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UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD



**RABI
PROCEEDINGS 2021-22**

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

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PROCEEDINGS 2021-22**

**NORTHERN DRY ZONE, NORTHERN TRANSITION ZONE,
HILLY ZONE AND COASTAL ZONE**

(ZONE – 3, 8, 9 and 10)

Date: 2nd & 3rd September, 2022

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 2021-22 was held from 2nd & 3rd September, 2022, at RARS, Agricultural College Vijayapura, UAS, Dharwad. The Scientists from University of Agricultural Sciences, Dharwad and officers from the Department of Agriculture participated in the workshop.

An indepth discussion took place on the research results generated during the previous year and the technical programme to be implemented during Rabi 2022-23. Based on the results of the experiments and farm trials conducted the house accepted a new variety of Safflower DSAF-1 for adoption and 13 technologies for inclusion in the package of practice. This will come in a big way to increase the farmer's income for sustainability.

All the scientists of the University and Extension Officers of the Departments were requested to implement the approved technical programme / Farm trails / MLT's as finalized in the workshop for the year 2022-23.



Director of Research
UAS, Dharwad

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UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD
RABI ZREAC & ZREFC WORKSHOP 2021-22
AGENDA

Date: 2nd & 3rd September 2022

Venue: RARS, Vijayapur

02-09-2022 (Friday)

(9.00 to 9.30 AM)	Registration
(9.30 to 10.30 AM)	Inaugural Session
Chairman	Hon'ble VC, UAS, Dharwad
Rapporteurs	Dr. S. B. Patil and Kumar B. H.
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	: Field Problems:
ADE, Vijayapur	:
Technical Session I	Presentation of Research Results of Concluded Experiments and New Farm Trial Proposals
(11.30 AM to 1.30 PM)	Chairman : Dean(Agri.) AC, Dharwad
	Co-Chairman : Assoc. Director of Research (HQ), UAS, Dharwad
	Rapporteurs : Dr. C. D. Soregoan and Dr (Mrs). KumariBasamma
	Presenters : University HoDs of All the Departments
Technical Session II	Presentation of Results of Farm Trials of <i>Rabi</i> 2021-22
(2.15 to 5.00 PM)	Chairman : Director of Extension, UAS, Dharwad
	Co-Chairman : JDA, Vijayapur
	Rapporteurs : Dr (Mrs).BasammaKumbar and Dr (Mrs). Babar Sadhana R.
Presenters	: ADE, Dharwad and ADE, Vijayapur and JDAs of Dharwad, Haveri, Gadag, Bagalkot, Vijayapura, Belagavi and Uttara Kannada

03-09-2022 (Saturday)

Technical Session III	Release Proposals and Modification to PoP
(9.30 AM to 12.30 PM)	Chairman : Director of Research, UASD
	Co-Chairman : Dean(Student Welfare), UAS, Dharwad
	Rapporteurs : Dr. Prakash H. T. And Dr (Mrs). Prema G. U.
	Presenters : Concerned Scientists
Technical Session IV	Finalization of Rabi Technical Programme
(12.30 to 4.00 PM)	Chairman : Librarian , UAS, Dharwad
	Co-Chairman : Dean(Agri.), AC, Vijayapura
	Rapporteurs : Dr. Kumar B. H. and Ms. SavithaKanti
	Presenters : University HoDs of All Departments
Technical Session V	Plenary Session
(4.00 to 5.00 PM)	Chairman : Director of Education, UAS, Dharwad
	Co-Chairman : Special Officer (Seeds), UAS, Dharwad
	Rapporteurs : Er. Ramesh Beerage and Er. (Mrs.) Shwetha
(5.00 to 5.15 PM)	Vote of thanks : Dr. Ashok Sajjan Associate Director of Research, RARS, Vijayapura

(Note: Lunch break from 1.30 to 2.15 PM)

INAUGURAL SESSION

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

Rapporteurs :Dr. S. B. Patil and Kumar B. H.

At the outset, Dr. P. L. Patil, Director of Research, UAS, Dharwad welcomed Hon'ble Vice Chancellor is absentia and all the officers of the University, Heads of the Departments, Scheme heads, Scientists of UAS, Dharwad and line department officers attending the Rabi meeting at A.C. Vijayapura. After the welcome, address the overview of the research activities was presented by the Director of Research.

Overview of research

The Director of Research expressed happiness for organizing the rabi ZREAC and ZREFC workshop in Vijayapura and informed the house that the rabi workshop will be conducted in Vijayapura every year. He appreciated scientists for developing new varieties/hybrids and technologies and their visibility in the farming community. He requested all scientists to do good work to bring new varieties and technologies. He thanked plant protection scientists' effort to withdraw old and ineffective molecules and suggested for retaining cheaper and effective molecules/chemicals. He also requested the social science group to bring policy implications/recommendations out of their research projects and appreciated the good work done by the community science and once again, he complimented all the scientists for their effort and excellent work.

The Director of Research, presented the overview of the research. Starting with rainfall and cropped area of UASD jurisdiction districts. He mentioned that districts like Belagavi, Dharwad, Haveri, Uttar Kannada received excess rainfall of 56 – 86% last rabi season and Vijayapura and Bagalkote districts faced a deficit rainfall of 20-29%, and Gadag received normal rainfall. Concerning cropped areas under UASD jurisdiction during the 2021-22 *rabi* season, cereals cover 65.88%, pulses 57.20%, oilseeds 67.04 and commercial crops 85.09% of the state's total area. He also presented details of externally funded projects of UASD received during 2019-20 to 2022-23. During 2021-22, UASD received 14 external funded projects with a total budget outlay of Rs. 3045.89 lakhs and in 2022-23 (till August 2022), it received nine projects with a total budget of 134.60 lakhs. He appreciated the scientists for fund mobilization through the projects and requested all the scientists to bring more externally funded projects. He also suggested to keep the project proposal in advance for submission to funding agency when called for not waiting for the proposal call, which may help to submit the proposal on time.

The Director of Research also presented the technologies developed by different disciplines during kharif 2021-22. A total of 28 technologies were developed. Out of which, crop improvement – 2, crop nutrition – 6, weed management – 3, pest management – 4, disease management – 5, animal science – 3, and others – 5 were developed. He informed house that the pearl millet hybrid VPMH-14 and sugarcane variety SNK 6356 were accepted for release and are still pending approval at State Variety Release Committee. He also informed that a total of 20 farm trials were carried out during kharif 2022-23.

The Director of Research expressed that seed production is a prestigious programme of UASD, and it was well appreciated for its activities. UASD produced a total of 7750 q kharif crops seed and 15296 q rabi crop seeds during 2021-22. The following thrust areas of research were presented, and requested all the University HoDs to formulate the technical programme to address this.

Major thrust areas of research

- Land resource inventory based soil and water conservation plan implementation, site-specific recommendations of crops and nutrients
- Breeding for climate resilient (drought and heat tolerant) varieties/hybrids
- Study on the effect of nano fertilizers
- Efforts to reduce the cost of cultivation of major crops
- Major emphasis on increasing the productivity of pulses and oilseeds

He requested agronomists and soil scientists to use the land resource inventory (LRI) developed under the Sujala project and formulate the technical programme on soil depths-based crop management and cropping systems. He stressed pigeonpea productivity improvement in shallow soil depths (<25 cm), including soil and water conservation practice, nutrient management, crop management, etc. He highlighted the activities under the REWARD project and optioned that this project will provide some information on LRI. He requested plant breeders visit flood-affected areas and collect the source of tolerance for flood/waterlogged conditions. He also asked all scientists to formulate the technical programme based on field problems identified by extension units.

Overview of extension

The Director of Extension, UAS, Dharwad presented their directorate activities starting from the Raitha Chenana Saayavaani (18004251150), which was started in 2015-16 to till now

and he has mentioned about 26,050 calls were received and given the consultancy to the farmers. The farmers were also asked about the green pass facilities during the covid lockdown time.

The Agriwar room was also established on 16-04-2020, and he has mentioned that up to 4542 calls have been received till now on 12 different subject matters. Among them, the availability of seeds at the farm was the highest calls, followed by agriculture related technologies information.

Director extension was added that the 16 bi-monthly workshops were conducted at various agriculture departments under UAS, Dharwad judiciary during the year 2022-23,

The SEMETI was started during the year 2014-15. Till now, there were 189 trainings, 08 educational tours and 07 workshops have been conducted.

Directorate also involved the diploma course (DAESI) for input dealers and it was initiated in 2015-16. There were 8120 beneficiaries are completed this course. There are 14 different nodal training institutes involved in the training programme for providing the diploma certificates under the Directorate. At present, there are 1000 input dealers were enrolled for the DAESI course. During the year 2021-22, SAMETI (North) bagged the first position for giving the effective training course to the DAESI, and this appreciation was given by the MANAGE institute, Hyderabad, GOI.

The Directorate also conducted the South India Zone level workshop on organic and Natural farming and effective utilization of ICM practices held on 19-21, June 2022. There were 38, 14 and one participants from Karnataka, Kerala and Lakshadweep, respectively.

During 2022-23, the Community Radio Centre' of UAS Dharwad (90.4 MHz) also provided the 1109 programme with 11 different agriculture related subject matters. On 19 June 2022, UAS Dharwad launched a Community Radio Centre Mobile App that was launched by the Union Agriculture State Minister. The community Radio Station at Dharwad was declared a Lead Community Radio Station by the Ministry of Information and Broadcasting, GOI for the period up to February 2025.

Directorate of Extension also initiated a pilot programme "Kulapathigala Nade-Raithara Kade," and there are two programmes were organized at Ahirasanga, Indi Tq, Vijayapura and Nandikeswara, Badami Tq, Bagalkot.

The Director of Extension also highlighted the daily Krishi Mitra publication in the Vijayavaani daily newspaper. Finally, the Director of Extension has highlighted the plan and execution of the upcoming Krishimela 2022-23.

Directorate of Extension UAS, Dharwad and its associates also elucidated the zone wise field related problem and researchable issues in the ZREAC meeting.

Weather and crop conditions

Associate Director of Research, RARS, Vijayapura presented the weather and crop condition of Zone-3. There are ten research stations in zone-3, including five seed farms. He presented the summary of rainfall at different Agricultural Research Stations of Zone-3, and mentioned that the stations like Kalloli (60.2%), Konnur (35.4%) received above normal and Arabhavi (6%), Annigeri (-1.2%), Belavatgi (13%), Gadag (8.3%), Vijayapur (-13.6%), Jamkhandi (-17.2%) normal rainfall. However, Almel (-58%), Bagalkot (-37%), Hombala (-51.6%), Mudhol (-26.2%) received below normal rainfall rabi 2021-22. Rainfall during September was a large deficit in all stations except Kalloli, Konnur and Vijayapura. The rainfall during November and December was excess in most stations except Gadag, Hombal and Jamakhandi. He also presented the research station-wise analysis of rainfall and crop condition. Sowings in most stations were delayed due to deficit rains in September. Still, normal yields were obtained due to good rains in November - December supported better growth and development of *rabi* crops. The ADR requested zone-3 ARS heads to submit their weather data well in time in a given format for compilation and presentation.

Associate Director of Research (HQ) presented the seasonal and crop condition in Zone 8, 9 and 10 during Rabi 2021-22. There are 13 research stations, including nine in zone-8, three in zone-9 and one in zone-10. He mentioned that all stations received excess rainfall during Rabi 2021-22. The excess rainfall ranged from 5% (Heballi) to 99% (Prabhunagar). In MARS, Dharwad, around 62% of higher rainfall was received, and excess rainfall was received in November and December. But, a deficit of 53% in September and 11% in October was observed. He mentioned that sowing was delayed in case of wheat and chickpea due to late *Kharif* rains, germination and crop establishment were affected due to heavy excess moisture, and unseasonal rains led to the severity of rust disease in chickpea and wheat due to higher humidity. He also indicated the incidence of pests and diseases in different research stations like rust in chickpea, pokkah boeing in maize, fusarium head blight and leaf rust and stem rust in wheat, downey mildew and rust in sorghum, YMV in green gram and soybean, *Helicoverpa* and spotted bollworm in non-*Bt* (DCH 32), sucking pest problem was more in green gram and black gram etc.

Field based problems and researchable issues

Dr. R.B. Belli, Associate Director of Extension, Vijayapura highlighted the field related problems along with photographs as follows:

1. Citrus related problems in Hadagali,

2. Sudden drying on grapes berries in Tajpur,
3. Drying of sugar cane shots,
4. Fruit dropping in pomegranate in Hadagali,
5. Canker dim Dragan fruit (ADR Hq suggested that go for a blanket recommendation for canker),
6. Pokka Boeing in sugarcane (SNK-9293 in Indi (DR suggested that proper diagnosis and formulate a technical programme),
7. Chickpea rust (JG-11) (DR suggested that go for season-based diseases and its recommendation.
8. Wheat head blight in Badami,
9. Sugarcane rust,
10. Sucking pest in Crysathimum flower (ADR Hg suggested that go for general recommendation for sucking pest),
11. Drone spray
12. Maradani local (groundnut) (DR asked task to Groundnut scheme regarding this)
13. ADE asked for MLT for Soybean: DR suggested that soybean is compared with cowpea, not with the ground)

Secondly, Dr. P.S. Hugar, Associate Director of Extension, Dharwad highlighted the field related problems as follows:

1. Liquid formulation of the complex fertilizers is based on the farmer's perception: highlighted 13 different water-soluble complex fertilizers and the reason for the farmers' use of these water-soluble complex fertilizers. DR suggested that the grading of the water-soluble complex fertilizers with a different concentrations based on the crops and also Director of Research asked to Director of Extension to list out the different combinations of the water-soluble complex fertilizers based on the crops and their stress conditions.
2. Listed the recommended varieties of soybean for *rabi* and summer seasons
3. Stemflymenace in soybean
4. Incidence of Omides indicated on *rabi* soybean in Kittur area
5. Sunflower necrosis disease
6. Stem rot in sunflower
7. Pink bollworm in cotton
8. Cotton shoot weevil
9. Chickpea rust

In the end, the Director of Research thanked all the presenters and requested the Head of the Departments to give their technologies to address the field based problems or formulate new technical programme to address the above mentioned researchable issues.

TECHNICAL SESSION – I

Chairman: Dr. B. D. Biradar, Dean (Agri.), College of Agriculture, Dharwad

Co-Chairman: Dr. I. K. Kalappanavar, Assoc. Director of Research (HQ), UAS, Dharwad

Rapporteurs: Dr. Chandrakant D. Soregaon and Dr (Mrs.). Kumari Basamma

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

Session started with welcome note by chairman and requested the Heads of Departments to present the research results of concluded experiments and proposals of new farm trial which were approved in the respective department technical meeting.

I) Genetics and Plant Breeding: Dr. O. Sridevi., Professor and University HOD of Genetics and Plant Breeding, Presented the results of concluded experiments leading to two proposal for farm trial and one adoption proposal for commercial cultivation.

Farm trial proposals:

1) Proposal of dicoccum wheat- DDK 1063 for Farm trial

Salient features of dicoccum wheat variety DDK1063 proposed by Dr. Suma S. Biradar Sr. Scientist (Plant Breeding) AICRP on Wheat MARS, UAS, Dharwad were presented along with its performance across zones 3 and 8 over the years. The proposed dicoccum wheat variety DDK 1063 is high yielding under timely sown irrigated condition and it is very much suitable for both zone 3 and 8 of Karnataka, which exhibited 12.8 percent increased yield over the check DDK 1029. The test entry is three days early in maturity and on par with other agronomic traits. The higher yield was attributed to high tiller number. Compared to check, the proposed entry DDK 1063 exhibits resistance to spot blotch disease.

The house **accepted** this proposal for farm trial with a recommendation for all disciplines to take up farm trial for minimum of 10 guntas in 10 locations, as the extension scientists expressed their problem of sowing for only 5 gunta in farm trial experiments due to mechanization.

The treatments were as follows.

T₁ – New Dicoccum variety DDK 1063

T₂ – Check Variety DDK 1029

2) Proposal of linseed variety DLV-7 for Farm trial For Zone III

Linseed var. DLV-7 for Zone 3 of Karnataka was proposed by Dr. Suma Mogali, Principal Scientist (Plant Breeding) AICRP on MULLaRP, UAS, Dharwad. The said variety is a mutant of Indira Alsí. The variety recorded 11.96% higher yield (992kg/ha) over the best check NL115 (886 kg/ha) across locations in zone 3 locations over six years 2016-21. It matures early (109 days) as

compared to check NL-115 (111 days) and IndiraAlsi (113 days).It possesses ALA content of 50.81 % (NL 115- 43.71%) and SDG content of 20.2 mg/g (NL-115 - 12.08 mg/g) both of which have health benefits.

The farm trial was **accepted**with the suggestion to include Agronomy trial data. As the agronomy trial data is required at the time of release, house suggested to conduct agronomy trial parallely along with the farm trial.

The treatments were as follows.

T1 – DLV-7

T2 – NL- 115(check)

While discussing about the conduct of agronomy trial, the house proposed to conduct the agronomy trial in respective zones if the proposed variety is for rainfed condition however, if its for irrigated condition the trial in one zone should suffice the requirement. House also expressed that, it is mandatory to enter in to AICRP trial for release/notification if crop wise AICRPs are there, otherwise it is exempted.

Salient features of the variety proposed for adoption:

1) Safflower variety- DSAF 1

The adoption proposal proposed by Dr. N. K. Naidu, Breeder, AICRP on Safflower ARS, Annigeri.The proposed variety has been released at national level for zone I and already notified. The variety with 1802 kg/ha of seed yield recorded 19.6% & 17.9% superiority over the national check A 1(1507 kg/ha) and Zonal check PBNS-12 (1528 kg/ha), respectively in Zone I. DSAF-1 (517 kg/ha) recorded 19.7% & 17.0% higher oil yield over the National check A1 (432 kg/ha) and Zonal check PBNS-12 (442 kg/ha), respectively in Zone-I and it is moderately resistant to *Fusarium* wilt.The variety adoption proposal to be presented during the session on variety release.

II) Agriculture Entomology: Dr. P.S.Hugar, Professor and University HOD of Entomology presented the results of the one concluded experiment. Dr. Hugar emphasized about the field problems in groundnut particularly on pests and diseases on groundnut.

Farm trial 01: Sucking insect pestsmanagement in groundnut during summer –

The farm trial was proposed byDr. Rohini Sugandi. Two years data showed that seed treatment with Imidacloprid 18.5%+Hexaconazole 1.50% FS @ 2 ml/kg was found to be superior in reducing the pest incidence over foliar spray with Dimethoate 30EC @1.70 ml/l. The house discussed the results in detail and suggested to conduct the trial for one more year with the observations on incidence of collar rot and stem rot diseases and asked to bring the proposal for next ZREAC workshop. Hence the proposal was **not accepted** for want of disease data.

III) Plant Pathology: Dr. Yashoda R. Hegde, Professor and University HOD of Plant Pathology presented results of two concluded experiments and both proposals are accepted for farm trial.

