety derived from ICGV 07211 x ICG 2381 through pedigree breeding at AICRPG, UAS, Dharwad and notified for Zone IIIA (Maharashtra and Karnataka) for rabi-summer season with SO 500(E) dated 29.01.2021. Dh 257 (3351 kg/ha) gave 37.2 % pod yield advantage over zonal (TAG 24), regional (R-2001-2) and local (Dh 101 and Dh 86) check varieties (2516 kg/ha) across different trials in Zones 3, 8, 9 and 10 and had on par (0.7%) pod yield over Dh 256 (3327 kg/ha) across various trials has been proposed for its adoption in these zones of Karnataka.

#### **Developers**

**Dr. H.L.Nadaf**, Former Principal Scientist (PB), AICRP on Groundnut, MARS, UAS, Dharwad

**Dr. G.K.Naidu**, Scientist (GPB), AICRP on Maize, UAS, Dharwad

**Dr. B.N.Motagi**, Groundnut Breeder, AICRP on Groundnut, MARS, UAS, Dharwad UAS, Dharwad

#### **Collaborating scientists:**

Dr. Nagaraju,P., Dr. B.S.Yenagi, Dr. P.S.Tippanavar, Dr. Rohini Sugandhi, Dr. Iramma V.Goudar and Dr. Roopa U, Dr. Ramesh Bhat, Dr. J S Hilli, Dr. Anisa M Nimbalkar, Dr. Vijayakur A G and Dr. Dinesh H B, Dr. P.S. Mattiwade and Dr. Virupakshprabhu H., Dr.T.A.Malbasari and Dr. A.H.Biradar, Dr. Arun Sataraddi and Dr. Kammar M, Dr. N.G. Hanamaratti and Dr. Chitti Bharatkumar, Dr. Naik G V and Dr. Satish G, Dr. Yeshashwini Sharma, Dr. P Surendra, Dr. Sridevi Jakkiral.

Director of Research instructed all the presenters involved in developing Technologies/release of new varieties/Hybrids have to submit both hard and soft copies of the proposals including the posters (JPG format) before the finalisation of the proceedings. He also proposed that common nomenclature for different varieties of crops to be released in future has to be sought approval from the ensuing Research Council.



**ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳಲ್ಲಿ ಸೇರ್ಪಡೆಯಾಗುವ ತಂತ್ರಜ್ಞಾನಗಳು 2020-21**  
**Inclusion in POP/Modification to POP 2020-21**

Sl. No.	Technology
1	ಉಳ್ಳಾಗಡ್ಡಿಯಲ್ಲಿ ಗಡ್ಡೆ, ಬೀಜದ ಇಳುವರಿ ಹಾಗೂ ಗುಣಮಟ್ಟದ ಮೇಲೆ ಬೋರಾನ್‌ನ ಪರಿಣಾಮ Effect of Soil and Foliar application of Boron on bulb , Seed yield and quality
2	ಕರಾವಳಿ ಪ್ರದೇಶದ ಹಿಂಗಾರು/ಬೇಸಿಗೆ ಶೇಂಗಾ ಬೆಳೆಯಲ್ಲಿ ಪೋಷಕಾಂಶ ನಿರ್ವಹಣೆ Nutrient Management in Rabi/Summer Groundnut of Coastal zone
3	ಕಬ್ಬಿನಲ್ಲಿ ಕಳೆ ನಿಯಂತ್ರಣ Evaluation of Mesotrione 40 % SC against Weed Complex in Sugarcane.
4	ಬೀಡಿ ತಂಬಾಕನ್ನು 18 ಎಲೆಗಳಿಗೆ ತುದಿ ಮುರಿಯುವಿಕೆ (ಬೀಡಿ ತಂಬಾಕಿನ ತಳಿ ಎನ್.ಬಿ.ಡಿ.-209ನ್ನು 18 ಎಲೆಗಳಿಗೆ ತುದಿ ಮುರಿಯುವಿಕೆ) Topping of bidi tobacco varieties at 18 leaves (Topping of NBD-209, bidi tobacco variety at 18 leaves)
5	ಕಡಲೆ ಬೆಳೆಯ ಇಳುವರಿಯ ಮೇಲೆ ವಿವಿಧ ಸಿಂಪರಣಾ ಪೋಷಕಾಂಶಗಳ ಪರಿಣಾಮ Foliar spray of different sources and concentration of nutrients on yield of chickpea
6	ಕಪ್ಪು ಜಮೀನಿನಲ್ಲಿ ಸಬ್ ಸ್ವಾಯಲರ್ ಮುಖಾಂತರ ತೇವಾಂಶವನ್ನು ಸಂರಕ್ಷಿಸುವುದು In situ moisture conservation through subsoiler in BC soil.
7	ಕಡಲೆಯಲ್ಲಿ ಸೊರಗು ರೋಗ ಸಂಕೀರ್ಣದ ನಿರ್ವಹಣೆ Management of wilt complex in chickpea

**1. ಉಳ್ಳಾಗಡ್ಡಿಯಲ್ಲಿ ಗಡ್ಡೆ, ಬೀಜದ ಇಳುವರಿ ಹಾಗೂ ಗುಣಮಟ್ಟದ ಮೇಲೆ ಬೋರಾನ್‌ನ ಪರಿಣಾಮ**

ಪುಟ ಸಂಖ್ಯೆ : ಪುಟ-266  
 ಅಧ್ಯಾಯ/ಬೆಳೆ : "ಉಳ್ಳಾಗಡ್ಡಿ"  
 ಈಗಿರುವ ವಿಷಯ: ಏನು ಇರುವುದಿಲ್ಲ  
 ಸೇರ್ಪಡೆಯಾಗಬೇಕಾದ ವಿಷಯ:  
ನಾಟಿ ವಿಧಾನ ಪ್ರಾರಂಭದಲ್ಲಿ ಸೇರಿಸಬೇಕು