Farm trial 01: Management of leaf and stem rust of wheat

The proposal was moved by Dr. Gurudatt Hegde Principal Scientist (Plant Pathology) AICRP on Wheat, MARS, UAS, Dharwad. The experiments conducted during rabi 2020-21 and 2021-22 at AICRP wheat, MARS, UAS, Dharwad revealed that, among the various treatments the new molecule Tebuconazole 50% + Trifloxystrobin 25% WG @ 0.06% has considerably reduced both leaf rust (9.50%) and stem rust (11.67%) disease incidence and found on par with Picoxystrobin 7.05% + Propiconazole 11.7% SC @ 0.1% (15.33%) and (14.67%) followed by recommended chemical Propiconazole @ 0.1% (26.67) and (23.33%). The higher yields were recorded with Tebuconazole 50% + Trifloxystrobin 25% WG @ 0.06% (33.56q/ha) which was found on par with Picoxystrobin 7.05% + Propiconazole 11.7% SC @ 0.1% (32.16q/ha) followed by Propiconazole (28.85q/ha) compared to untreated control plots (20.94q/ha). The highest benefit (1:1.37) was also obtained in the effective treatment. Hence, the new molecule Tebuconazole 50% + Trifloxystrobin 25% WG @ 0.06% along with the recommended molecule Propiconazole @ 0.1% was proposed for the farm trial. The house suggested to include CV and CDs in all the relevant tables across observations including net returns.

The proposal was **accepted** for farm trial with following treatments;

T1 -Tebuconazole 50% + Trifloxystrobin 25% WG (0.6ml/l)

T2 - Propiconazole (1.0ml/l) (Recommended check)

Farm trial 02: Management of foliar diseases of Safflower

The farm trial was proposed by Dr. Prabhavati N. Rao, Scientist (Plant Pathology) AICRP on Safflower ARS, Annigeri. The experiment was conducted during 2020-21 and 2021-22 at ARS, Annigeri. Among the eight different treatments tested, seed treatments with Carbendazim 12% + Mancozeb 63% @ 2g/l followed by foliar spray of difenoconazole @ 1ml was effective for both Alternaria (14.95%) and Cercospora leaf spot (8.93%) over recommended check, seed treatment with Captan @ 2g /kg + Spray with Mancozeb @ 2g/l (34.18% and 25.07%) and highest disease incidence of alternaria leaf spot and cercospora leaf spot of 41.78% and 28.7% respectively was recorded in control over two-year period. High yield of 13.1q/ha was recorded in proposed treatment as against recommended check (9.3q/ha) and control (7.20 q/ha). Further, high B: C ratio of 1.68 was noticed with proposed treatment as against recommended check (1.19) and control (1.15).

House instructed to conduct the Large Scale Demonstration in farmer's field and suggested to invite University Officers to visit the same. With this suggestion, the proposal was **accepted** with the following treatments.

T1 -Seed treatment with Carbendazim 12% + Mancozeb 63% @ 3g/kg+ foliar spray of Difenconazole 25%EC@ 1ml/l at first appearance of the disease and 15 days after 1st spray

T2- ST with Captan @ 2g /kg + Spray with Mancozeb @ 2g/l (Recommended check) at first appearance of the disease and 15 days after 1st spray

IV) Department of Agronomy:Dr. H. B. Babalad, Professor and University HOD of Agronomy presented the results of concluded experiments leading to eleven (11) farm trial proposals and six (06) technologies for inclusion/modification in the Package of Practice. Out of 17 proposals, seven farm trials and five technologies for inclusion/modification in PoP were accepted.

Farm trial proposals:

1: Response of *rabi* grain sorghum (SPV-2217) to different levels and sources of sulphur.

This was proposed by Dr. T. T. Bandiwaddar, Sr.Scientist (Agronomy), AICRP on Sorghum, MARS, UAS Dharwad. The experiment was conducted for two years (*rabi*-2020-21 and 2021-22) wherein the soil application of Sulphur @ 20kg/ha through Bentonite along with RDF (@ 50:25:0 kg NPK/ha+FYM @3t/ha+ZnSO₄ @15kg/ha) recorded significantly higher grain yield (47.37 q/ha), stover yield (12.04 t/ha), gross returns (Rs.1,33031/ha), net returns (Rs.89432/ha) and B:C (3.05) as compared to rest of the treatments followed by sulphur @ 20kg/ha through Gypsum along with RDF (@ 50:25:0 kg NPK/ha+FYM @3t/ha+ZnSO₄ @15kg/ha). House **accepted** this farm trial proposal with a suggestion that good photographs should be taken at milky stage with uniform crop stand.

The treatments were as follows.

T₁: RPP+ sulphur@ 20kg/ha through Bentonite

T₂: Only RPP (RDF@ 50:25:0kg NPK/ha + FYM @ 3 t/ha + ZnSO₄ @15kg/ha)

2: Optimizing sowing windows and fertility levels in *rabi*maize

Dr.S.R.Salakinakoppa, Principal Scientist and Head, AICRP on Maize, MARS, UAS, Dharwad, proposed this farm trial. Pooled results of two years experiments indicated that planting of *rabi* maize during first week of October recorded significantly higher grain yield (87.5 q ha⁻¹), and net return (₹ 101,600 ha⁻¹) and it was found on par with sowing during second week of October. Among the fertility levels, application of 200 % RDF recorded significantly higher grain yield (83.5 q ha⁻¹), and net return (₹ 90050 ha⁻¹) and it was found on par with application of 150 % RDF. Interaction effect showed that planting of *rabi* maize during first fortnight of October with application of either 200 % or 150 RDF recorded significantly higher grain yield and net

return compared to treatment combinations which included November first week sowing at all fertility levels. The farm trial proposal was accepted by the house with following treatments.

House **accepted** this proposal with approval of following treatments for farm trial.

T1: Sowing of *rabi* maize during first fortnight of October with 150% RDF which is recommended for kharif maize.

T2: Sowing of *rabimaize* during first fort night of October with 100% RDF which is recommended for kharif maize.

3. System of wheat Intensification (SWI)

System of wheat intensification (SWI) was proposed by Dr. Kumar D. Lamani Agronomist& Head AICRP on Wheat, MARS, UAS, Dharwad. The experiment was conducted in Dharwad and Ugar (Rabi 2020-21 and 2021-22). Pooled analysis of data showed that treatments combination of seed priming with raised bed of spacing 30 x 15 cm showed significant yield superiority of 49.38 q/ha, biomass yield of 149.19 q/ha and test weight of 44.15 gm as compared to other treatment combinations. Seed priming with seed rate 12 kg/acre with 30x 15 cm recorded significantly higher yield and yield parameters.

House discussed about the possibility of mechanized sowing with proposed treatment of reduced seed rate of 12kg/ha against the recommended 150 kg/ha. Finally, house **accepted** the proposal of farm trial with a suggestion to go for mechanized sowing on flat bed in case of LSD (1 acre) and hand dibbling on flat bed in case of farmers field (10 gunta).

The proposal was **accepted** with following treatments

T 1: Seed priming + seed rate 12 kg/ha (at spacing of 30 x 15 cm)

T2: Control: RPP

4. Effect of seaweed extract on growth and yield of wheat

This farm trial was proposed by Dr. Kumar D. Lamani Agronomist& Head AICRP on Wheat, MARS, UAS, Dharwad. Pooled data indicated that seed treatment with seaweed extract@3ml/kg seed and foliar application of seaweed extract @ 4ml/litre water at tillering and heading stage was found to superior over RPP. The proposal was discussed in detail and the house **deferred** the proposal in view of lack of relevant information on composition of the extract, the species *etc.*

5. Lodging management for enhancing yield in dicocum wheat using potential plant growth regulator

This farm trial was proposed by Dr. Kumar D. Lamani Agronomist& Head AICRP on Wheat, MARS, UAS, Dharwad. The experiment was conducted with three genotypes MACS 2971, DDK 1029 and HW 1028 as main plot treatments and five sub plot treatments as growth regulator spray at Dharwad (Rabi 2020-21 and 2021-22). Pooled analysis of data showed that ethephon spray of 30 ppm showed superior yield performance of 43.87 q/ha with biomass of

131.61 q/ha and test weight of 43.88 gm. Interaction effects with grain yield showed that HW 1098 with ethephon spray of 30 ppm showed yield of 44.34 q/ha, biomass of 133.02 q/ha and test weight of 44.28 gm over other treatments. Variety HW 1028 when sprayed with ethephon @ 30 ppm recorded significantly lower plant height (62.4 cm) over other treatments. Variety HW1098 / Gokak Local with the spray of Ethephon 30 ppm recorded significantly higher yield and yield parameters. House suggested the concerned scientist to enlist the criterion traits for lodging tolerance assessment and the same to be recorded. The proposed farm trial was **accepted** with following treatments using Gokak Local variety.

T 1: Spray of Ethephon 30 ppm

T 2: Control: RPP

6. Maximising the wheat productivity by fine tuning sowing time and fertilizer rates.

This was proposed by Dr. Kumar D. Lamani Agronomist & Head AICRP on Wheat, MARS, UAS, Dharwad. Among the different treatments, the treatment with sowing on 15.11.2021 with NM3:RDF+ 15 t/ha FYM+ growth regulator spray was found superior over the treatment RPP.

After thorough discussion, house **deferred** this proposal for farm trial, as 15 tonnes/ha FYM is not available to conduct the trial.

7. Response of fodder oats genotypes to different fertilizer levels under irrigation

This farm trial was proposed by Dr. V.S. Kubasad, Professor of Agronomy, AICRP on Sorghum, MARS, UAS, Dharwad. Among the different treatments the treatment JHO-2009-1 with 125% RDF (137.5:90:60 kg N,P₂O₅,K₂O/ha) was found superior over the treatment JHO-2009-1 with 100% RDF (110 :75:50 kg N,P₂O₅,K₂O/ha). As there are no recommended varieties of oat for the zones under UAS Dharwad jurisdiction, the house suggested the scientist that the efforts to adopt the variety for our zones to be initiated by the breeder in fodder scheme and then other related proposals may follow. Hence, the proposed farm trial was **deferred**.

8. Performance of safflower under mechanization system

Performance of safflower under mechanization system was proposed by Dr. Sangshetty Scientist (Agronomy), AICRP on Safflower, ARS, Annigeri. It was presented that among the different treatments, the treatment mechanized practices (Harvesting and threshing) was found superior with B:C ratio of 2.18 over farmer's practice with B:C ratio of 1.76. The house discussed the experiment in detail and opined that such experiments (without any statistical design) cannot become the farm trial, however large scale demonstrations of mechanization can be arranged for the benefit of farmers. Hence, the proposal was **not accepted** by the house.

9. Effect of application of endophytic microorganisms in alleviation of salinity stress in coastal groundnut under residual soil moisture (Uttar Kannada District of Karnataka)

The proposal was given by Dr. B. S. Yenagi Agronomist, AICRP on Groundnut, MARS, UAS, Dharwad. Mean data of two years (2020-21 and 2021-22) indicated that all the endophytes (1 to 5) performed equally in alleviating soil salinity in coastal sandy soil at Kumata (Uttar Kannada district). The mean yield 1726 to 2170 kg ha⁻¹ upon seed treatment with different endophytes 1 to 5. The control recorded dry pod yield of 1726 kg ha⁻¹. The per cent reduction in yield varied from 1.43 to 20.46. But, Endophyte 3 excelled among different endophytes. The salinity level increased from 5.64 to 7.35 dSm⁻¹ during the cropping period from 20.11.2020 to 11.03.2021. The salinity level increased from 5.45 to 7.49 dSm⁻¹ during the cropping period from 01.12.2021 to 21.03.2022. There was no change in pH level, however, it was decreased as the soil salinity get increased.

The farm trial proposed was **accepted** by the house after lengthy discussion about the availability of Endophyte. The proposer replied in detail about its availability as Endophyte 3 i.e. *Bacillus firmus* J22N which is seed cum root endophyte and its formulation name is SalGuard.

The proposal was accepted with following treatments;

T1 – Seed treatment with Endophyte 3

T2 – Control

10. Precision nutrient management through rescheduling time of application for widely spaced sugarcane plant -ratoon system.

The said proposal was moved by Dr. S. S. Nooli, Agronomist (Sugarcane), ARS, Sankeshwar. The experiment was carried out during 2020-21 (Plant crop) and 2021-22 (Ratoon crop). Interactions of band application of RDN+RDK at six splits (Basal 10% remaining at 45, 75, 90, 120 and 150 DAP in equal splits) recorded significantly higher cane yield (134.9 and 112.3 t ha⁻¹ in plant and ratoon crop, respectively) and significantly higher net returns of Rs 2,61,135 ha⁻¹ with B; C ratio of 3.24 in plant cane and net returns of Rs 2,02,270 ha⁻¹ with B; C ratio of 3.12 in ratoon cane. Sugarcane juice quality parameter, per cent CCS did not differ significantly due to method and time of application. However, interaction of band application of RDN+RDK at six splits (Basal 10% remaining at 45, 75, 90, 120 and 150 DAP in equal splits) recorded significantly higher sugar yield (16.5 and 13.6 t ha⁻¹ in plant and ratoon crop, respectively). Band application of RDN+RDK at six splits (Basal 10% remaining at 45, 75, 90, 120 and 150 DAP in equal splits) recorded significantly higher agronomic nitrogen, phosphorus, potassium and combined NPK use efficiency over rest of interactions both in plant as well as ratoon crop. Similar trend of results was noticed in major nutrient uptake (N, P and K) i.e., Band application of RDN+RDK at six

splits (Basal 10% remaining at 45, 75, 90, 120 and 150 DAP in equal splits) recorded significantly higher major nutrient uptake over rest of interactions both in plant as well as ratoon crop.

This proposal for farm trial with following treatments was **accepted** in the house with a suggestion to change in title as 'precise' instead of precision.

T1: RDN (250kg/ha) + RDK(190kg/ha) in six splits

T2: Recommended dose and schedule of nutrient applications (250:75:190 kg N:P₂O₅: K₂O ha⁻¹)

11. Evaluation of Bio efficacy and phytotoxicity of ready mix post emergence herbicides against weeds in Sugarcane and its effect on succeeding crop

Dr. S. S. Nooli, Agronomist (Sugarcane), ARS, Sankeshwar, proposed the above farm trial. Weed density (grassy, sedge, BLW's and total) and weed dry weight (grassy, sedge, BLW's and total) at 20, 40 and 60 days after herbicide spray were found to be significantly lower in 2, 4D Sodium salt 44% + Metribuzine 35% + Pyrazosulfuron ethyl 1.0% WDG as PoE @ 3000 g/ha (T₂) which was on par with Topramezone 10 g/l + Atrazine 300 g/l SC as PoE @ 3000 ml /ha (T₄). Higher weed control efficiency was registered in 2,4D Sodium salt 44% + Metribuzine 35% + Pyrazosulfuron ethyl 1.0% WDG as PoE @ 3000 g/ha (T₂) (86.3, 74.5 and 72.79 per cent at 20, 40 and 60 DAHS, respectively) followed by Topramezone 10 g/l + Atrazine 300 g/l SC as PoE @ 3000 ml /ha (T₄) (85.5, 73.3 and 70.47 per cent, respectively). Pooled results of two years indicated, significantly higher yield was recorded in 2,4D Sodium salt 44% + Metribuzine 35% + Pyrazosulfuron ethyl 1.0% WDG as PoE @ 3000 g/ha (T₂) (137.5 t ha⁻¹) followed by Topramezone 10 g/l + Atrazine 300 g/l SC as PoE @ 3000 ml /ha (T₄) (132.5 t ha⁻¹). 2,4D Sodium salt 44% + Metribuzine 35% + Pyrazosulfuron ethyl 1.0% WDG as PoE @ 3000 g/ha (T₂) recorded significantly higher gross returns (Rs. 343750 ha⁻¹), net returns (Rs. 256450 ha⁻¹) and B:C ratio which was on par with Topramezone 10 g/l + Atrazine 300 g/l SC as PoE @ 3000 ml/ha (T₄) (Rs. 331250 ha⁻¹, Rs. 244750 ha⁻¹) and 3.83, respectively). There was no phytotoxicity effect observed on succeeding cowpea crop. After thorough discussion, the proposed farm trial was **accepted** in the house with following treatments.

T 1: 2,4D Sodium salt 44% + Metribuzine 35% + Pyrazosulfuron ethyl 1.0% WDG (Ready mix) as PoE (weeds at 2-4 leaf stage) @ 3000 g ha⁻¹ (6 gm liter⁻¹)

T 2: Control: Topramezone 10 g/l + Atrazine 300 g/l SC (Ready mix) as PoE (weeds at 2-4 leaf stage) @ 3000 ml ha⁻¹ (6 ml liter⁻¹)

T3: Atrazine 50% WP (2000 g ha⁻¹) (4 gm liter⁻¹) as PE fb 2, 4 – D 80 % WP (2500 g ha⁻¹) (5 gm liter⁻¹) as PoE (RPP)

Inclusion/Modifications to POP:

Organic farming:

1. Organic nutrient management on yield and quality of sugarcane and jaggery

This was proposed by Dr. S. S. Nooli, Agronomist (Sugarcane), ARS, Sankeshwar. Field experiment was conducted in strip block design to study the response of two sugarcane cultivars [SNK 09211 (C₁) and SNK 07680 (C₂)] as horizontal strips to six nutrient management practices (NMPs) as vertical strips, with special reference to organic jaggery production and quality during 2017-18 and 2020-21 (plant) and 2018-19 (ratoon) at organic site, ARS Sankeshwar. The cultivar SNK 07680 produced significantly higher plant (pooled of two years) and ratoon cane yield of 128.1 and 123.0 t ha⁻¹, respectively. It also recorded superior juice quality, jaggery yield (14.59 t ha⁻¹ in plant and 14.16 t ha⁻¹ in ratoon cane) and good quality (A₂ grade) jaggery. Among organic NMPs, N₁ and N₂ recorded significantly higher plant cane, ratoon cane and jaggery yield. The organic NMPs (N₁ to N₅) recorded higher dehydrogenase, urease and phosphatase enzyme activity after harvest in both plant and ratoon cane than RPP. The interactions, N₁C₂ (132.4 and 122.4 t ha⁻¹) and N₂C₂ (130.4 and 121.5 t ha⁻¹) recorded significantly higher cane yield in both plant (pooled of two years) and ratoon crops, respectively. These interactions also recorded higher jaggery yield. Significantly higher net returns was obtained from plant cane with N₁C₂ (Rs.257450 ha⁻¹), N₂C₂ (Rs. 250850 ha⁻¹) and through FYM + BDF (50 % each) with cultivar SNK 07680 (N₃C₂, Rs. 266680 ha⁻¹). For organic jaggery production, significantly higher net returns in plant cane were recorded with same interactions *viz.*, N₁C₂ (Rs.551920 ha⁻¹), N₂C₂ (Rs. 534880 ha⁻¹) and N₃C₂ (Rs. Rs. 543390 ha⁻¹). Similar trend followed for ratoon jaggery production. Based on the results, the proposal for modification of organic agriculture PoP was **accepted**.

2. Response of chickpea cultivars to organic farming

The proposal to include Jaki 9218 variety under organic farming PoP in the chickpea chapter was proposed by Dr. S. A. Gaddanakeri, Professor of Agronomy, UAS, Dharwad. The trial details are as follows, the trial was conducted for six years during 2014 to 2019. Out of 05 varieties tested under organic condition JAKI-9218 performed better as compared to rest of the varieties. Cultivar JAKI 9218 (2980 kg/ha) produced 3 %, 8 %, 11 % and 21 % higher seed yield over cultivars A1 (2894 kg/ha), MABC 37 (2772 kg/ha), BGD103(2682 kg/ha) and MABC 27 (2454 kg/ha), respectively. Except variety MABC-27 remaining all the four varieties were statistically on par with respect to their yielding ability over years. The mean of 06 years gross monitory returns and net monitory returns were higher with JAKI-9218 (Rs. 1, 31,724/ha and Rs.1, 11,457/ha, respectively) as compared to rest of the varieties. The soil had the mean pH of 6.85, EC_{2.5} of 0.09 and organic carbon of 6.58 g/kg. The mean available N, P₂O₅, K₂O and S were 189, 62.8, 334, 52.3 kg/ha, respectively. Of these, available N was low while P₂O₅, K₂O and S were medium to high. The soil showed sufficient levels of available micronutrients (8.76, 34.4, 0.65 and 1.57 mg/kg of Fe, Mn, Zn and Cu, respectively).

All the test varieties were on par with each other for pod borer incidence ranging from 25 to 32% under organic production system while for diseases, except A-1 all other varieties were moderately resistant to wilt disease including JAKI-9218 and for rust, all the test varieties showed susceptible reaction. Based on the results over six years, it was **accepted** for inclusion in organic farming PoP in the chickpea chapter.

3. Response of wheat cultivars to organic farming

This was also proposed by Dr. S. A. Gaddanakeri, Professor of Agronomy, UAS, Dharwad, wherein the experiment was conducted for six years (2014 to 2019). Out of 05 varieties tested under organic condition UAS-446 and UAS-347 performed better as compared to rest of the varieties. Cultivar UAS 347 (Bread wheat 2716kg / ha) produced 8%, 17%, 17 % and 35 % higher seed yield over cultivars UAS 446 (Durum wheat) (2511 kg/ha), NIAW 1415 (Bread wheat) (2322 kg/ha), DWR 2006 (Durum wheat) (2320 kg/ha) and BIJAGA YELLOW (Durum wheat) (2006 kg/ha) respectively. Similarly cultivar UAS 446 (Durum wheat 2511 kg/ha) produced 7.53%, 7.61% and 20.11 % higher seed yield over cultivars NIAW 1415 (Bread wheat) (2322 kg/ha), DWR 2006 (Durum wheat) (2320 kg/ha) and BIJAGA YELLOW (Durum wheat) (2006 kg/ha), respectively. Economics also indicates that, mean of 06 years gross monetary returns and net monetary returns are higher with UAS-347 (Rs. 52,332/ha and Rs.27,949/ha, respectively) and UAS-446 (Rs. 48,848/ha and Rs.24,465/ha, respectively) as compared to rest of the varieties. The soil had the mean pH of 6.94, EC_{2.5} of 0.07 and organic carbon of 7.44 g/kg. The mean available N, P₂O₅, K₂O and S were 198, 51.1, 352, 62.5 kg/ha, respectively. Of these, available N was low while P₂O₅, K₂O and S were medium to high. The soil showed sufficient levels of available micronutrients (9.32, 34.5, 0.69 and 1.78 mg/kg of Fe, Mn, Zn and Cu, respectively).

These varieties were also evaluated to know their reaction against shoot fly and stem borer during 2016-17 to 2019-20. The incidence of both pests was negligible while for diseases, Bijaga Yellow was found to be susceptible to rust disease whereas, cultivar UAS-347 was observed to be moderately susceptible to the same and remaining varieties including UAS-446 were resistant to rust incidence. All varieties tested were resistant to spot blotch incidence except Bijaga Yellow, which showed susceptible reaction.

After discussion house **accepted** UAS 446(DW) for the modification/inclusion in the organic farming package of practices in the chapter on wheat.

Natural farming:

Research Highlights of Natural farming experiments (Zone 8) proposed for modification to PoP.

Under natural farming there were three proposals for modification/ inclusion in PoP for zone 8, among them two were accepted and one was deferred. Details are as below;

1. Comparative evaluation of natural farming with organic and conventional farming practices in summer Black gram

This was proposed by Dr.C.P.Chandrashekar, Professor of Agronomy,UAS, Dharwad Dharwad for inclusion/ modification in PoP. Natural farming and RPP recorded on par yield (811 and 778 kg ha⁻¹) than Organic farming (696 kg ha⁻¹). The cost of cultivation incurred was higher under organic and RPP practices (Rs. 46357 and 47606 ha⁻¹, resp.,) and least was under NF (Rs. 37008 ha⁻¹). About 20 per cent total costs were saved under NF than RPP and 22 percent lesser over organic farming. The large amount was saved in material cost under NF (47 and 43 per cent) when compared to RPP and OF, respectively. The net returns were higher under NF practices without premium price (20024 ha⁻¹) than OF (3818ha⁻¹) and RPP (Rs. 12653 ha⁻¹). About 58.3 per cent higher net return was obtained under NF over RPP. With premium price, the net return was estimated to be higher under NF (Rs. 30542 ha⁻¹) than OF (Rs. 13257 ha⁻¹) and RPP (Rs.12653 ha⁻¹). About 45 per cent higher benefit cost ratio was obtained under NF (1.86) over RPP (1.28).

Based on the results of the experiment after conversion period of two years (2018 & 2019) and the discussion, the proposal was **accepted** by the house for inclusion/ modification in PoP.

2. Comparative Evaluation of Natural Farming with Organic and Conventional Farming Practices in summer groundnut.

This was proposed by Dr.C.P.Chandrashekar, Professor of Agronomy,UAS, Dharwad for inclusion/ modification in PoP. The higher groundnut yield was recorded under RPP (3164 kgha⁻¹) than OF (2798 kgha⁻¹) and NF (3035 kgha⁻¹) practices. About only 4.2 per cent yield was reduced under NF compared to RPP and 7.8 per cent increased over OF. The cost of cultivation worked out to be Rs. 54381 per hectare under NF practice which was lower than organic farming (Rs. 72120 ha⁻¹) and RPP (Rs. 69055 ha⁻¹). The cost of cultivation of groundnut under Natural Farming was reduced to the tune of 20 per cent than RPP and 25 percent than OF. The net return without premium price realized was higher in natural farming (Rs. 117757 ha⁻¹) which was on par with RPP (Rs. 114439 ha⁻¹) and least in OF (Rs. 88294 ha⁻¹). About 2.90 per cent higher net return was obtained under NF than RPP. With premium price, the net returns obtained were higher under NF and OF (Rs. 151089 and 119188ha⁻¹) than RPP (Rs. 114439 ha⁻¹). The benefit cost ratio was estimated to be higher under NF (3.73) than RPP (2.67) and OF (2.66).

Based on the results of the experiment after conversion period of two years (2018 & 2019), the proposal was **accepted** for inclusion/ modification in PoP.

3. Comparative evaluation of natural farming with organic and conventional farming practices in summer green gram(2019 to 2021)

This was proposed by Dr.C.P.Chandrashekar, Professor of Agronomy,UAS, Dharwad for inclusion/ modification in PoP. The 3 year pooled green gram grain yield was higher under natural farming (NF) (930 kg ha^{-1}) and organic farming (847 kg ha^{-1}) than RPP (831 kg ha^{-1}). About 11.9 and 9.7 per cent higher yield was obtained under natural farming than RPP and organic farming respectively. Least cost of cultivation of green gram was incurred under NF (Rs. 37259 ha^{-1} , which was about 21.9 per cent lower than RPP) than under RPP (Rs. 46811 ha^{-1}) and organic farming (Rs. 47757 ha^{-1}). About 43.2 and 39.4 per cent material costs were saved under NF over RPP and OF respectively. With and without premium price, the higher net return was obtained under NF (Rs. 37892 and Rs. 52098 ha^{-1}) than OF (Rs. 20317 and 33299 and ha^{-1} , resp.,) and least was under RPP (Rs. 19163 ha^{-1}).

However, after conversion period of two years (2019 & 2020) the data of only one year (2021) was available, hence the proposal was **deferred** with a suggestion to bring the proposal for next ZREAC with data of two years after the conversion period of two years.

Further, the similar natural farming proposals of Zone 3 having only three years data were not presented and the house **suggested to present them in next ZREAC** with minimum of two years data after conversion period.

V) Horticulture:

On behalf of Professor and University Head, Department of Horticulture, Dr. S. G. Angadi presented results of one concluded experiment for adoption of two rose varieties *viz.*, Arka Ivory and Arka Kinnari developed at IIHR, Bengaluru.

The proposal was discussed and was **not accepted** to present for adoption in want of gazette notification of the said varieties.

At the end of Technical session-I, 11 concluded experiments were approved for farm trial, one adoption and 5 technologies were recommended for direct inclusion in the package of practice. There were no concluded experiments from remaining departments.

The session ended with vote of thanks and chairman of the session Dr. B. D. Biradar, Dean (Agri.), College of Agriculture, Dharwad thanked all the presenters, proposers, rapporteurs and all those who participated actively in the discussion of Technical session-I. Dr. P.L.Patil, Director of Research,UAS, Dharwad, thanked the Chairman and co-chairman for nice conduct of marathon session.

Accepted Farm Trial Proposals

I) Genetics and Plant Breeding

1) Proposal of dicoccum wheat- DDK 1063 for Farm trial

Sl. No.	Crop / Subject	Objective	Details of treatments	Methodology & Observations	Districts/ locations	No. of trials	Contd / New	Expected Date of Completion	Contact Scientist/s / Collaborators (Phone No.)
1	2	3	4	5	6	7	8	9	10
1	Wheat	Varietal Evaluation	T ₁ : DDK 1063 T ₂ : DDK 1029	1. Grain yield (kg/ha) 2. Incidence of diseases and pests	Zone-8 KVK, Dharwad- 2 JDA, Belagavi- 2 AEEC, Belagavi- 2 LSD, Dharwad- 1 Zone-3 AEEC , Mudhol- 2 KVK, Vijaypura- 2	11	New	2022-23	Developers: Dr. Suma Biradar (9986415168) Dr. S. A. Desai Dr. Rudra V. Naik Dr. Uday Reddy Dr. Kumar Lamani Dr. Sudha T Dr. Gurudatt Hegde Dr. P. V. Patil Dr. I. K. Kalappanavar Collaborators: Shri. S. M. Ghatanatti Shri Sudhakar Kulkarni Dr. Kavitha Patil Dr. Shivaleela Kukanur Miss. Lalita G. Jaggal Dr. Mahalaxmi K. Patil Dr. Yashawantha K. J. Dr. P. S. Mattiwade Dr. Virupaksha Prabhu Dr. Shashidhar T. N Patavardhan G. H. J. H. Kulakarni Dr. R. D. Patil Dr. S. A. Biradar Dr. Vijaykumar A. G. Dr. J. S. Hilli Dr. O. Sridevi Dr. B. D. Biradar Dr. P. L. Patil

2)Proposal of linseed variety DLV-7 for Farm trialFor Zone III

S. No.	Crop/ Subject	Objective	Details of Treatments	Methodology & Observations	Districts / Locations	No. of Trials	Contd/ New	Expected date of Completion	Contact Scientist/Collaborators (Phone No.)
1	Linseed	Breeding of high yielding variety of linseed	T1: DLV-7 T1:NL-115	No of capsules No of primary branches No of secondary branches yield /plant Seed yield (kg/ha)	JDA Vijayapur - 2 KVK Vijaypur - 2 KVK Bagalkoti - 2 KVK –Indi - 2 AEEC Gadag - 2 JDA Bagalkoti - 2 LSD - 1	13	New	2022-23	Dr. Suma Mogali Dr. Ganajaxi Math Dr. Gurupada Balol Dr. Iramma Goudar Dr. Channakeshava R Ms. Lalita Jaggal Dr. Subhas Kandakur, ARS Bailhongal Dr. Jolli Dr. M. D. Patil Dr. Arun Satareddy, ARS Bagalkoti, Dr. Yogesh., UAS, Raichur Dr. G.K.Naidu Dr. Arun kumar, ARS, Nippani Dr. Mattiwade, ARS, Nippani Dr. Shivakumar, UAS, Raichur Dr. Ajith kumar, UAS, Raichur Dr. O. Sridevi Dr. Suma Biradar Dr. A.G. Vijaykumar Dr. B. N. Motagi Dr. Yamanura Dr Negalur Dr Savita Dr Nooli S.S.

II) Plant Pathology

1) Management of leaf and stem rust of wheat

Sl. No.	Crop/ Subject	Objective	Details of treatments	Methodology & Observations	Districts/ locations	No. of trials	Contd/ New	Expected Date of Completion	Contact Scientist/s / Collaborators (Phone No.)
1	2	3	4	5	6	7	8	9	10
1	Wheat	Evaluate new molecule for rust management	T ₁ :Tebuconazole 50% + Trifloxystrobin 25% WG (0.6ml/l) T ₂ :Propiconazole(1.0ml/l) (Recommended check)	First spray at flowering stage and remaining 2-3 sprays at 15 days interval depending on the disease severity. Observation: 1. Disease severity 2. Yield (q/ha)	Zone 8 AEEC Dharwad-01 AEEC Belagavi -02 KVK Mattikoppa-01 JDA, Dharwad-01 JDA, Belagavi-01 Zone 3 KVK Vijayapur-01 KVK Bagalkote-01 AEEC Gadag-01 JDA- Bagalkote-01 JDA-Gadag-01	10	New	2022-23	Dr. Gurudatt M. Hegde Dr. Suma Biradar Dr. Kumar D. Lamani Mr. Suresh Ghatanatti & Mr. Sudhakar Kulkarni

2)Management of foliar diseases of Safflower

Sl. No	Crop/ Subject	Objective	Details of treatments	Methodology & Observations	Districts/ locations	No. of trials	Contd / New	Expected Date of Completion	Contact Scientist/s / Collaborators (Phone No.)
1	2	3	4	5	6	7	8	9	10
1	Safflower	Management	<p>T1: Seed treatment with Carbendazim 12% + Mancozeb 63% @ 3g/kg+ foliar spray of Difenconazole 25%EC@ 1ml/l at first appearance of the disease and 15 days after 1st spray</p> <p>T2:ST with Captan @ 2g /kg + Spray with Mancozeb @ 2g/l (Recommended check) at first appearance of the disease and 15 days after 1st spray</p>	Percent Disease Index (PDI)&Seed yield	<p>KVK Hulkoti</p> <p>KVK Mattikoppa</p> <p>KVK Bagalkote</p> <p>JDA Gadag</p> <p>AEEC Gadag</p> <p>Bijapur KVK</p> <p>LSD</p>	<p>02</p> <p>01</p> <p>01</p> <p>02</p> <p>02</p> <p>01</p> <p>02</p>	New	February/March 2023	<p>Prabhavathi N. Rao</p> <p>Scientist (Plant Pathology)</p> <p>AICRP on Safflower ARS, Annigeri</p> <p>Cel. 9741855081</p> <p>E. Mail ; prabhavati4644@gmail.com</p>

III) Agronomy

1. Response of *rabi* grain sorghum (SPV-2217) to different levels and sources of sulphur.

Sl. No	Crop/ Subject	Objective	Details of treatments	Methodology & Observations	Districts/ locations	No. of trials	Contd/ New	Expected Date of Completion	Contact Scientist/s / Collaborators (Phone No.)
1	2	3	4	5	6	7	8	9	10
1	Sorghum Agronomy	To know the effect of sulphur on growth and yield of <i>rabi</i> sorghum	T ₁ : RPP+ sulphur@ 20kg/ha through Bentonite T ₂ : Only RPP (RDF@ 50:25:0kg NPK/ha + FYM @ 3 t/ha + ZnSO ₄ @ 15kg/ha)	-Soil application at the time of sowing. Observations: 1) Grain yield (q/ha) 2) Fodder yield (t/ha)	JDA Belagavi KVK Dharwad AEEC Dharwad JDA Haveri JDA Dharwad KVK Haveri LSD-1 by contact Scientist	2 2 2 2 2 1	New	10-3-2023	Dr.T.T.Bandiwaddar Sr.Scientist(Agronomy) AICRP-Sorghum MARS,UAS Dharwad Mobile:9449043201 Email:bandiwaddartt12847@uasd.in

2) Optimizing sowing windows and fertility levels in rabi maize during rabi-2022-23

Sl. No.	Crop / Subject	Objective	Details of treatment	Methodology & observations	Districts/locations	Locations	Contd./New	Expected date of completion	Contact scientist/s/Collaborators (Phone No.)
1	Optimizing sowing windows and fertility levels rabi maize during rabi-2022-23	To Optimize sowing windows and fertility levels rabi maize.	<p><i>T1: Sowing of rabi maize during first fortnight of October with 150% RDF which is recommended for kharif maize</i></p> <p><i>T2: Sowing of rabi maize during first fortnight of October with 100% RDF which is recommended for kharif maize</i></p>	<p>Methodology : For T1: Application of 150% RDF-225 kg N ha⁻¹, 97.5 kg P₂O₅ ha⁻¹ and 97.5 kg K₂O ha⁻¹ should be applied</p> <p>For T2, Application of 100% RDF: 150 kg N ha⁻¹, 65 kg P₂O₅ ha⁻¹ and 65 kg K₂O ha⁻¹ should be applied</p> <p>Observations : 1. Maize grain yield and stover yield per ha.</p>	KVK, Dharwad	02	New	2022-23	<p>Dr.S. R. Salakinkop Principal Scientist and Head AICRP on maize, MARS, Dharwad Email: salakinkopsr@uasd.in Mobile No: 09481259541 / 07760904282</p>
					KVK, Hanumanamatti	02			
					KVK, Mattikoppa	02			
					JDA, Belgavi	02			
					JDA, Dharwad	02			
					JDA, Haveri	02			
					AECC, Dharwad	02			
					AECC, Gadag	02			
					KVK, Bagalkote	02			
					LSD(Scientist)	02			

3) System of wheat Intensification (SWI)

Sl. No.	Crop/ Subject	Objective	Details of treatments	Methodology & Observations	Districts/ Locations	No. of trials	Contd/ New	Expected Date of Completion	Contact Scientist/s / Collaborators (Phone No.)
1	2	3	4	5	6	7	8	9	10
1.	Wheat	System of wheat Intensification	Treatment 1: Seed priming + seed rate 12 kg/ha (at spacing of 30 x 15 cm) Treatment 2: Control: RPP	Tiller count Plant height Grain yield Biomass Days to flowering	AEEC-MUDHOL-2 KVK BAGALKOT-2 AEEC BELGAUM-2 KVK TUKKANATTI-2 JDA BELGAUM-2 LSD-2	12	New	April, 2023	Dr. Kumar D. Lamani Professor (Agronomy) & Head AICRP on Wheat. 9611809833 Dr. G.M. Hegde Professor (Pl. Path.) Dr. Suma Biradar Assoc. Professor (GPB) Dr. Uday G. Asst. Professor (GPB) Sri. S.V. Kulkarni Technical Officer Sri. S.M. Ghatanatti Technical Officer

4) Lodging management for enhancing yield in dicoccum wheat using potential plant growth regulator.