ನಾಟಿ ಮಾಡುವ ಮುನ್ನ ಪೂರ್ತಿ ಪ್ರಮಾಣದ ಕೊಟ್ಟಿಗೆ ಗೊಬ್ಬರ ಶೇ 50 ರ ಸಾರಜನಕ, ಪೂರ್ತಿ ಪ್ರಮಾಣದ ರಂಜಕ, ಪೋಟ್ಯಾಷ್, ಬೋರಾಕ್ಸ್ 2.0 ಕೆಜಿ/ಎಕರೆ ಸಾವಯವ ಗೊಬ್ಬರ ಜೊತೆ ಬೆರೆಸಿ ಮಣ್ಣಿಗೆ ಸೇರಿಸಬೇಕು. ಸಸಿಗಳನ್ನು 15 ಸೆ.ಮೀ ಅಂತರದ ಸಾಲುಗಳಲ್ಲಿ 10 ಸೆ.ಮೀ ಗೆ ಒಂದರಂತೆ ನಾಟಿ ಮಾಡಬೇಕು. ಆರು ವಾರಗಳ ನಂತರ ಉಳಿದ ಶೇ 50ರ ಸಾರಜನಕವನ್ನು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ಕೊಡಬೇಕು ಹಾಗೂ ಶೇ 0.5% ನೀರಿನಲ್ಲಿ ಕರಗುವ ಬೋರಾನ್ (ಸೂಲುಬಾರ) ದಿಂದ ಎಲೆಗಳ ಮೇಲೆ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು. ಬೀಜೋತ್ಪಾದನೆಯಲ್ಲಿಯೂ ಸಹ ಬೋರಾನ್‌ನ್ನು ಉಪಯೋಗಿಸಬಹುದು.

**ಪ್ರಧಾನ ಸಂಶೋಧಕರು:** ಡಾ. ಅಶೋಕ ಎಸ್. ಸಜ್ಜನ

ಸಹ ಸಂಶೋಧಕರು: ಡಾ. ಎ.ಕೆ. ಗುಗ್ಗರಿ, ಡಾ. ಎಸ್.ಟಿ. ಹುಂಡೆಕಾರ, ಡಾ. ಎಸ್.ಎಮ್. ಹಿರೇಮಠ, ಡಾ. ಜಿ.ಎಸ್. ಹಿಳ್ಳಿ, ಡಾ. ಬಿ.ಬಿ. ಪಾಟೀಲ, ಡಾ. ಎಮ್. ಐ. ಜಮಾದಾರ.

**2 ಕರಾವಳಿ ಪ್ರದೇಶದ ಹಿಂಗಾರು/ಬೇಸಿಗೆ ಶೇಂಗಾ ಬೆಳೆಯಲ್ಲಿ ಪೋಷಕಾಂಶ ನಿರ್ವಹಣೆ**

**ಅಧ್ಯಾಯ:** ಶೇಂಗಾ ನೀರಾವರಿ

ಪುಟ: 142

ವಲಯ: 10

ಸೂಚನೆ ಗಿಂತ ಮೊದಲು ಸೇರಿಸಬೇಕು

ಕರಾವಳಿ ಪ್ರದೇಶದಲ್ಲಿ ಹಿಂಗಾರು/ಬೇಸಿಗೆಯಲ್ಲಿ ಬೆಳೆಯುವ ಶೇಂಗಾ ಬೆಳೆಗೆ ಬಿತ್ತನೆ ಪೂರ್ವ ಪ್ರತಿ ಎಕರೆಗೆ 3 ಟನ್ ಕೊಟ್ಟಿಗೆ ಗೊಬ್ಬರ ಹಾಗೂ 9 ಕಿ. ಗ್ರಾಂ. ಸಾರಜನಕ, 36 ಕಿ. ಗ್ರಾಂ. ರಂಜಕ ಹಾಗೂ 12 ಕಿ. ಗ್ರಾಂ. ಪೊಟ್ಯಾಷ್ ಪೋಷಕಾಂಶಗಳನ್ನು ಕೊಡಬೇಕು.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಬಸವರಾಜ ಎಸ್. ಎಣಿಗಿ, ಹಾಗೂ ಡಾ.ಶಿವಶಂಕರಮೂರ್ತಿ ಎಂ.

ಸಹ ಸಂಶೋಧಕರು: ಡಾ.ಸಿ.ಪಿ.ಮನ್ಸೂರ್, ಡಾ.ಪಿ.ಎಸ್.ಹೂಗಾರ, ಡಾ. ಜಿ.ವಿ.ನಾಯಕ, ಡಾ. ಸತೀಶ್ ಆರ್.ಜಿ., ಡಾ. ಪಿ. ನಾಗರಾಜು, ಡಾ.ರೂಪಾ ಎಸ್. ಪಾಟೀಲ, ಡಾ. ಮಂಜು ಎಂ. ಜಿ., ಡಾ. ಬಿ.ಎನ್. ಮೊಟಗಿ, ಡಾ. ರೋಹಿಣಿ ಸುಗಂಧಿ, ಡಾ. ಇರಾಮ ವಿ. ಗೌಡರ್, ಡಾ. ಯಶಸ್ವಿನಿ ಶರ್ಮ, ಡಾ ಹೊನ್ನಪ್ಪ ಗೌಡ, ಶ್ರೀ ಶಿವಪ್ರಸಾದ ಗಾಂವಕರ್

### 3 ಕಬ್ಬಿನಲ್ಲಿ ಕಳೆ ನಿಯಂತ್ರಣ

ಪುಟ: 234

ಎರಡನೇಯ ಪ್ಯಾರಾದ ಮೂರನೇ ಸಾಲಿನಲ್ಲಿ ಸೇರಿಸಬೇಕಾಗಿದ್ದು

ಅಥವಾ ಪ್ರತಿ ಎಕರೆಗೆ 140 ಮಿ.ಲೀ ಮಿಸೋಟ್ರಿಯಾನ್ 40% ಎಸ್.ಸಿ. 200 ಲೀಟರ ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ ಕಬ್ಬು ನಾಟಿ ಮಾಡಿದ ನಂತರ ಕಳೆಗಳು 2 ರಿಂದ 4 ಎಲೆಗಳ ಹಂತದಲ್ಲಿ ಸಿಂಪರಣೆ ಮಾಡುವದರಿಂದ ಅಗಲ ಎಲೆಯ ಕಳೆಗಳನ್ನು ನಿಯಂತ್ರಿಸಬಹುದು.