Sl. No.	Crop/ Subject	Objective	Details of treatments	Methodology & Observations	Districts/ Locations	No. of trials	Cont d/New	Expected Date of Completion	Contact Scientist/s / Collaborators (Phone No.)
2.	Wheat (Dicoccum)	Lodging management for enhancing yield in dicoccum wheat using potential plant growth regulator	Treatment 1: Variety Gokak Local with the spray of Ethephon 30 ppm Treatment 2: Control: RPP	Lodging percentage Tiller count Plant height Grain yield Biomass Days to flowering	AEEC-MUDHOL-2 KVK BAGALKOT-2 AEEC BELGAUM-2 KVK TUKKANATTI-2 JDA BELGAUM-2 LSD-2	12	New	April, 2023	Dr. Kumar D. Lamani Professor (Agronomy) & Head AICRP on Wheat. 9611809833 Dr. G.M. Hegde Professor (Pl. Path.) Dr. Suma Biradar Assoc. Professor (GPB) Dr. Uday G. Asst. Professor (GPB) Sri. S.V. Kulkarni Technical Officer Sri. S.M. Ghatanatti Technical Officer

5)Effect of application of endophytic microorganisms in alleviation of salinity stress in coastal groundnut under residual soil moisture(Uttar Kannada District of Karnataka).

Crop/ Subject	Objective	Details of Treatments	Methodology & Observations	Districts/ locations	No. of trials	Contd./ New	Expected date of Completi on	Contact Scientists / Collaborators (Phone No.)
Coastal Groundn ut	To manage effect of salinity stress in coastal groundnut(Ut tar Kannada District of Karnataka) through endophytic microorganis ms.	T1 :Seed treatment with Endophyte 3 T2 :Control	Seed treatment with Endophyte 3. All other management practices would remain same for both treatments. Observations: Groundnut Dry Pod Yield and Haulm yield	KVK, Sirsi	2	NEW	<i>Rabi-</i> summer 2022-23	Dr. B. S. Yenagi Agronomist AICRP on Groundnut MARS, UAS, Dharwad Mobile : 9480724851 e-mail : yenagibs@uasd.in
				AECC, Kumata	2			
				JDA, Uttar Kannada	2			
				Total	6			

6) Precision nutrient management through rescheduling time of application for widely spaced sugarcane plant -ratoon system.

Sl. No.	Crop / Subject matter	Objectives	Details of the treatments	Methodology and observations	Districts / Locations	No. of trials / locations	Contd / New	Expected date of completion	Contact Scientist (Phone No.)
1	Sugarcane Crop production Precise nutrient management through rescheduling time of application for widely spaced sugarcane plant - ratoon system	To assess the effect of split application of N & K till advanced crop growth stages on nutrient use efficiency, crop growth, yield and quality.	T1: RDN (250kg/ha) + RDK(190kg/ha) in six splits T2 : Recommended dose and schedule of nutrient applications (250:75:190 kg N:P2O5: K2O ha-1)	Time of application: T1: Basal 10% and full dose of phosphorus @ 75 kg ha-1 remaining N and K at 45, 75, 90,120 and 150 DAP in equal splits T2: 10 % N basal and full dose of phosphorus and potassium , 20% N at 50 DAP, 30% at 90 DAP and 40% N at 120 DAP Note: FYM @ 25 t ha-1 applied in furrows before planting. Bio-fertilizers: Azospirillum and Phosphorus solubilizing bacteria (PSB) @ 10 kg ha-1 mixed through FYM. Micronutrients: Soil application of FeSO4 and ZnSO4 @ 25 kg ha-1 each is applied in common for both treatments Observations to be recorded Sugarcane yield (t/ha)	KVK, Tukanatti KVK, Mattikoppa JDA, Belagavi AEEC, Mudhol KVK Vijayapura KVK Indi KVK Bagalkote JDA, Bagalkote KVK, Hanamanmatti AEEC, Belagavi KVK DWD LSD by Scientist	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	New	2023	S. S. NOOLI Agronomist (Sugarcane) ARS,Sankeshwar M- 9448752119

7) Evaluation of Bio efficacy and phytotoxicity of ready mix post emergence herbicides against weeds in Sugarcane and its effect on succeeding crop

Sl. No.	Crop / Subject matter	Objectives	Details of the treatments	Methodology and observations	Districts / Locations	No. of trials / locations	Cont d / New	Expected date of completion	Contact Scientist (Phone No.)
1	Sugarcane Crop production Bioefficacy of ready mix post emergence herbicides against weeds in Sugarcane	To determine Bio-efficacy of ready mix post emergence herbicides against weed flora in sugarcane crop.	T₁ -2,4D Sodium salt 44% +Metribuzine 35%+Pyrazosulfuron ethyl 1.0% WDG (Ready mix) as PoE (weeds at 2-4 leaf stage) @ 3000 g ha ⁻¹ (6 gm liter ⁻¹) T₂ -Topramezone 10 g/l + Atrazine 300 g/l SC (Ready mix) as PoE (weeds at 2-4 leaf stage) @ 3000 ml ha ⁻¹ (6 ml liter ⁻¹) T₃ - Atrazine 50% WP (2000 g ha ⁻¹) (4 gm liter ⁻¹) as PE fb 2, 4 – D 80 % WP (2500 g ha ⁻¹) (5 gm liter ⁻¹) as PoE (RPP)	Time of application: When weeds are at 2-4 leaf stage) <i>Observations to be recorded</i> 1.Broad Leaf weed count at 40 DAHA and 2.Sugarcane yield (t/ha)	KVK, Tukanatti KVK, Mattikoppa JDA, Belagavi AEEC, Mudhol KVK Vijayapura KVK Indi KVK Bagalkote JDA, Bagalkote KVK, Hanamanmatti AEEC, Belagavi KVK DWD LSD by Scientist	1 1 1 1 1 1 1 1 1 1	New	2023	S. S. NOOLI Agronomist (Sugarcane) ARS,Sankeshwar M- 9448752119

TECHNICAL SESSION – II

Chairman :Dr. P. S. Hugar , Director of Extension, UAS, Dharwad

Co-chairman :Dr. R. B. Belli, Associate Director of Extension, Vijayapur

Rapporteur :Dr .Basamma Kumbar and Dr Sadhana R. Babar

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

Session started with welcome note by chairman and requested the ADE, Dharwad and ADE, Vijayapur and JDAs to present the results of the farm trials conducted during *Rabi* 2021-22.

JDA, Gadag presented the results of one farm trial out of allotted two farm trials to Gadag District. Farm trial on weed management in safflower was vitiated due to heavy rains during September and October months.

JDA, Bagalkote presented the results of one farm trial allotted to Bagalkote District on Management of shoot fly in wheat.

JDA, Belagavi presented the results of one farm trial allotted to Belagavi District on Management of shoot fly in wheat. Director of Extension, Dr. P. S. Hugar suggested to the presenter to include farmer's opinion.

Dr. Ravindra Belli, Associate Director of Extension, Vijayapur, presented the results of nine farm trials allotted to Zone 3. Out of nine farm trials two farm trials were on linseed which are from UAS, Raichur, the house suggested to present only the results of UAS, Dharwad farm trials. The seven farm trials were on,

1. Management of fall armyworm through seed dressers and formulations in *rabi* sorghum
2. Management of shoot fly in wheat
3. Management of fall army worm through seed treatment in maize
4. Management of fall army worm in maize through foliar sprays
5. Management of fall army worm in maize through novel molecules
6. Weed management in safflower
7. PGR's and nutrient management for yield improvement in chickpea

Dr. P. S. Hugar, Associate Director of Extension, UAS, Dharwad presented the results of seven Farm Trials conducted in Zone 8, 9 and 10.

1. Weed management in safflower
2. PGR's & nutrients for enhancing the productivity in chickpea
3. Management of fall armyworm through seed dressers and sprayable formulations in *Rabi* sorghum
4. Management of shoot fly in wheat
5. Management of fall armyworm through seed treatment in maize
6. Management of fall armyworm in maize through foliar sprays
7. Management of fall armyworm (FAW) in maize through novel molecules

After completion of the session chairman, Dr. P. S. Hugar, Associate Director of Extension, Dharwad thanked all the presenters and participants.

TECHNICAL SESSION – III

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

Co Chairman: Dean (Student Welfare), UAS, Dharwad

Rapporteurs: Dr. Prakash H. T. And Dr (Mrs). Prema G. U.

Release Proposal and Modification to POP Rabi 2020-21

The chairman of the session extended warm welcome to University officers and participants for the session and invited all the scientists to present their technologies for the approval. In this session, a total of 2 adoption proposals were presented and 1 one of them was accepted. 15 technologies were presented and 13 of them are accepted after thorough discussion and presentations and 2 technologies of were kept pending due to the incomplete process of registration/ gazette notification. There were no varietal release proposals. Director of Research instructed all the presenters involved in development of technologies to submit both hard and soft copies of the proposals including the posters (JPG format) before the finalization of the proceedings. The details of these accepted technologies are given below.

I. Adoption of Varieties Proposals

Genetics and Plant Breeding:

1. Adoption of Safflower variety “DSAF 1” for Zone 3 and Zone 8 of Karnataka

Pedigree: ASA-07* (A2*NARI-6) *NARI-6

Dr. Gopalakrishna K. Naidu presented the results on adoption of Safflower variety DSAF-1 for Zone 3 and Zone 8 of Karnataka. DSAF-1 (1802 kg/ha) recorded 19.6% & 17.9% higher seed yield over the national check A 1(1507 kg/ha) and Zonal check PBNS-12 (1528 kg/ha), respectively in Zone-I. DSAF-1 (517 kg/ha) recorded 19.7% & 17.0% higher oil yield over the National check A1 (432 kg/ha) and Zonal check PBNS-12 (442 kg/ha), respectively in Zone-I. DSAF -1 is moderately resistant to *Fusarium* wilt disease. The variety matures in 126 days and the plant height is about 78 cm. The variety is released for 4 states (Karnataka, Maharashtra, Telangana and Andhra Pradesh) and notified during January 2022. NBPGR, New Delhi has assigned IC639854 as National Identity to this variety. DSAF-1 variety was accepted for adoption by the house in Zone 3 and Zone 8 of Karnataka.

Director of Research suggested the Prof. and Univ. Head, GPB to take care of MLT & farm trial results before presenting in ZREAC in future. Director of Research suggested a popular name called **Annigeri Gold** for DSAF-1 variety.

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

Collaborators: Dr. Muktha N., Dr. Ashok Sajjan, Dr. Prabhavathi Rao, Dr. Sangshetty Balkunde, Dr. Ashok P. C., Dr. Rajendra A. Nandagavi, Dr. U. K. Shanwad, Dr. Kumar Lamani, Dr. G. Somangouda, and Dr. Basavarajappa M. P.

Horticulture:

2. Adoption of Rose varieties

Dr. S. G. Angadi brought the farm trial results of adoption of two rose varieties Arka Ivory, Arka Kinnari, the proposal was deferred by the house until gazette notification.

II. Modification to Package of Practices (PoP):

ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು- 2022 ಕೈಪಿಡಿಯಲ್ಲಿ ಸೇರಿಸಬೇಕಾದ ತಂತ್ರಜ್ಞಾನಗಳು

Agronomy:

1. Weed Management in Safflower

Dr. G. Somanagouda presented the results on weed management in safflower, the proposal was kept pending due to non availability of label claim of the chemical.

ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು

- ಬೆಳೆ: ಕುಸುಬೆ ಪುಟ ಸಂಖ್ಯೆ: 169
- ಕಳೆ ನಿರ್ವಹಣೆ :
- ಸೇರಿಸಬೇಕಾಗಿರುವುದು- ಬಿತ್ತನೆಯಾದ ದಿನ ಅಥವಾ ಮರುದಿನ ಪ್ರತಿ ಎಕರೆಗೆ 88 ಗ್ರಾಂ. ಸಲ್ಫಂಟ್ರಿಜೋನ್ 48% ಜಿ. 200 ಲೀ. ನೀರಿನಲ್ಲಿ ಬೆರಸಿ ಸಿಂಪಡಿಸಬೇಕು. 30 ದಿನಗಳ ನಂತರ ಅಂತರ ಬೇಸಾಯ ಮಾಡಬೇಕು.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಜಿ. ಸೋಮನಗೌಡ ಮತ್ತು ಡಾ. ಎಸ್. ಎಸ್. ನೂಲಿ

ಸಹ ಸಂಶೋಧಕರು: ಡಾ. ಅಶೋಕ ಸಜ್ಜನ, ಡಾ. ಆರ್. ಬಿ. ಬೆಳ್ಳಿ, ಡಾ.ಡಿ. ಡಬ್ಲ್ಯೂ. ರಾಜಶೇಖರ, ಡಾ.ಎಸ್. ಎನ್. ಜಾಧವ, ಡಾ.ಎಸ್. ಆರ್. ಸಲಕಿನ್ಕೊಪ್ಪ, ಡಾ. ಸಿ. ಎಮ್. ರಫಿ, ಡಾ.ಎಸ್. ಎ. ಬಿರಾದಾರ, ಡಾ. ಪ್ರಸನ್ನ ಕುಮಾರ ಬಿ.ಎಚ್., ಡಾ. ಮೌನೇಶ್ವರಿ ಕಮ್ಮಾರ, ಡಾ. ಶುಭಾ ಎಸ್., ಡಾ. ಆರ್. ಚನ್ನಕೇಶವ, ಡಾ. ಸಂಗಶೆಟ್ಟಿ, ಡಾ. ಜಿ. ಕೆ. ನಾಯ್ಡು, ಡಾ. ಶಾಲಿನಿ ಹುಯಿಲಗೋಳ, ಡಾ. ಹರ್ಷಿಯಾ ಬಾನು, ಡಾ. ಜಿ. ಎಸ್. ಯಡಳ್ಳಿ, ಡಾ. ವಿ. ಎಸ್. ದೇವರನವಡಗಿ, ಡಾ. ದಿನೇಶ್ ಕುಮಾರ ಎಸ್. ಪಿ., ಡಾ. ಎನ್. ಎಚ್. ಬಂಡಿ ಮತ್ತು ಲೇಟ್. ಡಾ. ಬಿ. ಸಿ. ಕಾಮಣ್ಣ

2. Organic nutrient management practices in sugarcane

Dr. S. S. Nooli presented organic farming practices in Sugarcane and it was accepted for PoP.

Addition to package of practices for the year 2022-23 Rabi for Zone 8 and 3

Organic nutrient management practices on the growth, yield of sugarcane and quality of jaggery

Sl. No.	Crop / subject matter	Proposal to be included	Modification to existing or new	Ref. to existing page No. of package of practice	Whether adequate research data is available		Data of farm trials		Collaborating scientists
					No. of years	Data	No. of years	Data	
1.	Sugarcane Crop production Organic nutrient management practices on the growth, yield of sugarcane and quality of jaggery	Enclosed	New	ಸಾವಯವ ಕೃಷಿ ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು ಪುಟ ಸಂ.: 38 14. ಕಬ್ಬು	3	Organic NMPs, N ₁ and N ₂ recorded significantly higher plant cane, ratoon cane and jaggery yield. The organic NMPs (N ₁ to N ₅) recorded higher dehydrogenase, urease and phosphatase enzyme activity after harvest in both plant and ratoon cane than RPP. The interactions, N ₁ C ₂ (132.4 and 122.4 t ha ⁻¹) and N ₂ C ₂ (130.4 and 121.5 t ha ⁻¹) recorded significantly higher cane yield in both plant(pooled of two years) and ratoon crops, respectively.	-	Accepted for direct inclusion in organic POP.	PI:S.S.Nooli Co PI: D.P.Biradar, L.H.Malligawad, Jones Nirmalnath, V.P.Chimmada, B.T.Nadagouda, S.B.Patil, C.R.Patil and Sourabh Munnolli

ಸಾವಯವ ಕೃಷಿ ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು

ಪುಟ ಸಂ.: ೩೮

೧೪. ಕಬ್ಬು

1. ತಳಿಗಳ ವಿವರ

ತಳಿಗಳು ಅವಧಿ (ತಿಂಗಳು) ನಾಟಿ ಮಾಡುವ ಕಾಲ

ಸಿಟಿಸಿ-671 ಅಲ್ಪಾವಧಿ (10-11) ಅಕ್ಟೋಬರ್ - ನವೆಂಬರ್

ಸಿಟಿ-92005 ಮಧ್ಯಮಾವಧಿ (12-14) ಅಕ್ಟೋಬರ್ - ನವೆಂಬರ್

ಸಿಟಿ-ಎಸ್.ಎನ್.ಕೆ.9211 ಅಲ್ಪಾವಧಿ (10-11) ಅಕ್ಟೋಬರ್ - ನವೆಂಬರ್, ಜುಲೈ- ಆಗಸ್ಟ್ (ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ಸಿಟಿ-ಎಸ್.ಎನ್.ಕೆ.7632 ಮಧ್ಯಮಾವಧಿ (12-14) ಜುಲೈ- ಆಗಸ್ಟ್

ಸಿಟಿ-ಎಸ್.ಎನ್.ಕೆ.7680 ಮಧ್ಯಮಾವಧಿ (12-14) ಅಕ್ಟೋಬರ್ - ನವೆಂಬರ್, ಜುಲೈ- ಆಗಸ್ಟ್

ಸಿಟಿ-ಎಸ್.ಎನ್.ಕೆ.7337 ಮಧ್ಯಮಾವಧಿ (12-14) ಅಕ್ಟೋಬರ್ - ನವೆಂಬರ್, ಜುಲೈ- ಆಗಸ್ಟ್

೨. ಸಾವಯವ ಗೊಬ್ಬರಗಳು

ಕೊಟ್ಟಿಗೆಗೊಬ್ಬರ ೧೫.೫ ಟನ್

ಎರೆಹುಳು ಗೊಬ್ಬರ ೨.೦ ಟನ್

ಸಂಪದ್ಧರಿತಗೊಳಿಸಿದ ಮಿಶ್ರ ಗೊಬ್ಬರ ೨.೦ ಟನ್

ಬೆಳೆಯ ಜೊತೆಗೆ ಸ್ಥಳದಲ್ಲಿಯೇ ೨.೦ ಟನ್

ಬೆಳೆದ ಹಸಿರಲೆ ಗೊಬ್ಬರ

ಬೇವಿನಹಿಂಡಿ ೨೦೦ ಕಿ. ಗ್ರಾಂ (ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ಅಥವಾ (ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ಕೊಟ್ಟಿಗೆಗೊಬ್ಬರ 15.5 ಟನ್

ಎರೆಹುಳು ಗೊಬ್ಬರ 4 ಟನ್

ಬೆಳೆಯ ಜೊತೆಗೆ ಸ್ಥಳದಲ್ಲಿಯೇ ಬೆಳೆದ ಹಸಿರಲೆ ಗೊಬ್ಬರ 8 ಟನ್

ಬೇವಿನಹಿಂಡಿ ೨೦೦ ಕಿ. ಗ್ರಾಂ

ಅಥವಾ

ಅಮೂಲ್ಯಸಾರ: 3500 ಲೀಟರ್ (875 ಲೀ 15 ದಿನಗಳ ಅಂತರದಲ್ಲಿ 135 ರಿಂದ 180 ದಿನಗಳವರೆಗೆ)

ಅಥವಾ

ಜೀವಾಮೃತ (ಪ್ರತಿ ಬಾರಿಗೆ 200 ಲೀ. ನಂತೆ 5 ಬಾರಿ) 1000 ಲೀಟರ್

೩. ಜೈವಿಕಗೊಬ್ಬರ

ಅಜೋಸ್ಪೈರಿಲಂ ೪.೦ ಕಿ. ಗ್ರಾಂ

ರಂಜಕಕರಗಿಸುವಗೊಬ್ಬರ ೪.೦ ಕಿ. ಗ್ರಾಂ

ಟ್ರೈಕೋಡರ್ಮಾ ಹಾರ್ಜಿಯಾನಮ್ ೨.೦ ಕಿ. ಗ್ರಾಂ

೪. ಬೀಜೋಪಚಾರ

(ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ಗ್ಲೋಕೋನೋವಿಸೇಟೊಬ್ಯಾಕ್ಟರ 1.6 ಲೀ ಅಥವಾ ಬೀಜಾಮೃತ(ಪ್ರತಿ ಸಮಯಕ್ಕೆ ೨೦೦ ಲೀ. ನಂತೆ ೫ ಬಾರಿ) ೧೦೦ ಲೀ.

5 ಎಲಿಗಳ ಮೇಲೆ ಸಿಂಪರಣೆ: (ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ಗ್ಲೋಕೋನೋವಿಸೇಟೊಬ್ಯಾಕ್ಟರ 50 ಮಿ.ಲೀ/ ಲೀಟರ್ 30 ದಿನಗಳ ನಂತರ ಸಿಂಪರಣೆ ಮತ್ತು ಪಂಚಗವ್ಯ 30 ಮಿ.ಲೀ/ ಲೀಟರ್ 60

ಮತ್ತು 90 ದಿನಗಳ ನಂತರ ಸಿಂಪರಣೆ

ನಾಟಿ ಮಾಡುವುದು:

ಬಿತ್ತನೆಗೆ ಭೂಮಿ ಸಿದ್ಧಮಾಡಿ, ಬೋದು ಸಾಲುಗಳನ್ನು ಬಿಟ್ಟು ನಂತರ ಶಿಫಾರಸ್ಸುಮಾಡಿದ ಕೊಟ್ಟಿಗೆಗೊಬ್ಬರ, ಜೊತೆಗೆ 4 ಕಿ. ಗ್ರಾಂ

ಅಜೋಸ್ಪೈರಿಲಂ 4 ಕಿ. ಗ್ರಾಂ ರಂಜಕ ಕರಗಿಸುವ ಮತ್ತು ಟ್ರೈಕೋಡರ್ಮಾ ಹಾರ್ಜಿಯಾನಮ್ 2.0 ಕಿ. ಗ್ರಾಂ

ಜೈವಿಕಗೊಬ್ಬರವನ್ನು ಸಾಲುಗಳಲ್ಲಿ ಹಾಕಿಮಣ್ಣಿನಲ್ಲಿ ಬೆರೆಸಬೇಕು. 120 ಸೆಂ.ಮೀ. ಅಂತರದ ಸಾಲುಗಳಲ್ಲಿ ನೀರು ಬಿಟ್ಟು ನಾಟಿ ಮಾಡಬೇಕು. ನಾಟಿ ಮಾಡುವ ಪೂರ್ವದಲ್ಲಿ ಸಾಲಿನ ಒಂದು ಮಗ್ಗಲು ಸಣಬನ್ನು ಅಥವಾ ಡೈಂಚಾ ಬಿತ್ತಿ.(ಸೇರಿಸಬೇಕಾಗಿದ್ದು) ಬೆಳೆ 45 ರಿಂದ 50 ದಿನಗಳಾದ ಮೇಲೆ ಮುರಿದು ಸಾಲಿನಲ್ಲಿ ಹಾಕಿ ಬೋದು ಹೊಡೆದು ಮುಚ್ಚಬೇಕು. ಬಿತ್ತಿದ 30, 60, ಮತ್ತು 90 ದಿನಗಳ ನಂತರ ಕೈಗಳೆ ತೆಗೆದು, ಎಡೆಕುಂಟೆಯಿಂದ ಹಗುರವಾಗಿ ಕುಂಟೆ ಹಾಯಿಸಿ ಕಳೆ ನಿಯಂತ್ರಣ ಮಾಡಬೇಕು. ಕ್ರಮವಾಗಿ 2 ಟನ್ ಎರೆಗೊಬ್ಬರ 90 ಮತ್ತು 120 ದಿನಕ್ಕೆ ಹಾಕಿ 120 ದಿನಗಳಲ್ಲಿ ಆಳವಾಗಿ ಹರಗಿ ನಂತರ ಎರಡು ಮಗ್ಗಲು ಮಣ್ಣು ಏರುವಂತೆ ಮಾಡಬೇಕು. ಅಥವಾ ಅಮೂಲ್ಯಸಾರವನ್ನು ಬಳಸಿದರೆ 90 ಮತ್ತು 120 ದಿನಕ್ಕೆ 1.25 ಟನ್ ರಂತೆ (ಸೇರಿಸಬೇಕಾಗಿದ್ದು) ಎರೆಗೊಬ್ಬರ ಸಾಲುಗಳಲ್ಲಿ ಹಾಕಿ ಮಣ್ಣು ಏರುವಂತೆ ಮಾಡಬೇಕು.

ಪೋಷಕಾಂಶಗಳ ನಿರ್ವಹಣೆ

- ಕಬ್ಬಿನ ಬೀಜದ ತುಂಡುಗಳನ್ನು ನಾಟಿ ಮಾಡುವ ಮೊದಲು ೫ ಗ್ರಾಂಟ್ರುಕ್ಯೋಡರ್ಮಾವನ್ನು ಪ್ರತಿಲೀಟರ್ ಬೀಜಾಮೃತದೊಡನೆ ಬೆರೆಸಿ ೫ ನಿಮಿಷ ನೆನೆಸಿ ನಂತರ ನಾಟಿ ಮಾಡಬೇಕು. ಅಥವಾ ಕಬ್ಬಿನ ಬೀಜದ ತುಂಡುಗಳನ್ನು ನಾಟಿ ಮಾಡುವ ಮೊದಲು ಗ್ಲೋಕೋನೂವಿಸೇಟೊಬ್ಯಾಕ್ಟರ 1.6 ಲೀ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀಟರ್ ನೀರನ್ನು ಬಳಸಿ 30 ನಿಮಿಷ ನೆನೆಸಿ ನಂತರ ನಾಟಿ ಮಾಡಬೇಕು.(ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ನಾಟಿ ಮಾಡುವ ದಿನ ಮತ್ತು ತದನಂತರ ಪ್ರತಿ ೨ ತಿಂಗಳಿಗೊಮ್ಮೆ ೮ ತಿಂಗಳವರೆಗೆ ಎಕರೆಗೆ ೨೦೦ ಲೀಟರ್ ಜೀವಾಮೃತವನ್ನು ನೆಲದ ಮೇಲೆ ಸಿಂಪಡಿಸಿ ಅಥವಾ ನೀರಿನೊಡನೆ ಬೆರೆಸಿ ನೀರು ಹಾಯಿಸಬೇಕು ಅಥವಾ ಅಮೂಲ್ಯಸಾರವನ್ನು ಬಳಸಿದರೆ ಪ್ರತಿ ಬಾರಿ 875 ಲೀ 15 ದಿನಗಳ ಅಂತರದಲ್ಲಿ ಬೆಳೆಯ ಅವಧಿ 135 ರಿಂದ 180 ದಿನಗಳವರೆಗೆ ನೀರಿನೊಡನೆ ಬೆರೆಸಿ ನೀರು ಹಾಯಿಸಬೇಕು.(ಸೇರಿಸಬೇಕಾಗಿದ್ದು)

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಎಸ್.ಎಸ್. ನೂಲಿ

ಸಹ ಸಂಶೋಧಕರು: ಡಿ.ಪಿ. ಬಿರಾದಾರ, ಎಲ್.ಎಚ್. ಮಲ್ಲಿಗವಾಡ, ವಿ.ಪಿ.ಚಿಮ್ಮಡ, ಜೋನ್ಸ್ ನಿರ್ಮಲನಾಥ, ಎಸ್.ಬಿ.ಪಾಟೀಲ, ಬಿ.ಟಿ.ನಾಡಗೌಡ, ಸಿ.ಆರ್. ಪಾಟೀಲ ಮತ್ತು ಸೌರಭ ಮುನ್ನೋಳಿ

3. Chickpea variety:JAKI-9218 for organic farming and Wheat variety:UAS-446 for organic farming

Dr. U. K. Shanwad presented the results for the adoption of chickpea variety JAKI-9218, also wheat variety US-446 for zone-8 under organic farming and they were accepted.

ಸಾವಯವ ಕೃಷಿ ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು

ಅಗಸ್ಟ್ 2021

ಕಡಲೆ ಪು.ಸಂ. 24

ಸೇರಿಸಬೇಕಾದ ವಿಷಯ: ತಳಿಗಳ ವಿವರದಲ್ಲಿ

ತಳಿಗಳು	ವಲಯ ಮತ್ತು ಸನ್ನಿವೇಶ	ಬಿತ್ತನೆ ಕಾಲ	ಅವಧಿ ಹಾಗೂ ವಿಶೇಷತೆ
ಜಾಕಿ 9218	8 (ಮಳೆಯಾಶ್ರಿತ)	ಅಕ್ಟೋಬರ್ -ನವೆಂಬರ್	95-100 ದಿನಗಳು
UAS- 446	8 (ಮಳೆಯಾಶ್ರಿತ)	ಅಕ್ಟೋಬರ್ (1-15 ರ ವರೆಗೆ)	95-100 ದಿನಗಳು

Principal Investigators: Dr. S. A. Gaddanakeri, Dr. L. H. Malligawad and Dr. U. K. Shanwad

Collaborators: Dr. Manjunath Hebbara, Dr. Shekharappa, Dr. Gurudatt M. Hegde, Dr. C. R. Patil, Dr. Vijayakumar Giritammannavar, Dr. H. B. Babalad, Dr. Sadana Babar, Smt. Anuradha Desai and Ms. Anusha Belikeri

4. Natural farming practices in Groundnut variety DH256 & Black gram variety DU-1

Dr. S. A. Gaddanakeri presented new natural farming practices in Groundnut variety DH256 & Blackgram variety DU-1 for Zone-8 during summer to include in natural farming PoP. DR opined

to include these chapters in the existing organic farming practices book. House also accepted to include RA/SRF's names as collaborators in the accepted technologies.

ನೈಸರ್ಗಿಕ ಕೃಷಿಯಲ್ಲಿ ವಿವಿಧ ಬೆಳೆಗಳ ಬೇಸಾಯ ಕ್ರಮಗಳು

ಶೇಂಗಾ

ಶೇಂಗಾ ಕರ್ನಾಟಕದ ವಿವಿಧ ಮಣ್ಣು ಮತ್ತು ಹವಾಮಾನಗಳಲ್ಲಿ ಬೆಳೆಯುವ ಮುಖ್ಯ ಎಣ್ಣೆಕಾಳು ಬೆಳೆ, ಬೆಳೆ ಇಳುವರಿ ಮುಖ್ಯವಾಗಿ ಮಳೆಯ ಪ್ರಮಾಣ, ರೋಗ, ಕೀಟ ಮತ್ತು ಕಳೆನಿಯಂತ್ರಣದ ಮೇಲೆ ಅವಲಂಬಿತವಾಗಿದೆ. ರೋಗ ಮತ್ತು ಕೀಟ ನಿರೋಧಕ ತಳಿಗಳ ಆಯ್ಕೆ ಇಳುವರಿ ಮೇಲೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ.

ತಳಿಗಳ ವಿವರ

ತಳಿಗಳು	ವಲಯ ಮತ್ತು ಸನ್ನಿವೇಶ	ಬಿತ್ತನೆಯ ಕಾಲ	ಅವಧಿ (ದಿನಗಳು)
ಡಿ.ಎಚ್-256	ವಲಯ 8, ಬೇಸಿಗೆ	ಡಿಸೆಂಬರ್ ಕೊನೆವಾರದಿಂದ ಜನವರಿ ಕೊನೆವಾರದವರೆಗೆ	110-115

ಬೇಸಾಯ ಸಾಮಗ್ರಿಗಳು (ಪ್ರತಿ ಎಕರೆಗೆ)

ಬೀಜ : 60 ಕಿ.ಗ್ರಾಂ

ನೈಸರ್ಗಿಕ ಕೃಷಿ ಪರಿಕರಗಳು

ಬೀಜಾಮೃತ : 10 ಲೀ

ಘನಜೀವಾಮೃತ : 400 ಕಿ. ಗ್ರಾಂ

ಜೀವಾಮೃತ : 1000 ಲೀ (ಪ್ರತಿ ಸಾರಿ 200 ಲೀ. ನಂತೆ 5 ಬಾರಿ)

ಬೆಳೆಯುಳಿಕೆ : 2 ಟನ್

ಬಿತ್ತನೆ

ಶಿಫಾರಸ್ಸು ಮಾಡಿದ ಪ್ರಮಾಣದ ಬೀಜಗಳಿಗೆ ಬಿತ್ತನೆಯ ದಿನದಂದು ಬೀಜಾಮೃತವನ್ನು ಬೀಜಗಳ ಮೇಲೆ ಚಿಮುಕಿಸಿ ಲೇಪನ ಮಾಡಿ ನೆರಳಿನಲ್ಲಿ ಒಣಗಿಸಬೇಕು. ಬೀಜಗಳ ಮೇಲಿನ ಸಿಪ್ಪೆ ಬಿಚ್ಚದಂತೆ ಮುಂಜಾಗ್ರತಾ ಕ್ರಮ ವಹಿಸಬೇಕು. ಬೀಜಾಮೃತದಲ್ಲಿ ಉಪಚಾರ ಮಾಡಿದ ಬೀಜವನ್ನು 30 ಸೆಂ. ಮೀ. ಅಂತರದ ಸಾಲುಗಳಲ್ಲಿ ಬಿತ್ತನೆ ಮಾಡಬೇಕು. ಬಿತ್ತನೆಯ ಸಮಯದಲ್ಲಿ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಕಿ.ಗ್ರಾಂ ಘನಜೀವಾಮೃತವನ್ನು ಮೂಲ ಗೊಬ್ಬರವಾಗಿ ಒದಗಿಸಬೇಕು. 30 ದಿನಗಳ ನಂತರ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಕಿ.ಗ್ರಾಂ ಘನಜೀವಾಮೃತವನ್ನು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ಕೊಟ್ಟು, ಅಂತರ ಬೇಸಾಯ ಮಾಡಬೇಕು. ಬಿತ್ತನೆಯಾದ 21 ದಿನಗಳ ನಂತರ ಪ್ರತಿ 21 ದಿನಗಳ ಅಂತರದಲ್ಲಿ ಎಕರೆಗೆ 200 ಲೀಟರನಂತೆ 5 ಬಾರಿ ಜೀವಾಮೃತವನ್ನು ತಯಾರಿಸಿ ಬೆಳೆಗಳ ಮತ್ತು ಮಣ್ಣಿನ ಮೇಲೆ ಸಿಂಪಡಿಸಬೇಕು ಅಥವಾ ಎರಚಬೇಕು.

ಜೀವಾಮೃತ ಮತ್ತು ಸಪ್ತಧಾನ್ಯ ಕಷಾಯದ ಸಿಂಪರಣೆ:

ಬಿತ್ತನೆ ಮಾಡಿದ 30 ದಿನಗಳಲ್ಲಿ ಶೇ. 5 ರ ಜೀವಾಮೃತವನ್ನು (15 ಲೀ. ಜೀವಾಮೃತವನ್ನು 285 ಲೀ. ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ), 50 ದಿನಗಳಲ್ಲಿ ಶೇ. 7.5 ರ (22.5 ಲೀ. ಜೀವಾಮೃತವನ್ನು 278.5 ಲೀ. ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ) ಮತ್ತು 70 ದಿನಗಳ ನಂತರ ಶೇ. 10 ರ ಜೀವಾಮೃತವನ್ನು (30 ಲೀ. ಜೀವಾಮೃತವನ್ನು 270 ಲೀ. ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ) ಚೆನ್ನಾಗಿ ಸೋಸಿ ಬೆಳೆಗಳ ಮೇಲೆ ಸಿಂಪಡಿಸಬೇಕು, ಪ್ರತಿ ಎಕರೆಗೆ 300 ಲೀಟರ ದ್ರಾವಣವನ್ನು ಬಳಸಬೇಕು.

ಶೇಂಗಾ ಬೆಳೆ + ಸಿರಿಧಾನ್ಯಗಳ ಅಂತರ ಬೆಳೆ ಪದ್ಧತಿಯಲ್ಲಿ ಸಿರಿಧಾನ್ಯಗಳ ಕಟಾವಿನ 15 ದಿನಗಳ ಮೊದಲು ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀ. ಸಪ್ತಧಾನ್ಯ ಕಷಾಯವನ್ನು ಪರಿಕರಗಳ ತಯಾರಿಕೆಯಲ್ಲಿ ತಿಳಿಸಿದಂತೆ ತಯಾರಿಸಿ ಬೆಳೆಗಳಿಗೆ ಸಿಂಪಡಿಸಬೇಕು. ಇದರಿಂದ ಕಾಳುಗಳು ಜೊಳ್ಳಾಗುವುದಿಲ್ಲ ಮತ್ತು ಕಾಳಿನ ತೂಕ ಹೆಚ್ಚಾಗಿ ಕಾಳಿಗೆ ಹೊಳಪು ಬರುತ್ತದೆ.

ಕಳೆ ನಿಯಂತ್ರಣ

ಬಿತ್ತನೆ ಮಾಡಿದ 20 ಮತ್ತು 40 ದಿವಸಗಳ ನಂತರ ಎಡೆಕುಂಟೆ ಹಾಯಿಸಿ ನಂತರ ಎರಡುಬಾರಿ ಕೈಕಸ ತೆಗೆದು, ಬೆಳೆಯುಳಿಕೆಗಳನ್ನು ಸಾಲುಗಳ ಮಧ್ಯೆ ಹೊದಿಕೆ ಮಾಡುವುದರಿಂದ ಕಳೆಗಳನ್ನು ನಿಯಂತ್ರಣ ಮಾಡಬಹುದು.

ಶೇಂಗಾ + ಸಿರಿಧಾನ್ಯ ಅಂತರಬೆಳೆ ಪದ್ಧತಿಗಳು

ವಲಯ 8 ರ ಕೆಂಪು ಮಣ್ಣಿನಲ್ಲಿ ಶೇಂಗಾ ಬೆಳೆಯಲ್ಲಿ ಸಿರಿಧಾನ್ಯ ಬೆಳೆಗಳನ್ನು ಅಂತರ ಬೆಳೆಯಾಗಿ ಬೆಳೆದಲ್ಲಿ ಹೆಚ್ಚು ನಿವ್ವಳ ಲಾಭ ಪಡೆಯಬಹುದು.