ಟ್ರೇಡ ಹೆಸರು: ಕ್ಯಾಲಿಸ್ಟೋ, ಕ್ಯಾಲ್ಯಾರಿಸ್ ಎಕ್ಸ್‌ಟ್ರಾ

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಎಸ್.ಎಸ್.ನೂಲಿ

ಸಹ ಸಂಶೋಧಕರು: ಡಾ..ಬಿ.ಟಿ.ನಾಡಗೌಡ, ಸಿ.ಪಿ.ಮನ್ಸೂರ್ ಮತ್ತು ಎಸ್.ಆರ್.ಸಲಕೆನಕೂಪ್ಪ

ಕ್ಷೇತ್ರ ಪ್ರಯೋಗ ಕೈಗೂಂಡ ವಿಜ್ಞಾನಿಗಳು: ಎಸ್.ಎ.ಬಿರಾದಾರ, ಆರ್.ಬಿ.ನೆಗಳೂರ,ಸಿದ್ದಪ್ಪ ಅಂಗಡಿ,ಮಾರುತಿ ಮಾಳವಾಡಿ, ವಿಶ್ವನಾಥ, ಎ.ಎಚ್.ಬಿರಾದಾರ,ಅಶೋಕ.ಪಿ, ಶಿವಶಂಕರಮೂರ್ತಿ, ಲೋಕೇಶ, ಸರಸ್ವತಿ ಸಂಪಗಾವಿ.

### 4. ಬೀಡಿ ತಂಬಾಕನ್ನು 18 ಎಲೆಗಳಿಗೆ ತುದಿ ಮುರಿಯುವಿಕೆ

ಅಧ್ಯಾಯ: ಬೀಡಿ ತಂಬಾಕು

3-4 ಬಾರಿ ಕಳೆ ತೆಗೆದು, ಅಂತರ ಬೇಸಾಯ ಮಾಡಬೇಕು. ಸುಳಿ ತೆಗೆಯುತ್ತಿರುವವರೆಗೂ ಮಣ್ಣಾಗಿರುವ ತಳಭಾಗದ ಎಲೆಗಳನ್ನು ತೆಗೆದು ಹಾಕಿ, ಬುಡದಿಂದ 10-14 ಸೆ.ಮೀ. ವರೆಗೆ ಇರುವ ಎಲೆಗಳನ್ನು ಮಾತ್ರ ತೆಗೆಯಬೇಕು. ಎನ್.ಬಿ.ಡಿ.-209 ತಳಿಯನ್ನು 18 ಎಲೆಗಳು ಬಂದಾಗ ಸುಳಿಯನ್ನು ಮುರಿಯಬೇಕು.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಪಿ.ಎಸ್.ಮತಿವಾಡೆ,

ಸಹ ಸಂಶೋಧಕರು: ಗೀತಾ ದಂಡಿನ, ಗೌರಮ್ಮಾ ಸಜ್ಜನರ, .ಪುರುಷೋತ್ತಮ ಪೀರಾಜೆ, ದೊಡ್ಡಮನಿ,

### 5 ಕಡಲೆ ಬೆಳೆಯ ಇಳುವರಿಯ ಮೇಲೆ ವಿವಿಧ ಸಿಂಪರಣಾ ಪೋಷಕಾಂಶಗಳ ಪರಿಣಾಮ

• ಅಧ್ಯಾಯ: ಕಡಲೆ-ಖುಷ್ಕಿ

• ಪುಟ ಸಂಖ್ಯೆ: 122

• ಸೂಚನೆ ಪ್ರಾರದಲ್ಲಿ ಒಂದನೇಯ ಸೂಚನೆಯಾಗಿ ಸೇರಿಸಬೇಕಾಗಿದ್ದು

**ಸೂಚನೆ**

ಶೇ. 0.5ರ ನೀರಿನಲ್ಲಿ ಕರಗುವ 19:19:19 ರಸಗೊಬ್ಬರ, ಶೇ. 0.5ರ ಸತುವಿನ ಸಲ್ಫೇಟ್ ಹಾಗೂ ಶೇ. 0.5ರ ಕಬ್ಬಿಣದ ಸಲ್ಫೇಟ್ (ತಲಾ 5 ಗ್ರಾಂ. ಪ್ರತಿ ಲೀಟರ್ ನೀರಿಗೆ) ಮಿಶ್ರಣವನ್ನು ಹೂವಾಡುವ ಮತ್ತು ಕಾಯಿಕಟ್ಟುವ ಹಂತಗಳಲ್ಲಿ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು. ಈ ಮಿಶ್ರಣಕ್ಕೆ ಆಪ್ಲು ತಟಸ್ಥೀಕರಣಕ್ಕಾಗಿ ಶೇ. 1.0 ರ ಸುಣ್ಣದ ತಿಳಿನೀರನ್ನು ಸೇರಿಸಬೇಕು.

**ಪ್ರಧಾನ ಸಂಶೋಧಕರು:** ಸೋಮನಗೌಡ ಬಿ. ಪಾಟೀಲ

**ಸಹ ಸಂಶೋಧಕರು:** ಆರ್.ಎ. ನಂದಗಾವಿ, ಬಿ.ಎಚ್. ಕುಮಾರ, ಹೆಚ್.ಎಸ್. ಪಾಟೀಲ, ಎಮ್.ಎಸ್. ಶಿರಹಟ್ಟಿ, ಸಿ.ಪಿ. ಮನ್ಸೂರ, ಆರ್.ಬಿ. ನೆಗಲೂರ, ಎಸ್.ಎಸ್. ಅಂಜುಮ್, ಎಸ್. ಸುಭಾ, ಬಿ. ಮಲ್ಲಪ್ಪ, ಎಸ್.ಪಿ. ದಿನೇಶಕುಮಾರ, ಎಮ್.ಆರ್. ಕಮ್ಮಾರ, ಸಿ.ಎಮ್. ರಫಿ, ಬಿ.ಎಚ್. ಪ್ರಸನ್ನಕುಮಾರ, ಎಸ್.ಎ. ಬಿರಾದಾರ, ಬಿ.ಸಿ. ಕಾಮಣ್ಣ, ಎಸ್.ಎನ್. ಜಾಧವ, ಜಿ.ಆರ್. ರಾಜಕುಮಾರ, ಪಿ. ಅಶೋಕ, ಬಿ.ಕೆ. ಲೋಕೇಶ, ಎಸ್.ಎಸ್. ಸಂಪಗಾವಿ ಹಾಗೂ ಕೃಷಿ ಇಲಾಖೆ, ವಿಜಯಪುರ ಮತ್ತು ಬಾಗಲಕೋಟೆ.

**6 ಕಪ್ಪು ಜಮೀನಿನಲ್ಲಿ ಸಬ್ ಸ್ಟಾಯಲರ್ ಮುಖಾಂತರ ತೇವಾಂಶವನ್ನು ಸಂರಕ್ಷಿಸುವುದು**

**ಮಣು ಮತ್ತು ನೀರು ಸಂರಕ್ಷಣೆ**

**ಪುಟ ಸಂಖ್ಯೆ: 312**

**ಕೋಡ್ 2 : ಬದುಗಳ ಮಧ್ಯದ ಜಮೀನಿನ ನಿರ್ವಹಣೆ**

2 ಮೀ. ಅಂತರದ ಸಾಲುಗಳಲ್ಲಿ ಸಬ್ ಸಾಯಿಲರನಂದ ಉಳುಮೆ ಮಾಡುವುದು ಮುಂಗಾರು ವರ್ಷದಲ್ಲಿ ಸಬ್ ಸಾಯಿಲರನಂದ (60-70 ಸೆಂ.ಮೀ. ಆಳ) 2 ಮೀ ಅಂತರದ ಸಾಲುಗಳಲ್ಲಿ ಉಳುಮೆ ಮುಖಾಂತರ ಜಮೀನಿನ ಕೆಳ ಘಟ್ಟಪದರನ್ನು ಸೇಳುವುದರಿಂದ ಮಳೆಯ ನೀರು ಸರಾಗವಾಗಿ ಜಮೀನಿನಲ್ಲಿ ಇಂಗಿ ಜಮೀನಿನ ಕೆಳ ಪದರಗಳಲ್ಲಿ ಹೆಚ್ಚಿನ ತೇವಾಂಶ ಸಂಗ್ರಹವಾಗಿ ಅಧಿಕ ಇಳುವರಿಗೆ ಕಾರಣವಾಗುತ್ತದೆ.

**ಪ್ರಧಾನ ಸಂಶೋಧಕರು :** ಎಮ್. ಎನ್. ಶಿರಹಟ್ಟಿ

**ಸಹ ಸಂಶೋಧಕರು :** ಯು. ಎಮ್. ಮೋಮೀನ, ಸವಿತಾ ಕಂಠಿ, ಎನ್. ಬಿ. ಪಾಟೀಲ, ಕುಮಾರ ಬಿ. ಎಚ್ ಮತ್ತು ಆರ್. ಎ. ನಂದಗಾವಿ

**7. ಕಡಲೆ**

**ಕಡಲೆಯಲ್ಲಿ ಸೊರಗು ರೋಗ ಸಂಕೀರ್ಣದ ನಿರ್ವಹಣೆ**

**ಅ. ರೋಗಗಳು (ಪುಟ ಸಂಖ್ಯೆ 119)**

**ನಿರ್ವಹಣಾ ಕ್ರಮಗಳು**

ಪ್ರತಿ ಕಿ. ಗ್ರಾಂ. ಬೀಜಕ್ಕೆ 2 ಗ್ರಾಂ. ಕ್ಯಾಪ್ಸಾನ್ 80 ಡಬ್ಲ್ಯೂ.ಪಿ. ಅಥವಾ ಥೈರಾಮ್ 75 ಡಬ್ಲ್ಯೂ.ಪಿ. ಅಥವಾ ಮೆಂಕೋಜಿಬ್ 75 ಡಬ್ಲ್ಯೂ.ಪಿ. ಅಥವಾ 3.5 ಗ್ರಾಂ. ಸಂಯುಕ್ತ ಶಿಲೀಂಧ್ರನಾಶಕ (ಕಾರ್ಬನಡೈಜಿಮ್ 25% + ಮ್ಯಾಂಕೋಜಿಬ್ 50%) ಅಥವಾ 10 ಗ್ರಾಂ. ಟ್ರೈಕೋಡರ್ಮಾ ಜೈವಿಕ ಶಿಲೀಂಧ್ರ ಅಥವಾ 4 ಮಿ.ಲೀ.