ಶೇಂಗಾವನ್ನು ಅಂತರ ಬೆಳೆಯಾಗಿ ಬೆಳೆಯುವಾಗ ಶಿಫಾರಸ್ಸು ಮಾಡಿದ ಶೇಂಗಾ ಬೀಜಗಳನ್ನು ಬಿತ್ತನೆಯ ದಿನದಂದು ಬೀಜಾಮೃತವನ್ನು ಬೀಜಗಳ ಮೇಲೆ ಚಿಮುಕಿಸಿ ಲೇಪನ ಮಾಡಿ ನೆರಳಿನಲ್ಲಿ ಒಣಗಿಸಬೇಕು. ಬೀಜಗಳ ಮೇಲಿನ ಸಿಪ್ಪೆ ಬಿಚ್ಚದಂತೆ ಮುಂಜಾಗ್ರತಾ ಕ್ರಮ ವಹಿಸಬೇಕು. ಶಿಫಾರಸ್ಸು ಮಾಡಿದ ಪ್ರಮಾಣದ ಸಿರಿಧಾನ್ಯಗಳ ಬೀಜಗಳನ್ನು ಬೀಜಾಮೃತದಲ್ಲಿ ಹತ್ತು ನಿಮಿಷಗಳ ಕಾಲ ನೆನೆಸಿ ನೆರಳಿನಲ್ಲಿ ಒಣಗಿಸಬೇಕು. ಬಿತ್ತನೆಯ ಸಮಯದಲ್ಲಿ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಕಿ.ಗ್ರಾಂ ಘನಜೀವಾಮೃತವನ್ನು ಮೂಲ ಗೊಬ್ಬರವಾಗಿ ಕೊಡಬೇಕು. 30 ದಿನಗಳ ನಂತರ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಕಿ. ಗ್ರಾಂ ಘನಜೀವಾಮೃತವನ್ನು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ಒದಗಿಸಿ ಅಂತರಬೇಸಾಯ ಮಾಡಬೇಕು. ಬಿತ್ತನೆಯಾದ 21 ದಿನಗಳ ನಂತರ, ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀಟರ ನಂತೆ 21 ದಿನಗಳ ಅಂತರದಲ್ಲಿ 5 ಸಾರಿ ಜೀವಾಮೃತವನ್ನು ಬೆಳೆಗಳ ಮತ್ತು ಮಣ್ಣಿನ ಮೇಲೆ ಎರಚಬೇಕು.

ಈ ಕೆಳಗಿನ ಸಿರಿಧಾನ್ಯ ಬೆಳೆಗಳನ್ನು ಶೇಂಗಾ ಬೆಳೆ ಜೊತೆಗೆ ಅಂತರ ಬೆಳೆಗಳಾಗಿ ಬೆಳೆಯುವುದು ಲಾಭದಾಯಕ.

1. ಶೇಂಗಾ (4 ಸಾಲು) + ರಾಗಿ/ಕೊರಲೆ/ಹಾರಕ(2 ಸಾಲು) (4:2) ಸಿರಿಧಾನ್ಯ ಅಂತರ ಬೆಳೆ

ಬೀಜಾಮೃತದಲ್ಲಿ ಉಪಚಾರ ಮಾಡಿದ ಶೇಂಗಾವನ್ನು (40 ಕಿ. ಗ್ರಾಂ) ನಾಲ್ಕು ಸಾಲು ಮತ್ತು ಎರಡು ಸಾಲು ರಾಗಿ, ಅಥವಾ 2 ಸಾಲು ಕೊರಲೆ ಅಥವಾ 2 ಸಾಲು ಹಾರಕ ಸಿರಿಧಾನ್ಯಗಳನ್ನು ಬೀಜವನ್ನು (1.50 ಕಿ. ಗ್ರಾಂ) 30 ಸೆಂ. ಮೀ. ಅಂತರದ ಸಾಲುಗಳಲ್ಲಿ ಬಿತ್ತನೆ ಮಾಡಬೇಕು.

ಸೂಚನೆ: ನೈಸರ್ಗಿಕ ಕೃಷಿಯ ಬೇಸಾಯದಲ್ಲಿ, ಶೇಂಗಾ + ಸಿರಿಧಾನ್ಯ ಅಂತರ ಬೆಳೆ ಪದ್ಧತಿಗೆ, ಇಡೀ ಶೇಂಗಾ ಬೆಳೆಗೆ ಅನುಸರಿಸಿದ ನೈಸರ್ಗಿಕ ಕೃಷಿಯ ಬೇಸಾಯ ಕ್ರಮಗಳನ್ನೇ ಅನುಸರಿಸಬೇಕು

ಮುಖ್ಯವಾದ ಕೀಟಗಳು

ಥ್ರಿಪ್ಸ್, ಜಿಗಿಹುಳು, ಸುರುಳಿಪೂಚಿ, ಸ್ಪೊಡೋಪ್ಟೆರಾ ಕೀಡೆ ಹಾಗೂ ಕೆಂಪು ತಲೆ ಕಂಬಳಿ ಹುಳು.

ನಿರ್ವಹಣೆ

- ಥ್ರಿಪ್ಸ್ ಹಾಗೂ ಜಿಗಿಹುಳುಗಳ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀ. ನೀಮಾಸ್ತ್ರವನ್ನು ಸಿಂಪಡಿಸಬೇಕು.
- ಸ್ಪೊಡೋಪ್ಟೆರಾ ಕೀಡೆಯ ತತ್ತಿ ಹಾಗೂ ಕೀಡೆಗಳ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಎಕರೆಗೆ 6 ಲೀ. ಬ್ರಹ್ಮಾಸ್ತ್ರವನ್ನು ಪ್ರತಿ 200 ಲೀ. ನೀರಿನಲ್ಲಿ (30 ಮಿ.ಲೀ ಪ್ರತಿ ಲೀ ನೀರಿನಲ್ಲಿ) ಬೆರೆಸಿ ಸಿಂಪಡಿಸಬೇಕು.
- ಸುರುಳಿಪೂಚಿ ಹಾಗೂ ಕೆಂಪು ತಲೆ ಕಂಬಳಿ ಹುಳುವಿನ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಎಕರೆಗೆ 6 ಲೀ. ದಶಪರ್ಣಿ ಕಷಾಯ ಅಥವಾ ಅಗ್ನಿ ಅಸ್ತ್ರವನ್ನು ಪ್ರತಿ 200 ಲೀ. ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ ಸಿಂಪಡಿಸಬೇಕು. ಕೀಡೆಗಳು ಮತ್ತೆ ಕಂಡು ಬಂದಲ್ಲಿ ಇದೇ ಸಿಂಪರಣೆಯನ್ನು ಮುಂದುವರಿಸಬೇಕು.

ಪ್ರಮುಖ ರೋಗಗಳು

ಕುಡಿ ಸಾಯುವ ನಂಜು ರೋಗ, ಎಲೆ ಚುಕ್ಕೆ ರೋಗ ಮತ್ತು ತುಕ್ಕು ರೋಗ.

ನಿರ್ವಹಣೆ

- ಕುಡಿ ಸಾಯುವ ನಂಜು ರೋಗಕ್ಕೆ ತುತ್ತಾದ ಸಸ್ಯಗಳನ್ನು ಪ್ರಾರಂಭದ ಹಂತದಲ್ಲಿಯೇ ಗುರುತಿಸಿ, ಕಿತ್ತು ಮಣ್ಣಿನಲ್ಲಿ ಹೂಳಬೇಕು. ಈ ರೋಗವು ವಾಹಕಗಳ ಮೂಲಕ ಹರಡುವುದರಿಂದ ಇದರ ಹತೋಟಿಗೆ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀ. ಪ್ರಮಾಣದಲ್ಲಿ ನೀಮಾಸ್ತ್ರವನ್ನು ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.
- ಎಲೆ ಚುಕ್ಕೆ ರೋಗ ಮತ್ತು ತುಕ್ಕು ರೋಗಗಳ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಲೀ. ನೀರಿಗೆ 15 ಮಿ.ಲೀ ಶುಂಠಿ ಅಸ್ತ್ರ ಅಥವಾ ಎಕರೆಗೆ 200 ಲೀ. ಕಾಡಕುಳ್ಳಿನ ಕಷಾಯ ಅಥವಾ 25 ಮಿ.ಲೀ. ಹುಳಿಮಜ್ಜಿಗೆಯ ಜೊತೆಗೆ 35 ಮಿ.ಲೀ. ದೇಸಿ ಗೋಮೂತ್ರವನ್ನು ಬೆರೆಸಿ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.

ಇಳುವರಿ (ಪ್ರತಿ ಎಕರೆಗೆ)

ಕಾಯಿ: 11-12 ಕ್ಲಿಂ.

ಹೊಟ್ಟು: 13-14 ಕ್ಲಿಂ.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಸಿ. ಪಿ. ಚಂದ್ರಶೇಖರ

ಸಹ ಸಂಶೋಧಕರು: ಡಾ. ಎಸ್. ಬಿ.ಮಂಜುನಾಥ, ಡಾ.ಭೀಮನಗೌಡ.ಬಿ. ಪಾಟೀಲ, ಡಾ. ಸಿ. ಪಿ. ಸಂಕಲ್ಪ, ಡಾ. ವಿ. ಪಿ. ಗಿರೀಶ, ಡಾ. ಕೆ. ಎನ್. ಬಸವೇಶ, ಡಾ. ನಾಗರಾಜ ತಕ್ಕುಣ್ಣವರ, ಶಿವನಗೌಡ, ಡಾ. ಬಿ. ಕಾಂಚನಶ್ರೀ, ಡಾ. ಚಿದಾನಂದ ಪಿ. ಮನ್ಸೂರ, ಡಾ. ಶೇಖರಪ್ಪ, ಡಾ. ಚನ್ನಕೇಶವ, ಆರ್., ಡಾ. ಶ್ರೀಪಾದ ಕುಲಕರ್ಣಿ, ಡಾ. ಬಲ್ಲೊಳ ಗುರುಪಾದ, ಡಾ.ಸಿ.ಆರ್. ಪಾಟೀಲ್, ಡಾ. ಗೀತಾ ಗೌಡರಮತ್ತುಡಾ. ಮಂಜುನಾಥ ಹೆಬ್ಬಾರ

ಉದ್ದು

ಉದ್ದು ಉತ್ತರ ಕರ್ನಾಟಕದ ಮುಖ್ಯವಾದ ದ್ವಿದಳ ಧಾನ್ಯದ ಬೆಳೆಯಾಗಿದ್ದು ಇದನ್ನು ಬೀದರ್, ಕಲಬುರ್ಗಿ, ಬೆಳಗಾವಿ, ಧಾರವಾಡ ಮತ್ತು ಹಾವೇರಿ ಜಿಲ್ಲೆಗಳಲ್ಲಿ ಬೆಳೆಯಲಾಗುತ್ತಿದೆ. ಸುಮಾರು 80 ದಿನಗಳಲ್ಲಿ ಕೊಯ್ಲಿಗೆ ಬರುವುದರಿಂದ ಎರಡು ಬೆಳೆ ಪಡೆಯುವ ಸಂದರ್ಭದಲ್ಲಿ ಹೆಚ್ಚು ಪ್ರಯೋಜನಕಾರಿ. ಹೆಚ್ಚಾಗಿ ಮಳೆಯಾಶ್ರಯದಲ್ಲಿ ಬೆಳೆಯಲಾಗುತ್ತಿದ್ದು, ಬೇಸಿಗೆಯಲ್ಲೂ ಬೆಳೆಯಬಹುದು. ಇದು ದ್ವಿದಳ ಜಾತಿಗೆ ಸೇರಿರುವುದರಿಂದ ಒಂದು ಉತ್ತಮ ಕಾಲಗೈ ಬೆಳೆಯಾಗಿದ್ದು, ನೈಸರ್ಗಿಕ ಕೃಷಿ ಪದ್ಧತಿಯಲ್ಲಿ ಬೆಳೆಯಲು ಸೂಕ್ತವಾಗಿದೆ.

ತಳಿಗಳ ವಿವರ

ತಳಿಗಳು	ವಲಯ ಮತ್ತು ಸನ್ನಿವೇಶ	ಬಿತ್ತನೆಯ ಕಾಲ	ಅವಧಿ(ದಿನಗಳು) ವಿಶೇಷತೆ
ಡಿ ಯು- 1	ವಲಯ 8 -ಬೇಸಿಗೆ	ಡಿಸೆಂಬರ್‌ನಿಂದ ಜನವರಿ ಕೊನೆಯವರೆಗೆ	80-85

ಬೇಸಾಯ ಸಾಮಗ್ರಿಗಳು (ಪ್ರತಿ ಎಕರೆಗೆ)

ಬೀಜ : 6-7 ಕಿ.ಗ್ರಾಂ

ನೈಸರ್ಗಿಕ ಕೃಷಿ ಗೊಬ್ಬರಗಳು

ಬೀಜಾಮೃತ : 5 ಲೀ.

ಘನಜೀವಾಮೃತ : 400 ಕಿ.ಗ್ರಾಂ

ಜೀವಾಮೃತ : 600 ಲೀ (ಪ್ರತಿ ಸಾರಿ 200 ಲೀ. ನಂತೆ 3 ಬಾರಿ)

ಬೆಳೆಯುಳಿಕೆ : 2 ಟನ್

ಬಿತ್ತನೆ:

ಶಿಫಾರಸ್ಸು ಮಾಡಿದ ಪ್ರಮಾಣದ ಬೀಜಗಳನ್ನು ಬೀಜಾಮೃತದಲ್ಲಿ ಹತ್ತು ನಿಮಿಷಗಳ ಕಾಲ ನೆನೆಸಿ ನೆರಳಿನಲ್ಲಿ ಒಣಗಿಸಿ, 30 ಸೆಂ. ಮೀ. ಸಾಲುಗಳ ಅಂತರದಲ್ಲಿ ಬಿತ್ತನೆ ಮಾಡಬೇಕು. ಬಿತ್ತನೆಯ ಸಮಯದಲ್ಲಿ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಕಿ.ಗ್ರಾಂ ಘನಜೀವಾಮೃತವನ್ನು ಮೂಲ ಗೊಬ್ಬರವಾಗಿ ಕೊಡಬೇಕು. 30 ದಿನಗಳ ನಂತರ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಕಿ. ಗ್ರಾಂ ಘನಜೀವಾಮೃತವನ್ನು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ಒದಗಿಸಿ ಅಂತರ ಬೇಸಾಯ ಮಾಡಬೇಕು. ಬಿತ್ತನೆಯಾದ 21 ದಿನಗಳ ನಂತರ, ಮೂರು ಸಾರಿ, 21 ದಿನಗಳ ಅಂತರದಲ್ಲಿ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀಟರ ನಂತೆ ಜೀವಾಮೃತವನ್ನು ಬೆಳೆಗಳ ಮತ್ತು ಮಣ್ಣಿನ ಮೇಲೆ ಎರಚಬೇಕು.

ಜೀವಾಮೃತದ ಸಿಂಪರಣೆ:

ಪ್ರತಿ ಎಕರೆಗೆ ಬಿತ್ತನೆ ಮಾಡಿದ 30 ದಿನಗಳ ನಂತರ ಶೇ. 5 ರ ಜೀವಾಮೃತ (15 ಲೀ ಜೀವಾಮೃತವನ್ನು 285 ಲೀ ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ) ಸಿಂಪಡಿಸಬೇಕು. ಮೊದಲನೆ ಸಿಂಪರಣೆಯ ನಂತರ 21 ದಿನಗಳಿಗೆ ಶೇ. 7.5 ರ (22.5 ಲೀ ಜೀವಾಮೃತವನ್ನು 278.5 ಲೀ ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ) ಮತ್ತು 70 ದಿನಗಳ ನಂತರ ಶೇ. 10 ರ (30 ಲೀ ಜೀವಾಮೃತವನ್ನು 270 ಲೀ ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ) ಜೀವಾಮೃತವನ್ನು ಚೆನ್ನಾಗಿ ಸೋಸಿ ಬೆಳೆಗಳ ಮೇಲೆ ಸಿಂಪಡಿಸಬೇಕು. ಸಿಂಪಡಿಸಲು ಎಕರೆಗೆ 300 ಲೀಟರ ದ್ರಾವಣವನ್ನು ಬಳಸಬೇಕು.

ಬೆಳೆ ಕಟಾವಿನ 10 ರಿಂದ 15 ದಿನಗಳ ಮೊದಲು ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀಟರ ಸಪ್ತಧಾನ್ಯ ಕಷಾಯವನ್ನು ಪರಿಕರಗಳ ತಯಾರಿಕೆಯಲ್ಲಿ ತಿಳಿಸಿದಂತೆ ತಯಾರಿಸಿ ಬೆಳೆಗಳಿಗೆ ಸಿಂಪಡಿಸಬೇಕು. ಇದರಿಂದ ಕಾಳುಗಳು ಜೊಳ್ಳಾಗುವುದಿಲ್ಲ ಮತ್ತು ಕಾಳಿನ ತೂಕ ಹೆಚ್ಚಾಗಿ ಕಾಳಿಗೆ ಹೊಳಪು ಬರುತ್ತದೆ.

ಕಳೆ ನಿಯಂತ್ರಣ:

ಬಿತ್ತನೆ ಮಾಡಿದ 20 ಮತ್ತು 40 ದಿವಸಗಳ ನಂತರ ಅಂತರ ಬೇಸಾಯ ಮಾಡಿ, ನಂತರ ಎರಡುಬಾರಿ ಕೈಕಸ ತೆಗೆದು ಬೆಳೆಗಳ ಉಳಿಕೆಗಳನ್ನು ಸಾಲುಗಳ ಮಧ್ಯೆ ದಪ್ಪನಾಗಿ ಅಚ್ಚಾದನೆ ಮಾಡುವುದರಿಂದ ಕಳೆಗಳನ್ನು ನಿಯಂತ್ರಣ ಮಾಡಬೇಕು.

ಮುಖ್ಯವಾದ ಕೀಟಗಳು

ಸಸ್ಯ ಹೇನು, ಫ್ಲೀಪ್ಸ್, ಎಲೆ ತಿನ್ನುವ ಹುಳು, ಕಾಯಿ ಕೊರೆಯುವ ಹುಳು, ಮೂತಿಹುಳು ಮತ್ತು ಕೊಂಬಿನ ಹುಳು.

ಕೀಟಗಳ ನಿರ್ವಹಣೆ

- ಸಸ್ಯ ಹೇನು ಹಾಗೂ ಥ್ರಿಪ್ಸ್ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀ. ಪ್ರಮಾಣದಲ್ಲಿ ನೀಮಾಸ್ತ್ರವನ್ನು ಸಿಂಪಡಿಸಬೇಕು.
- ಎಲೆ ತಿನ್ನುವ ಹುಳು, ಕಾಯಿ ಕೊರೆಯುವ ಹುಳು, ಮೂತಿಹುಳು ಮತ್ತು ಕೊಂಬಿನ ಕೀಡಗಳ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಎಕರೆಗೆ 6 ಲೀ. ಅಗ್ನಿ ಅಸ್ತ್ರ, ಬ್ರಹ್ಮಾಸ್ತ್ರ ಮತ್ತು ದಶಪರ್ಣಿ ಕಷಾಯವನ್ನು ಪ್ರತಿ 200 ಲೀ. ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ ಅನುಕ್ರಮದಲ್ಲಿ 10 ರಿಂದ 15 ದಿನಗಳ ಅಂತರದಲ್ಲಿ ಸಿಂಪಡಿಸಬೇಕು. ಕೀಡಗಳು ಮತ್ತೆ ಕಂಡು ಬಂದಲ್ಲಿ ಇದೇ ಸಿಂಪರಣೆಯನ್ನು ಮುಂದುವರಿಸಬೇಕು.

ಪ್ರಮುಖ ರೋಗಗಳು

ಹಳದಿ ನಂಜು ರೋಗ, ಸರ್ಕೋಸ್ಪೋರಾ ಎಲೆ ಚುಕ್ಕೆ ರೋಗ ಮತ್ತು ಬೂದಿ ರೋಗ.

ನಿರ್ವಹಣೆ

- ಹಳದಿ ನಂಜು ರೋಗಕ್ಕೆ ತುತ್ತಾದ ಸಸ್ಯಗಳನ್ನು ಪ್ರಾರಂಭದ ಹಂತದಲ್ಲಿಯೇ ಗುರುತಿಸಿ ಕಿತ್ತು ಮಣ್ಣಿನಲ್ಲಿ ಹೂಳಬೇಕು. ಈ ರೋಗವು ವಾಹಕಗಳ ಮೂಲಕ ಹರಡುವುದರಿಂದ ಇದರ ಹತೋಟಿಗೆ ಪ್ರತಿ ಎಕರೆಗೆ 200 ಲೀ. ಪ್ರಮಾಣದಲ್ಲಿ ನೀಮಾಸ್ತ್ರವನ್ನು ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.
- ಸರ್ಕೋಸ್ಪೋರಾ ಎಲೆ ಚುಕ್ಕೆ ರೋಗದ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಲೀ. ನೀರಿಗೆ 15 ಮಿ.ಲೀ ಶುಂಠಿ ಅಸ್ತ್ರ ಅಥವಾ ಎಕರೆಗೆ 200 ಲೀ. ಕಾಡಕುಳ್ಳಿನ ಕಷಾಯ ಅಥವಾ 25 ಮಿ.ಲೀ ಹುಳಿಮಜ್ಜಿಗೆಯ ಜೊತೆಗೆ 35 ಮಿ.ಲೀ. ದೇಸಿ ಗೋಮೂತ್ರವನ್ನು ಬೆರೆಸಿ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.
- ಬೂದಿ ರೋಗದ ಹತೋಟಿಗಾಗಿ ಪ್ರತಿ ಲೀ. ನೀರಿಗೆ 25 ಮಿ.ಲೀ ಹುಳಿಮಜ್ಜಿಗೆಯ ಜೊತೆಗೆ 35 ಮಿ.ಲೀ. ದೇಸಿ ಗೋಮೂತ್ರವನ್ನು ಬೆರೆಸಿ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.

ಇಳುವರಿ (ಪ್ರತಿ ಎಕರೆಗೆ):

ಕಾಳು: 2.5-3.0 ಕ್ವಿಂ.

ಹೊಟ್ಟು: 8-9 ಕ್ವಿಂ.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಸಿ. ಪಿ. ಚಂದ್ರಶೇಖರ

ಸಹ ಸಂಶೋಧಕರು: ಡಾ. ಎಸ್. ಬಿ.ಮಂಜುನಾಥ, ಡಾ.ಭೀಮನಗೌಡ.ಬ. ಪಾಟೀಲ, ಡಾ. ಸಿ. ಪಿ. ಸಂಕಲ್ಪ, ಡಾ. ವಿ. ಪಿ. ಗಿರೀಶ, ಡಾ.ಕೆ.ಎನ್. ಬಸವೇಶ, ಡಾ.ನಾಗರಾಜ ತಕ್ಕಣ್ಣವರ, ಶಿವನಗೌಡ, ಡಾ.ಬಿ. ಕಾಂಚನಶ್ರೀ, ಡಾ. ಎಮ್.ಎನ್. ಶ್ರೀನಿವಾಸ, ಡಾ. ಎಸ್. ಎ. ಗದ್ದನಕೇರಿ, ಡಾ. ಬಿ. ಎಸ್. ಏಣಿಗಿ, ಡಾ. ಚಿದಾನಂದ ಪಿ. ಮನ್ಸೂರ, ಡಾ. ಎಸ್. ಎಸ್. ನೂಲಿ, ಡಾ. ಶೇಖರಪ್ಪ, ಡಾ. ಚನ್ನಕೇಶವ, ಆರ್., ಡಾ. ಶ್ರೀಪಾದ ಕುಲಕರ್ಣಿ, ಡಾ. ಬಲ್ಲೊಳ ಗುರುಪಾದ, ಡಾ. ಸಿ.ಆರ್. ಪಾಟೀಲ್, ಡಾ. ಗೀತಾ ಗೌಡರ, ಡಾ. ಮಂಜುನಾಥ ಹೆಬ್ಬಾರ, ಡಾ. ಎಸ್. ಟಿ. ಹುಂಡೇಕರ್ ಮತ್ತು ಡಾ. ಆರ್. ಎ. ಎಲೇದಳಿ

Community Science:

1. Comprehensive use of underutilized natural fibers for rural women

Dr. Sannapamma, K. J., presented the results of comprehensive use of underutilized natural fibers for rural women. She also presented the data of individual firms and pooled data as per suggestions given by Directorate of Research and the technology was accepted by the house.

Hand Book of Home Science Technologies

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Name of the Technology: Eco-friendly disposable paper plates from bagasse composite handmade papers

Introduction

Karnataka is one of the leading sugarcane growing states in the country and thousands of farm families depend on this cash crop for their livelihoods. Bagasse, extracted from sugarcane rind is one of the potential raw material for textile application. Presently, the bagasse is used for co-generation and other industrial application. In spite of the wide consumption of bagasse as a fuel for mill boilers, electricity, steam generation and other applications, the residues still remain as a

surplus which possesses a disposal problem for mill owners. This agricultural residue has received increasing attention, since it represents an abundant, inexpensive and readily available source of renewable lignocellulosic biomass for the production of environmentfriendly industrial products. Hence, proper utilization of bagasse is need of the hour for local farmers and entrepreneurs for their livelihood security.

Applications:Biodegradable bagasse composite paper plates

Raw materials/Machinery/Equipment: Bagasse, sisal and cotton rags (40:30:30)

Machinery: Beater beaker, auto vat, srew press, calendaring and cutting machine, paper plate making machine.

Process:

- Locally available eco-friendly renewable resources *viz.*, sugarcane bagasse, sisal fibre and maize husk, waste paper and cotton pulp are used for development of handmade papers with varied blend proportions (60:40 and 40:30:30) and GSM (120 to 240).
- Among the fibre blends, bagasse: sisal: cotton pulp (40:30:30) is found to be more suitable for production of handmade paper with optimum physical properties and further subjected to large scale production for variegated application.
- Bagasse handmade paper (120, 140,180 and 240 GSM) is subjected to field trials at Hubli, Dharwad and Belagavi for making paper plates and are tested for suitable performance properties *viz.*, grammage, temperature, pressure and weight holding time.

Salient features:

- Based on the sensory evaluation results, it is found that the blended handmade paper *i e.*, bagasse:sisal:cotton pulp (40:30:30) possessed acceptable rating for colour, texture, durability and thickness.
- Majority of the respondents stated that, the developed handmade paper is more suitable for production of carry bags, paper plates, file covers and food wrappers.
- 180 to 240 GSM bagasse handmade paper is found to be highly suitable for production of paper plates with required temperature, pressure and weight holding time.
- Bagasse paper plate production rate per hour is found to be on par with existed table wares with suitable technical adjustment.
- Bagasse paper plates possessed good tear, tensile and busting strength with better sensory attributes.
- The production cost is found to be 25 per cent higher in bagasse paper plate than the existed kraft paper plates.
- The bagasse composite handmade paper plates are suitable for dry food items, solid and semi solid foods.
- Bagasse paper plates are found to be eco-friendly and biodegradable than the existed kraft paper plates that can be a suitable alternative for plastics.

Economics: Per kg bagasse composite handmade paper cost is found to be Rs. 136.00 (150- 200 paper plates) depending upon the paper GSM.

Effectiveness of technology:

Bagasse composite papers with varied GSM (180-240) is found to be more suitable for production of ecofriendly biodegradable paper plates with existed machineries and possessed optimum quality parameters which are suitable for solid and semi solid food items. Bagasse is one

of the most renewable bio-resource which can be effectively used in technical textile sector and sustainable raw material for rural startups.

Scientist Involved:

1. Dr. Sannapamma K.J, Professor and Head, AICRP-Women in Agriculture, MARS, UAS, Dharwad
2. Dr. Sanjay B. Patil, Principal Scientist, AICRP-Sugarcane, ARS, Sankeshwar

ಗ್ರಾಮೀಣ ಗೃಹ ವಿಜ್ಞಾನ ಕೈಪಿಡಿ

ತಂತ್ರಜ್ಞಾನದ ಹೆಸರು: ಪರಿಸರ ಸ್ನೇಹಿ ಜೈವಿಕ ವಿಘಟನೀಯ ಕಬ್ಬಿನ ಸಿಪ್ಪೆಯ (ಬಗಾಸ್) ಸಂಯುಕ್ತ ಕೈಕಾಗದಗಳ ಫ್ಲೇಟಗಳು

ಪರಿಚಯ

ಕಬ್ಬಿನ ಸಿಪ್ಪೆಯು (ಬಗಾಸ್) ಬಹುಉಪಯುಕ್ತವಾದ ಕಚ್ಚಾವಸ್ತುವಾಗಿದ್ದು, ಇದನ್ನು ಜವಳಿ ಕ್ಷೇತ್ರದಲ್ಲಿ ಸಮರ್ಪಕವಾಗಿ ಬಳಸಿಕೊಂಡಿದ್ದಲ್ಲಿ ವಿವಿಧ ರೀತಿಯ ಮೌಲ್ಯವರ್ಧಿತ ಉತ್ಪನ್ನಗಳನ್ನು ತಯಾರಿಸಬಹುದು. ಬಹುತೇಕವಾಗಿ ಕಬ್ಬಿನ ಸಿಪ್ಪೆಯನ್ನು, ಸಕ್ಕರೆ ಕಾರ್ಖಾನೆಗಳಲ್ಲಿ ವಿದ್ಯುತ್ ಉತ್ಪಾದಿಸಲು ಬಳಸುತ್ತಾರೆ ಹಾಗೂ ಬೆಲ್ಲದ ಘಟಕಗಳಲ್ಲಿ ಊರುವಲಾಗಿ ಮತ್ತು ಗೊಬ್ಬರಕ್ಕೆ ರೈತರು ಯಥೇಚ್ಛವಾಗಿ ಬಳಸುತ್ತಾರೆ. ಸಕ್ಕರೆ ಕಾರ್ಖಾನೆಗಳಲ್ಲಿ ಇದನ್ನು ಒಂದು ತ್ಯಾಜ್ಯ ಎಂದು ಪರಿಗಣಿಸಿ ಇದರ ಮೌಲ್ಯವರ್ಧನೆಗೆ ಹೆಚ್ಚು ಒತ್ತು ಕೊಡುತ್ತಿಲ್ಲ. ಆದುದರಿಂದ ಇದರ ಸಮರ್ಪಕ ಬಳಕೆ ಮತ್ತು ಮೌಲ್ಯವರ್ಧನೆ ಮುಖ್ಯವಾಗಿದ್ದು, ಪರಿಸರ ಮಾಲಿನ್ಯವನ್ನು ತಡೆಗಟ್ಟುವ ಜೋತೆಗೆ ರೈತರ ಆರ್ಥಿಕತೆಯನ್ನು ಹೆಚ್ಚಿಸಬಹುದಾಗಿದೆ.

ಬಳಕೆ:ನೈಸರ್ಗಿಕ ಜವಳಿ ಸಂಯೋಜನೆಗಳು, ಕಾಗದಗಳು ಹಾಗೂ ಜೈವಿಕ ವಿಘಟನೀಯ ಪೇಪರ್ ಫ್ಲೇಟಗಳು

ಕಚ್ಚಾ ವಸ್ತುಗಳು:ಕಬ್ಬಿನ ನಾರು, ಕಲ್ಲಾರು, ಮೆಕ್ಕೆ ಜೋಳದ ಸಿಪ್ಪೆ, ತ್ಯಾಜ್ಯ ಕಾಗದ ಮತ್ತು ಹತ್ತಿ ಚಿಂದಿಗಳು

ಯಂತ್ರೋಪಕರಣಗಳು: ಬೀಟರ್ ಬೀಕರ್, ಆಟೋ ವ್ಯಾಟ್, ಸ್ಕ್ರೀವ್ ಪ್ರೆಸ್, ಕ್ಯಾಲೆಂಡರಿಂಗ್ ಮಶೀನ್, ಕಟ್ಟಿಂಗ್ ಮಶೀನ್ ಮತ್ತು ಪೇಪರ್ ಫ್ಲೇಟ್ ಮಶೀನ್.

ವಿಧಾನ:

- ಸಂಸ್ಕರಿಸಿದ ಬಗ್ಗಾಸೆ ನಾರು ಮತ್ತು ಇತರೆ ನೈಸರ್ಗಿಕ ನಾರುಗಳನ್ನು ವಿವಿಧ ಅನುಪಾತದಲ್ಲಿ ಮಿಶ್ರಿಸಿ ಕೈ ಕಾಗದಗಳನ್ನು ತಯಾರಿಸಲಾಯಿತು. ಅವುಗಳೆಂದರೆ ಕಬ್ಬಿನ ನಾರು, ಕಲ್ಲಾರು, ಮೆಕ್ಕೆ ಜೋಳದ ಸಿಪ್ಪೆ, ತ್ಯಾಜ್ಯ ಕಾಗದ ಮತ್ತು ಹತ್ತಿ ಚಿಂದಿಗಳನ್ನು 40:30:30ರ ಅನುಪಾತದಲ್ಲಿ ಮಿಶ್ರಿಸಿ ಕೈ ಕಾಗದಗಳನ್ನು ತಯಾರಿಸಲಾಯಿತು.
- ಶುದ್ಧ ಮತ್ತು ಮಿಶ್ರಿತ ಕೈ ಕಾಗದಗಳ ಗುಣಮಟ್ಟವನ್ನು ತಿಳಿಯಲು ಪರೀಕ್ಷೆಗೆ ಒಳಪಡಿಸಿದಾಗ ಮಿಶ್ರಿತ ಕಬ್ಬಿನ ನಾರು/ಕಲ್ಲಾರು/ಹತ್ತಿ ಪಲ್ಲ (40:30:30 ಅನುಪಾತ) ಕಾಗದ ಹೆಚ್ಚಿನ ಸಾಂದ್ರತೆ, ಹೆಚ್ಚಿನ ನೀರಿಗೆ ಮತ್ತು ಬಾಗುವಿಕೆಯ ಗುಣಧರ್ಮಗಳನ್ನು ಹೊಂದಿದೆ ಎಂದು ತಿಳಿದು ಬಂದಿದೆ. ತದನಂತರ ವಿವಿಧ ಅನುಪಾತದಲ್ಲಿ ನೀರಿನ ನೀರೋಧಕ ಮಾಧ್ಯಮದೊಂದಿಗೆ ಸಂಸ್ಕರಿಸಿ ಮಿಶ್ರಿತ ಬಗ್ಗಾಸೆ ಕೈ ಕಾಗದಗಳನ್ನು ವಿವಿಧ ಸಾಂದ್ರತೆಯ ಅನುಗುಣವಾಗಿ (120, 140, 180, 240 GSM) ತಯಾರಿಸಿ, ಪೇಪರ್ ಫ್ಲೇಟಗಳ ತಯಾರಿಕೆಗೆ ಬಳಸಲಾಯಿತು.
- ಪೇಪರ್ ಫ್ಲೇಟಗಳ ತಯಾರಿಕೆಗೆ ಉಪಚರಿಸಿದ ಕೈಕಾಗದಗಳನ್ನು ಕ್ಷೇತ್ರ ವೀಕ್ಷಣೆಗೆ 5 ಸ್ಥಳೀಯ ಉತ್ಪಾದನೆ ಘಟಕಗಳಲ್ಲಿ ಕಾರ್ಯಸಾಧ್ಯತೆಗೆ ಒಳಪಡಿಸಲಾಯಿತು ಮತ್ತು ಕಾರ್ಯಕ್ಷಮತೆ ಗುಣಲಕ್ಷಣಗಳಾದ ಅಗತ್ಯವಾದ ತಾಪಮಾನ, ಒತ್ತಡ, ದಪ್ಪತೆಯ ಗುಣಧರ್ಮಗಳನ್ನು ಮಿಶ್ರಿತ ಬಗಾಸ್ ಪೇಪರ್ ಫ್ಲೇಟ ತಯಾರಿಕೆಗೆ ಕಾಗದದ ಸೂಕ್ತತೆಯನ್ನು ತಿಳಿಯಲಾಯಿತು.

ಪ್ರಮುಖ ಅಂಶಗಳು:

- ವಿವಿಧ ದಪ್ಪತೆ ಹೊಂದಿದ ಕೈಕಾಗದಗಳು ಸ್ಥಳೀಯವಾಗಿ ಉಪಯೋಗಿಸುವ ಕೈಕಾಗದಗಳಿಗಿಂತ ಹೆಚ್ಚು ಸೂಕ್ತವಾಗಿವೆ ಎಂದು ಕ್ಷೇತ್ರ ಪ್ರಯೋಗದ ಆಧಾರದ ಮೇಲೆ ಧೃಡಪಟ್ಟಿದೆ.
- ಕಾರ್ಯಕ್ಷಮತೆ ಗುಣಲಕ್ಷಣಗಳಾದ ಅಗತ್ಯವಾದ ತಾಪಮಾನ, ಒತ್ತಡ, ದಪ್ಪತೆಯ ಆಧಾರದ ಮೇಲೆ 180-240 ಉಖಒ ಸಂಯುಕ್ತ ಕೈ ಕಾಗದಗಳ ಫ್ಲೇಟ್‌ಗಳು ಸ್ಥಳೀಯವಾಗಿ ಸಿಗುವ ಫ್ಲೇಟಗಳಿಗಿಂತ ಹೆಚ್ಚು ಸ್ವೀಕಾರಾರ್ಹವಾಗಿವೆ ಎಂದು ಧೃಡಪಟ್ಟಿದೆ.
- ಮಿಶ್ರಿತ ಬಗಾಸ್ ಕೈಕಾಗದಗಳ ಫ್ಲೇಟಗಳ ಉತ್ಪಾದನೆಯು (ಒಂದು ದಿನಕ್ಕೆ) ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಕಾಗದದ ಫ್ಲೇಟಗಳ ಉತ್ಪಾದನೆಗೆ ಸಮನಾಗಿರುತ್ತದೆ ಎಂದು ಕಂಡುಬಂದಿದೆ. ಇವುಗಳ ಉತ್ಪಾದನಾ ವೆಚ್ಚವು ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಕಾಗದ ಫ್ಲೇಟಗಳ ಉತ್ಪಾದನಾ 25% ವೆಚ್ಚಕ್ಕಿಂತ ಹೆಚ್ಚಾಗಿದ್ದು, ಒಣ ಆಹಾರ, ಅರೆ ಎಣ್ಣೆ ಪದಾರ್ಥಗಳಿಗೆ ಸೂಕ್ತವಾಗಿದೆ ಎಂದು ತಿಳಿದು ಬಂದಿದೆ.