ಸಂಯುಕ್ತ ಶಿಲೀಂಧ್ರನಾಶಕ (ಥಯೋಫಿನೇಟ ಮಿಥೈಲ್ 45 % + ಪೈರಾಕ್ಲೋಸ್ಟ್ರಾಬಿನ್ 5 % ಎಫ್.ಎಸ್.)  
ದಿಂದ ಬೀಜೋಪಚಾರ ಮಾಡಬೇಕು. ರೋಗ ಬಾಧಿತ ಗಿಡಗಳನ್ನು ಆಗಾಗ ಕಿತ್ತು ಸುಡಬೇಕು.  
(ಸಂಯುಕ್ತ ಶಿಲೀಂಧ್ರನಾಶಕ (ಥಯೋಫಿನೇಟ ಮಿಥೈಲ್ 45 % + ಪೈರಾಕ್ಲೋಸ್ಟ್ರಾಬಿನ್ 5 % ಎಫ್.ಎಸ್.-  
ಝೆಲೋರಾ

**Thiophonate methyl 45% +Pyraclostrobin 5% FS (Combi product)- Xelora  
(Trade name)**

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಬಸಮ್ಮ ಕುಂಬಾರ, ಲೋಕೇಶ, ಬಿ.ಕೆ. ಮತ್ತು ಗುರುಪಾದ ಬಲೋಳ  
ಸಹ ಸಂಶೋಧಕರು: ಡಾ. ಸುಧಾ ಎಸ್., ಡಾ. ಸಯಿದಾ ಅಂಜುಮ್, ಡಾ. ಕಲಾವತಿ ಕಂಬಳಿ, ಡಾ.  
ಶಿವಲಿಂಗಪ್ಪಾ ಹೊಟಕರ್, ಡಾ. ರಫಿ, ಎಫ್.ಎಮ್., ಡಾ. ಎಮ್.ಡಿ. ಪಾಟೀಲ, ಡಾ. ವಿಜಯಕುಮಾರ  
ಎ.ಜಿ., ಡಾ. ಶಿವಲೀಲಾ ಕುಕನೂರ, ಡಾ. ರವಿ ನೆಗಳೂರ

### **General recommendations and suggestions**

Hon'ble Vice Chancellor suggested the following information for improvement

Photographs should be the representative of the technologies and one should be careful in taking the comparative photographs.

Emphasized the self sufficiency y in oil seed production and encouraged for more research for higher production

Promotion of technologies through FPOs and each KVK must form one FPO with mandatory activities (one district one product) which will be coordinated by Director of extension and Director of Research

Research must be focused on sugarcane, sugar beet and sweet sorghum suitable for ethanol production

As the year 2023 being the international year of Millets the focus should be concentrated on processing of the millets and suggested one exclusive FPO on Millets processing in the university.

The Israel model of irrigation, atomization established in ARS belavatgi should be made functional

Cold chain facilities .....

### **Linseed DLV -6**

The terminologies must be same while recording the plant protection observations.

Support must be extended to breeders for resource mobilization for multiplication of huge quantum of seeds.

Minimum requirement of seeds for seed production needs tom finalized

Breeder assured to produce 500 kgs of linseed before the meeting of state variety release committee

### **Ground nut Dh-257**

**The breeder has a stock of 200kgs of nucleus seeds**

As this variety is notified at national level and farmers are already using, and there is no source for resistance to stem rot the rider must be given to manage insect pests (spodoptera and sucking pests) and also for stem rot disease during the release proposal and to include in the package.

Breeder was asked to hand over 50kgs of seeds to seed unit for multiplication and spread of the variety.

The Ground nut pathologist was instructed to focus more research on management of stem rot of ground nut and also to record the plant protection observations by both pathologist and entomologist during kharif season.

The Ground nut breeder presented the kharif data of Dh 257 for its yield potential. Based on its performance the house opined for the Seed production during Kharif season.

### **Safflower A-2020**

#### **The breeder has a stock of 80kgs of nucleus seeds**

This variety was found MR to Aphids and wilt and accepted for release.

The chairman requested the scheme heads to submit the proposal to designate the plant protection scientist for recording the observations.

Director of Research requested the concerned breeders to hand over the seeds required for one acre production when the variety accepted for farm trial to the seed unit for LSD.

The session was concluded by the Chairman by congratulating all the developers of new varieties and new technologies. He thanked the experts, co chairman and all the participants for their inputs and making the session successful.

## TECHNICAL SESSION – IV

**Chairman:** Dr. I. S. Katageri, ADR, UAS, Dharwad

**Co Chairman:** Dr. H.B.bablad, Chief Librarian, UAS, Dharwad

**Rapporteurs:** Dr. S. R. Salakinkop and Dr.Laxmi C. Patil

The Chairman and Co-chairman of the session welcomed the members of this important session on formulation of new technical programme for the year *rabi* 2021 and briefed the importance of new technical programme in addressing field problems. The University HOD's of eight departments presented deliberations of the technical programs

Sl. No.	Department	Continued experiments	New experiments	Total
1	Agronomy	34	13	47
2	Biotechnology	--	2	02
3	Genetics and Plant Breeding	299	03	302
4	Entomology	88	14	102
5	Textile and Apparel Designing	--	4	04
6	Pathology	36	9	45
7	Soil Science	8	4	12
8	Seed Science and technology	--	1	01
	<b>Total</b>	<b>465</b>	<b>50</b>	<b>515</b>

The details of following new technical programs were discussed and approved

Sl. No.	Title of the experiment/project	Principal Investigator	Funding agency	Remarks / suggestions
<b>Biotechnology</b>				
1.	Identification of superior recombinant inbred lines and near isogenic lines of sorghum with terminal stress tolerance and productivity	PI: Dr.Basavaraj Bagewadi	RKVY project	Accepted with suggestion to look for uniform and non-lodging type. ADR (HQ) suggested to include these lines in MLT's
2.	Root phenotyping and elucidation of associated molecular changes in hypergravity-induced wheat	PI: Dr.Ravikumar Hosamani	UASD-SCP- Short-term innovative project	Accepted with deliberations on hypergravity-induced wheat phenotypes
<b>Genetics and Plant Breeding</b>				
1	Identification of high yielding, short duration rice genotypes suitable for Rabi/ Summer Cultivation	PI: ChittiBharatkumar, Co-PI: Surrender.P, N.G. Hanamaratti, Yashaswini Sharma and Satish,R.G	UASD project	Accepted
2	Characterization and	Dr. Uday G. Reddy	UASD	Accepted

	Identification of resistance source in wheat germplasm line for Fusarium head blight ( <i>Fusariumgraminearum</i> ) disease		project	
3	Breeding for climate resilient high yielding chickpea varieties for Northern Karnataka	PI: Dr. M. D. Patil Co-PIs: Dr. AG Vijayakumar, Dr. Nayak VH (UASR), Dr. CD Soregoan, Dr. VH Ashwathama and Dr. RB Jolli	UASD project	Accepted with suggestion to discuss with concern scientist to improve the methodology of the experiment. Advised to take observation on nodulation
<b>Agronomy</b>				
1	Quantifying the response of pre-released rabi grain sorghum genotypes to different fertilizer levels under receding soil moisture environment	Dr. T.T. Bandiwaddar	AICRP trial	Approved with deliberations especially on absolute control of nutrients as it may required for working out fertilizer use efficiency.
2	Studies on Boron nutrition in rabi grain sorghum	Dr. T.T. Bandiwaddar	AICRP trial	Accepted with suggestion to verify the dose and source of Boron.
3	Studies on Rabi grain sorghum productivity as influenced by irrigation and fertilization:	Dr. T.T. Bandiwaddar	AICRP trial	Approved with discussion on necessity of drip irrigation in <i>rabi</i> .
4	Efficacy of herbicides against diverse weed flora of wheat	Dr. Kumar Lamani	AICRP trial	Approved with suggestion to include recommended herbicides for comparison
5	Effect of nano urea on increasing N use efficiency and productivity of wheat under irrigated condition.	Dr. Kumar Lamani	AICRP trial	House accepted the both trials on nano urea with advise to include lower dose of urea for foliar spray. Further asked to test effect of 5 % regular urea foliar spray in micro-plot during September before inclusion in the programme as higher dose may cause scorching
6	Effect of nano urea on increasing N use efficiency and productivity of wheat under restricted irrigation condition.	Dr. Kumar Lamani	AICRP trial	Accepted
7	Effect of foliar K application for improving wheat yield and water	Dr. Kumar Lamani	AICRP trial	Accepted trial with suggestion to ascertain source of K and asked to

	productivity under restricted irrigation condition:			include lower dose of K .
8	Effect of Silica (KSi) foliar application for improving wheat yield and productivity under restricted irrigation condition:	Dr. Kumar Lamani	AICRP trial	Accepted the trial as it was with long deliberation on different sources of agricultural silica.
9	Effect of N P and K solubilizing microbial (Rhizosphere) consortium on productivity of Wheat under irrigated condition:	Dr. Kumar Lamani	AICRP trial	Approved with suggestion to include recommended RPP for comparison.
10	Agronomic Evaluation of promising genotypes of Safflower	Dr.Sangashetty	Station trial	Accepted with following suggestion to include. Annigeri 2020, D-Saff-1, A-1 under plant three geometry(45 x 20 cm,30-60-30 cm (Paired row) and 60X30 cm) and three fertility levels (75 % RDF,100 % RDF and 125% RDF).
11	Doubling farmers income by Tobacco based cropping systems under mulches:	Dr.Mattiwade	AICRP trial	House suggested for refining the title and the methodology before implementation. Doubts on durability plastic mulches were raised and suggested to use eco-friendly and crop residue mulches. At the end house accepted the trail.
12	Integrated management Orobanche in different tobacco types	Dr.Mattiwade	AICRP trial	House clarified the quantity of neem cake to applied and seed rate of sunhemp and black sesame. Head of Department asked to include already recommended practice for comparison. At the end house acceted the trail.
13	Effect of foliar application of different nanofertilizers on nutrient use efficiency, drought stress tolerance, productivity and economics	Dr.S.B.Patil	AICRP trial with IFFCO funding	House accepted in toto all treatments for implementation with discussion on concentration and time of spray nano urea and zinc.



	of rabi sorghum:			
<b>Entomology</b>				
1	To evaluate the Bio efficacy of AMMA Meta ( <i>Metarhiziumanisopliae</i> 1.5% AS) strain number AMMFA-MA1 against sucking pest complex (Thrips, Jassids, Aphids, White fly) of Okra and Phyto-toxicity	PI: Dr. Shekharappa, Professor, IOF	Station trial	Accepted
2	To evaluate the Bio efficacy of AMMA Verti ( <i>Lecanicilliumlecanii</i> 1.5% AS) strain number AMMFA- V1 against sucking pest complex (thrips, jassids, aphids, white fly, mealy bug) of Brinjal and phyto toxicity	PI: Dr. Shekharappa, Professor, IOF	Station trial	Accepted
3	3.To Evaluate the Bio efficacy of AMMA-Bever ( <i>Beauveriabassiana</i> 1.5% AS) strain number AMMFA-BB1 against fall armyworm of Maize and phyto toxicity	PI: Dr. Shekharappa, Professor, IOF	Station trial	Accepted
4	To evaluate the Bio efficacy of <i>Metarhiziumanisopliae</i> 2x10 <sup>8</sup> CFU/g IOF UAS, Dharwad strain against sucking pest complex (Brown plant hopper, white backed plant hopper) of rice and Phyto-toxicity	PI: Dr. Shekharappa, Professor, IOF	Station trial	Accepted
5	Sucking insect pest management in summer groundnut	Dr. RohiniSugandhi, ,	Station trial	Accepted with suggestion to test germination of ground nut
6	Efficacy of Chlorantraniliprole + Clothianidin 500 SC (FA337-500g/l SC) against major insect-pests of Sugarcane	Dr. S.V. Hugar, ARS, Sankeshwar	Testing trial	Accepted
7	Evaluation on EPF (Entomopathogenic fungi) in the management of sorghum sucking pests in	Dr. S.S. Karabhantanal, AICSIP, RARS, Vijayapur	Station trial	Accepted with Suggestion to add one more treatment including the other seed treatments as

	<i>rabiseason</i>			per the recommended package of practice
8	Management of spotted pod borer. <i>Marucavitrata</i> in pigeon pea	Dr. S S Karabhantanal, AICSIP, RARS, Vijayapur	Station trial	Suggested to bring proposal during <i>Kharif</i> meeting and to include the integrated mode. Methomyl can be removed
9	MLT on Protection of cereal crops against <i>Sitophilus oryzae</i>	1. Dr. G.S. Guruprasad 2. Dr. K. P. Gundannavar 3. Dr SubhashKandakoor	Station trial	Accepted with suggestion to change the name as storage management of cereal crops. Suggested to formulate the proposal for grain storage purpose
10	Investigations on the Pesticidal Activity of Botanical formulations against selected insect pests and diseases under laboratory condition	Dr. D. N. Kambrekar Co-Principal Investigators: Dr. P. U. Krishnaraj&Dr.Shama raoJahagirdar	Ad-hoc project	Accepted. Demonstrations at KVK on pest and disease using Drone were discussed.
11	Investigations on the bio-efficacy and phytotoxicity of pesticide spray schedule for an Unmanned Aerial Vehicle (UAV) against insect pests and disease in soybean and paddy	Dr. D. N. Kambrekar Co-Principal Investigators Dr. C. P. Mallapur&Dr.Gurupad B. Balol	Ad-hoc project	Accepted with advise to utilize existing Drone present at University
12	Bio-efficacy of IKI -3106 100 DC (Cyclaniliprole) on chilli against lepidopterous insect pests	Dr. R. Veeranna, Asst. Professor, COA, Hanumanamatti	Testing trial	Accepted
13	Evaluation of prominent insecticides against bollworm complex of cotton	Dr. Poornima Matti, AICRP on Cotton, Hebballi farm, Dharwad	AICRP trial	Accepted
14	Evaluation of bio-efficacy and phytotoxicity of Afidopyropene 50 g/l DC against hoppers pest on Mango	Dr. Subhash B. Kandakoor, ARS,Bailhongal	Testing trial	Accepted
15	Evaluation of sucking pest tolerance reaction in safflower genotypes	Dr. C.M.Rafee AEEC,Gadag	Station trial	Accepted
Director of Research and house suggested to include IPM and IDM as one of the treatment so as to explore the possibility of reducing chemicals in agriculture. Bioagents can be used as prophylactic measures for control of pest and diseases. Experiments on pigeopea can be proposed in <i>kharif</i> technical meet.				
<b>Textile and Apparel Designing</b>				
1	Composites from non-	PI: Dr. Sadhana D.	SCP/STP	Accepted

	spinnable flax fibre	Kulloli, Co-PIs: Dr, Jyoti V, Vastrad Dr. Suma C. Mogali Dr. IrammaV. Goudar Dr. Shivkumar Gouda	project	
2	Optimization of the Thermodynamic properties in dyeing cotton and silk fabrics with onion peel extract	PI: Dr. Sadhana D. Kulloli, Co-PI : Dr. Jyoti V. Vastrad	SCP/STP project	Accepted
3	Functional finishing of textiles using vetiver root extracts	Co PI: Dr. Yashaswhni Sharma Assistant Professor ARS, Kumta	SCP/STP project	Accepted
4	Project Title: Value Chain Management of Banana pseudo stem and Areca nut Husk for Textile application – An empowerment of SC/ST farm families through capacity building Expt 1: Situational analysis of arecanut husk and banana pseudo stem management Expt2:Optimization of fibre extraction methods for banana pseudo stem and arecanut husk Expt3 Spinnability studies of yarn making using banana and arecanut fibre Expt4:Design and development of blended and union fabrics from banana yarn Expt 5:Designing and development of variegated fashion accessories from banana and areca yarn Expt 6: Variegated fashion accessories from banana and areca yarn Expt 7: Physical and functional properties of banana and areca non-woven	PI: Dr. Sannapamma KJ Co-PI: Dr. Mahantesh R Nayak	RKVY project	Accepted

	Expt 8:Popularization of banana and arecanut fibre-based technologies among SC/ST farm families			
<b>Soil Science and Agril Chemistry</b>				
1	To study different fertilizer approaches to wheat	Dr.K K Matha	Station trial	Not accepted as elaborate study was already completed under IPNI project
2	Soil and leaf nutrients status of Guava [Cv. Lucknow-49] orchards in relation to fruit quality in selected talukas of Dharwad and Gadag districts.	S.T.Hundekar	Station trial	House accepted with suggestion to include all Guava orchards of UAS, Dharwad for assessing nutrient status in soil and plant. At the end reasons may be listed for best orchards
3	Boron nutrition in Safflower (Carthamus tinctorius L.)	Vidyavathi G Y	Station trial	Accepted
4	Response of irrigated Sunflower to fertigation in Vertisols	Vijayakumar C.	AICRP trial	House suggested to quantify water and fertilizer requirement before implementation. And ADR(HQ) informed to house that trial proposing Scientist should present at the time of deliberations
<b>Seed Sceience and technology</b>				
1	Mitigation of drought stress in sorghum through seed priming	<b>Dr. N.K.Biradarpatil,</b>	Station trial	Accepted with suggestions to specify endophyte organism and quantity to be used for seed priming.
<b>Pathology</b>				
1	Integrated management of Fusarium head blight (FHB)of wheat	Dr. GURUDATT M. HEGDE	Station trial	Accepted with discussion on feasibility of foliar spray of <i>Trichoderma harzianum</i> when it was applied to soil.
2	Integrated management of foliar diseases of wheat	Dr. P. V. Patil,	Station trial	Accepted with deliberations on scoring disease severity in susceptible variety and tolerant variety.

3	Screening of chickpea germplasm lines (Minicore) and breeding material against rust disease	Dr. Basamma Kumbar	Station trial	House approved for implementation of screening of chickpea minicore - 211 lines from ICRISAT and 30 Advanced breeding lines from AICRP chickpea centre.
4	Integrated management of chickpea wilt complex	Dr. Basamma Kumbar	Station trial	Accepted
5	Integrated management of safflower wilt	Prabhavathi.N.Rao	Station trial	Accepted with advise to test compatibility of all microbes need to be tested before combined application. At the end house accepted to test combination of fungicides, bioagents and botanicals
6	Integrated management of Fusarium wilt of safflower	Prabhavathi.N.Rao	Station trial	
7	Management of sterility mosaic disease (SMD) of Pigeonpea	Dr. Shivalingappa Hotkar, Dr. Sudha, S., Dr. Sayeda Anjum and Dr. Shripad Kulkarni,	Station trial	Accepted with deliberation on management of sterility mosaic in pigeopea and at at the end house felt that resistance breeding is the only option.
8	Survey for the incidence of sterility mosaic disease (SMD) of Pigeonpea	Dr. Shivalingappa Hotkar, Dr. Sudha, S., Dr. Sayeda Anjum and Dr. Shripad Kulkarni,	Station trial	Accepted with suggestion to include pigeonpea in water stagnated area for survey for incidence of sterility mosaic disease
9	Survey for the severity of sheath rot of banana	Dr. Manju M. J, Sr. Scientist (Plant Pathology), KVK, Uttara Kannada, Sirsi	Station trial	House approved the survey for recording severity of sheath rot of banana

## TECHNICAL SESSION – V

**Chairman :** Dr. Mahadev B. Chetti, Hon'ble Vice- Chancellor, UAS, Dharwad

**Co-Chairman :** Dr. B.D. Biradar, Dean (Agri), UAS, Dharwad

**Rapporteurs :** Dr. B.N. Motagi and Dr. Vanishree

Dr. P.L. Patil, Director of Research, UAS, Dharwad invited Dr. B.D. Biradar Dean (Agri) AC Dharwad to chair and co-chair the session. Dr. B.D. Biradar asked chairmans of all technical sessions to present the highlights of their respective sessions in brief.

➤ The Chairman of the first technical session Dr. Kalghatagi, Dean (Agri), AC Vijayapur summarized about the concluded research results proposed for Farm Trial and accepted ones.

Sl.No.	Department	No. of Farm Trials proposed	No. of Farm Trials accepted
1	Agronomy	4	1
2	Genetics and Plant Breeding	2	0
3	Entomology	5	5
4	Soil science	2	0
5	Crop Physiology	1	1
6	Agricultural Engineering	1	1

➤ Dr. Ramesh Babu, Director of Extension, UAS, Dharwad presented the report of Technical Session –II on results of farm trials. There were four farm trials allotted viz., high yielding and early maturing linseed variety DLV-6, Evaluation of Mesotrione 40 % SC against Weed Complex in Sugarcane, Foliar spray of different sources and concentration of nutrients on yield of chickpea and Nutrient management in rabi-summer groundnut in coastal zone under sandy soil, results of which were presented by ADE (Dharwad), ADE (Vijayapur) and respective JDA's during the session.

➤ The chairman Dr. P.L.Patil, Director of Research, UAS, Dharwad briefed the proceedings of technical session –III. There were totally four variety release proposals, of which three were accepted viz., DLV-6 of linseed, A-2021 of safflower, Dh 257 in Groundnut whereas the proposal on SNK 635 for Joni Bella (liquid jaggary) purpose in sugarcane was withheld due to one more season agronomic data. Seven technologies (Agronomy-04, Plant pathology-01, Seed technology-01 and Agri. engineering-01) were accepted for modification to PoP.

➤ The Chairman of the technical session-IV Dr. I.S. Katageri, ADR (HQ), UAS, Dharwad gave brief abstract of the new technical programmes. Totally 51 new technical programmes were presented of which 50 were accepted.

Sl.No.	Department	No. of New technical programme proposed	No. of New technical programme accepted
1	Agronomy	13	13
2	Biotechnology	2	2
3	Genetics and plant breeding	4	4
4	Entomology	15	15
5	Plant pathology	9	9
6	Seed technology	1	1
7	Soil science	4	3
8	Textile	3	3

➤ Dr. I.S. Katageri suggested that University HoD's of at least core agriculture related departments should attend new technical programme session of other departments plant scientist meet so that it helps in formulation of quality new technical programmes. He also pointed that the scientists may give importance to basic research while planning new technical programmes as this helps to gain scientific knowledge, develop students skills and to bring up good publications. He also opined that out of the new technical programmes presented in ZREAC meeting, at least few may be selected on certain criteria for funding from the University in order to encourage young scientists. He also indicated that in order to improve the NAAS rating of JFS- UASD Journal, each of the Professors can submit at least one good quality paper per academic year so that they can be reviewed or referred by other than University people which in turn helps in improving NAAS rating of the journal.

➤ Dr. B.D. Biradar suggested that University HoD's of all departments should attend at least farm trial, release / PoP and new technical program sessions of other department's plant scientist meet to clarify the doubts at plant scientist meet level itself so that extra discussions in ZREAC meeting may be avoided. In this way the quality of technical meet may be enhanced. Dr. P.L.Patil, Director of Research, UAS, Dharwad informed the house that group of disciplines like crop improvement, crop protection, crop production and social science can be made and all concerned University HoD's can attend the respective group farm trials, release/ PoP and new technical program sessions.

➤ Dr. Sarojini Karkannavar suggested instead of presenting the variety release proposals directly in ZREAC meeting the check list *w.r.t* to all aspects required for variety release may be prepared and submitted to Directorate of Research well in advance by the concerned crop breeders before ZREAC meeting.

➤ Dr. B.D. Biradar thanked Chairman's of all the technical sessions for reading the proceedings in brief and thanked Director of Research for giving him an opportunity to express his views in the plenary session. Finally, meeting ended with Vote of Thanks by Dr. Ashok Sajjanavar, ADR , Vijayapur.