➤ ಬಗಾಸ್ ಪೇಪರ್ ಪ್ಲೇಟ್‌ಗಳು ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಪೇಪರ್ ಪ್ಲೇಟ್‌ಗಳಿಗಿಂತ ಹೆಚ್ಚು ಜೈವಿಕ ವಿಘಟನೀಯ ಎಂದು ತಿಳಿದು ಬಂದಿದ್ದು, ಪ್ಲಾಸ್ಟಿಕ್ ಪ್ಲೇಟ್‌ಗಳಿಗೆ ಪರ್ಯಾಯ ಎಂದು ಹೇಳಬಹುದು.

ಬೆಲೆ:ಮಿಶ್ರಿತ ಕಬ್ಬಿನ ನಾರು/ ಕಲ್ಲಾರು/ಹತ್ತಿ ಪಲ್ಲ (40:30:30 ಅನುಪಾತ) ಕೈ ಕಾಗದದ ಉತ್ಪಾದನಾ ವೆಚ್ಚ ಒಂದು ಕೆ.ಜಿಗೆ ರೂ. 136.00 ರೂಗಳು ಹಾಗೆಯೇ ಒಂದು ಪ್ಯಾಕೆಟ್ ಮಿಶ್ರಿತ ಬಗಾಸ್ ಪೇಪರ್ ಪ್ಲೇಟ್‌ಗಳ ಬೆಲೆ ವಿಸ್ತೀರ್ಣ ಮತ್ತು ದಪ್ಪಳತೆಯ ಅನುಸಾರವಾಗಿ ಪ್ರತಿಶತ 25% ರಷ್ಟು (7 ಇಂಚು ವಿಸ್ತರಣೆಯುಳ್ಳ ಪೇಪರ್ ಪ್ಲೇಟ್ ಬೆಲೆ 30-40 ರೂಗಳು) ಮಾರುಕಟ್ಟೆಯಲ್ಲಿ ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಪೇಪರ್ ಪ್ಲೇಟ್‌ಗಳಿಗಿಂತ ಹೆಚ್ಚಾಗಿದೆ.

ತಂತ್ರಜ್ಞಾನದ ಪರಿಣಾಮಗಳು

ಪರಿಸರ ಸ್ನೇಹಿ ಬಗಾಸ್ ನಾರಿನ ಕೈಕಾಗದಗಳು ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಕೈಕಾಗದಗಳಿಗೆ ಪರ್ಯಾಯವಾಗಿದ್ದು, ಅತ್ಯುತ್ತಮ ಜೈವಿಕ ವಿಘಟನೀಯ ಉತ್ಪನ್ನವಾಗಿದೆ.

ವಿಜ್ಞಾನಿಗಳ ಭಾಗಿತ್ವ:

1. ಡಾ. ಸಣ್ಣಪಾಪಮ್ಮ ಕೆ.ಜೆ, ಪ್ರಾದ್ಯಾಪಕರು ಮತ್ತು ಮುಖ್ಯಸ್ಥರು, ಅ.ಭಾ.ಸ.ಸಂ. ಯೋಜನೆ- ಕೃಷಿ ನಿರೀತ ಮಹಿಳೆ, ಮುಖ್ಯ ಕೃಷಿ ಸಂಶೋಧನಾ ಕೇಂದ್ರ, ಕೃ.ವಿ.ವಿ. ಧಾರವಾಡ
2. ಡಾ. ಸಂಜಯ ಬಿ. ಪಾಟೀಲ, ಪ್ರಧಾನ ವಿಜ್ಞಾನಿ, ಅ.ಭಾ.ಸ.ಸಂ. ಯೋಜನೆ-ಕಬ್ಬು ಕೃ. ಸಂ. ಕೇ., ಕೃ.ವಿ.ವಿ. ಧಾರವಾಡ

Crop Physiology:

1. USEof PGR's & Nutrients for enhancing the Productivity in Chickpea

Dr. K. N. Pawar presented the farm trial results on use of PGR and nutrients for enhancing the productivity in chickpea with chickpea magic at the rate of 0.8 %. DR suggested to accept the technology after the registration of the product and also suggested to provide the information to UAS, Raichur for registration.

ಕಡಲೆ -ಖುಷ್ಕಿ

ಸೂಚನೆಗಳು:(ಪುಟ-122ರಲ್ಲಿ ಸೇರಿಸುವುದು)

- ಹೂವಾಡುವಾಗ ಪ್ರಾರಂಭಿಕ ಹಂತದಲ್ಲಿ ಶೇ. 2 ರ ಯೂರಿಯಾ (20 ಗ್ರಾಂ ಯೂರಿಯಾ ಪ್ರತಿ ಲೀಟರ್ ನೀರಿಗೆ ಸಿಂಪಡಣೆ ಮಾಡುವುದರಿಂದ ಹೆಚ್ಚಿನ ಇಳುವರಿ ಪಡೆಯಬಹುದು.
- ಬೆಳೆ ಹೂವಾಡುವಾಗ ಹಾಗೂ ಕಾಯಿ ಕಟ್ಟುವಾಗ ಶೇ. 0.8 ಚಿಕ್ಕಿ ಮ್ಯಾಜಿಕ್‌ನ್ನು (8 ಗ್ರಾಂ. ಪ್ರತಿ ಲೀಟರ್ ನೀರಿಗೆ ಬೆರೆಸಿ) ಸಿಂಪಡಣೆ ಮಾಡಬೇಕು.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಕೆ.ಎನ್.ಪವಾರ.ಪ್ರಧಾನ ವಿಜ್ಞಾನಿಗಳು (ಸಸ್ಯ ಶರೀರ ಶ್ರೀಯಾ ಶಾಸ್ತ್ರ), ಕೃಷಿ ಸಂಶೋಧನಾ ಕೇಂದ್ರ ಧಾರವಾಡ

ಸಹ ಸಂಶೋಧಕರು:ಡಾ. ಸಿ.ಎಂ. ನಾವಲಗಟ್ಟಿ, ಡಾ. ಸುನೀಲ ಕರಿಕಟ್ಟಿ, ಡಾ.ಎಸ್.ಎನ್.ಜಾಧವ, ಡಾ.ಬಿ. ಸಿ. ಕಾಮಣ್ಣಾ, ಡಾ. ರಾಜಕುಮಾರ ಜಿ.ಆರ್, ಡಾ.ಅಶೋಕ.ಪಿ, ಡಾ.ಪುನೀತಾ.ಬಿ.ಸಿ, ಡಾ.ಎಸ್.ಎ.ಬಿರಾದಾರ, ಡಾ.ಲೋಕೇಶ.ಬಿ.ಕೆ, ಡಾ.ಸಿ.ಎಂ. ರಫಿ ಹಾಗೂ ವಿವೇಕ ದೇವರನಾದಗಿ

Animal Science:

1.Assessment of growth performance of Kadaknath breed under backyard poultry farming

2. Integration of Stall fed Sheep/Goat farming with poultry farming:

Dr. Jayashree Pattar presented the farm trial results on the above mentioned trials. House accepted the technology and simultaneously DR suggested presenting the results of technology to be released at ZREAC of Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar.

MODIFICATION/ADDITION TO PoP – 2022-2023

Sl no	Crop subject matter	Proposal to be included (Detailed text to be included both in Kannada and English)	Modification to the existing or new addition	Ref to existing page no of POP	Whether Adequate research data available		Data of farm trial		Remarks / Scientist
					No. of years	Data	No. of years	Data	
1	2	3	4	5	6	7	8		
1	Animal Science	<p>MODIFICATION TO ANIMAL HUSBANDRY PACKAGE OF PRACTICES - 2022 (Page no 184 after first paragraph)</p> <p>Kadaknath Breed: Kadaknath is black colored poultry breed, having high hurdling behavior and less brooding capacity. It is highly suitable for backyard poultry farming as compared to cage farming.</p> <p>Characteristics: Feathers, beak, legs, and comb are black in color. Meat color varies from grey to black in color. Egg color is white to light brown. It is tolerant to extreme heat, cold climatic conditions.</p>	New addition	(Chapter 6 Poultry farming, under subchapter I, Under improved breeds for backyard poultry farming) Page no 184 after 1ST Paragraph	2 years	500 Birds	-	-	<p>PI: Dr Jayashree Pattar</p> <p>CO-PI: Dr. Anil Kumar G.K, Dr Subha S., Dr A. S. Patil</p>

		<p>Scientific care and management of chicks up to 4 weeks period is very important otherwise early mortality will be more. At 10 weeks age Kadaknath bird attains 0.8 kg body weight Meat is rich in protein, phosphorous, calcium and has less fat, cholesterol. Manure is rich in Nitrogen</p>							
2	Animal Science	<p>MODIFICATION TO ANIMAL HUSBANDRY PACKAGE OF PRACTICES - 2022</p> <p>(Page no 233, Add at last of the first paragraph)</p> <p>Integration of Stall fed Sheep/Goat farming with poultry farming:</p> <p>The space available underneath the stall fed sheep/goat housingsystem can be effectively utilized for rearing poultry birds. Poultry birds above four weeks age especially local, DP cross, Kadaknath, Swarnadhara and Giriraja birds can be</p>	New addition	(Chapter 8 Sheep/Goat farming, under subchapter III), Page no. 233 , Addafter 1 ST Paragraph	2 years	500 Birds	-	-	<p>PI: Dr Jayashree Pattar</p> <p>CO-PI: Dr. Anil Kumar G.K, Dr Subha S.,Dr A. S. Patil</p>

		reared and space required for each bird would be 3 ft ² . The underneath height of stall fed house from the floor should be 5-10 feet and feed cost for poultry farming can be reduced by 10 % in this system of rearing.							
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ಸುಧಾರಿತ ಪಶುಪಾಲನಾ ಪದ್ಧತಿ ಪುಸ್ತಕದಲ್ಲಿ ಹೊಸದಾಗಿ ಸೇರ್ಪಡೆಯಾಗುವ ತಾಂತ್ರಿಕ ವಿಷಯ - 2022 - 23

ಸಂಖ್ಯೆ	ವಿಷಯ	ಸುಧಾರಿತ ಪಶುಪಾಲನಾ ಪದ್ಧತಿಗಳು ಪುಸ್ತಕದಲ್ಲಿ ಹೊಸದಾಗಿ ಸೇರ್ಪಡೆಯಾಗುವ ವಿಷಯ - 2022-23 (ಪುಟ ಸಂಖ್ಯೆ 184, ಒಂದನೇಯ ಪ್ಯಾರಾನಂತರ)	ಹಳೆಯ ತಿದ್ದುಪಡಿ / ಹೊಸದ	ಸುಧಾರಿತ ಪಶುಪಾಲನಾ ಪದ್ಧತಿಗಳು ಪುಸ್ತಕದಲ್ಲಿ ಈಗಿರುವ ಪು. ಸಂ.	ಸಾಕಷ್ಟು ಸಂಶೋಧನೆಯ ಮಾಹಿತಿ ಇದೆಯೇ?		ಕ್ಷೇತ್ರ ಪರಿಷ್ಕೆ		ವಿಜ್ಞಾನಿ
					ವರ್ಷಗಳ	ಇಳುವರಿ ಮಾಹಿತಿ	ವರ್ಷ	ಮಾಹಿತಿ	
1	ಪಶು ವಿಜ್ಞಾನ	ಕಡಕನಾಥ ಕೋಳಿ ತಳಿ: ಈ ತಳಿಯು ಕಪ್ಪು ಬಣ್ಣದ್ದಾಗಿದ್ದು, ನೋಡಲು ನಾಟಿ ಕೋಳಿಯಂತೆ ಕಾಣುವುದು ಒಂದೇ ಸ್ಥಳದಲ್ಲಿ ಕೋಳಿಗಳು ಗುಂಪಾಗುವಿಕೆ ಸ್ವಭಾವ (Hurdling Behaviour) ಹೆಚ್ಚು ಇದ್ದು, ಕಡಿಮೆ ಮರಿಮಾಡುವ ಗುಣ ಧರ್ಮ ಹೊಂದಿದೆ ಮತ್ತು	ಹೊಸದು	ಪುಟ ಸಂಖ್ಯೆ 184 1 ನೇಯ ಪ್ಯಾರಾನಂತರ	2 ವರ್ಷ	500 ಕೋಳಿಗಳ	-	-	ಸಂಯೋಜಕರು: ಡಾ. ಜಯಶ್ರೀ ಪತ್ತಾರ ಸಹ ಸಂಯೋಜಕರು: ಡಾ. ಅನೀಲಕುಮಾರ ಜಿ.ಕೆ., ಡಾ. ಶುಭಾ ಎಸ್., ಡಾ. ಎ.ಎಸ್. ಪಾಟೀಲ

	<p>ಹಿತ್ತಲಿನಲ್ಲಿ ಸಾಕಲು ಯೋಗ್ಯವಾದ ಸುಧಾರಿತ ತಳಿಯಾಗಿದೆ.</p> <p>ತಳಿಯು ಗುಣಲಕ್ಷಣಗಳು:ರೆಕ್ಕೆ ಪುಕ್ಕ ಚುಂಚು, ಕಾಲು, ತುರಾಯಿ ಕಪ್ಪು ಬಣ್ಣದ್ದಾಗಿರುತ್ತದೆ. ಮಾಂಸದ ಬಣ್ಣ ಬೂದು ಅಥವಾ ಕಪ್ಪು, ಮೊಟ್ಟೆಯು ನಾಟಿ ಕೋಳಿಯ ತರಹ ಬಿಳಿ ಅಥವಾ ತಿಳಿ ಕಂದು ಬಣ್ಣದ್ದಾಗಿರುತ್ತದೆ. ಈ ಕೋಳಿಯು ವಿವಿಧ ಹವಾಮಾನಕ್ಕೆ ಹೊಂದಿಕೊಳ್ಳುತ್ತದೆ. ಮೊದಲ 4 ವಾರಗಳವರೆಗೆ ವೈಜ್ಞಾನಿಕವಾಗಿ ಕೋಳಿ ಮರಿಗಳ ಸಾಕಾಣಿಕೆಗೆ ಹೆಚ್ಚು ಗಮನ ಹರಿಸಬೇಕು. ಇಲ್ಲದಿದ್ದರೆ ಮರಿಗಳ ಸಾವಿನ ಪ್ರಮಾಣ ಹೆಚ್ಚಾಗುವುದು. ಕಡಕನಾಥ ಕೋಳಿ ತಳಿಯು 10 ನೇಯ ವಾರಕ್ಕೆ 0.8 ಕಿ.ಗ್ರಾಂ ದೇಹದ ತೂಕ ಬರುವುದು. ಸ್ಥಳೀಯ ಕೋಳಿಗೆ ಹೊಲಿಸಿದರೆ ಮಾಂಸದಲ್ಲಿ ಅಧಿಕ ಪ್ರೋಟಿನ್, ಕ್ಯಾಲ್ಸಿಯಂ,</p>							
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		ಫಾಸ್ಪರಸ್, ಕಡಿಮೆ ಕೊಲೆಸ್ಟ್ರಾಲ್, ಕೊಬ್ಬು ಮತ್ತು ಹಿಕ್ಕೆಯಲ್ಲಿ ಸಾರಜನಕ ಅಧಿಕವಾಗಿದೆ.							
2	ಪಶು ವಿಜ್ಞಾನ	ಸಮಗ್ರ ಕುರಿ/ಮೇಕೆ ಸಾಕಾಣಿಕೆ ಘಟಕದ ಅಡಿಯಲ್ಲಿ ಕೋಳಿ ಸಾಕಾಣಿಕೆ ಪ್ರಸ್ತುತ ಚಾಲ್ತಿಯಲ್ಲಿರುವ ಎತ್ತರವಾದ ಕೊಟ್ಟಿಗೆ ಪದ್ಧತಿಯಲ್ಲಿ ಕುರಿ ಮತ್ತು ಮೇಕೆ ಘಟಕದ ಕೆಳಗಡೆ ಸಾಕಷ್ಟು ಸ್ಥಳಾವಕಾಶವಿದ್ದು, ಈ ಜಾಗವನ್ನು ಕೋಳಿ ಸಾಕಾಣಿಕೆಗೆ ಬಳಸಿಕೊಳ್ಳಬಹುದು . ನಾಲ್ಕು ವಾರಕಿಂತ್ಯ ಮೇಲ್ಪಟ್ಟ ನಾಟಿ, ದೇಶಿ ಮಿಶ್ರಿತ (DP), ಕಡಕನಾಥ, ಸ್ವರ್ಣಧಾರಾ ಮತ್ತು ಗಿರಿರಾಜ ಕೋಳಿ ತಳಿಗಳನ್ನು ಈ ಪದ್ಧತಿಯಲ್ಲಿ ಸಾಕಬಹುದು ಮತ್ತು ಪ್ರತಿ ಕೋಳಿಗೆ 3 ಚದರ ಅಡಿ ಸ್ಥಳಾವಕಾಶ ಬೇಕಾಗುತ್ತದೆ. ಕುರಿ/ಮೇಕೆ ಕೊಟ್ಟಿಗೆಯ ಕೆಳ ಭಾಗದ ಅಂತರ ನೆಲದಿಂದ 5 ರಿಂದ 10 ಅಡಿ ಇರಬೇಕು. ಇದರಿಂದ ಕೋಳಿ	ಹೊಸದ ೦	ಪುಟ ಸಂಖ್ಯೆ 233 1 ನೇಯ ಪ್ಯಾರಾ ನಂತರ	2 ವರ್ಷ	500 ಕೋಳಿಗಳ ೦	-	-	ಸಂಯೋಜಕರು: ಡಾ. ಜಯಶ್ರೀ ಪತ್ತಾರ ಸಹ ಸಂಯೋಜಕರು: ಡಾ. ಅನೀಲಕುಮಾರ ಜಿ.ಕೆ., ಡಾ. ಶುಭಾ ಎಸ್., ಡಾ. ಎ.ಎಸ್. ಪಾಟೀಲ

		ಸಾಕಾಣಿಕೆಗೆ ತಗಲುವ ಆಹಾರದ ಖರ್ಚು ಶೇ. 10 ರಷ್ಟು ಕಡಿಮೆ.							
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Entomology:

1. Management of Shoot fly in Wheat

Dr. D. N. Kambrekar presented the farm trial results on management of shoot fly in wheat and technology has been accepted for PoP.

ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು: ಬೆಳೆ- ಗೋದಿ ಪುಟ ಸಂಖ್ಯೆ: 75

ಕ್ರ. ಸಂ.	ಪೀಡೆ	ಲಕ್ಷಣ ಹಾಗೂ ಹಾನಿ	ನಿರ್ವಹಣಾ ಕ್ರಮಗಳು
1	ಸುಳಿ ನೋಣ	ತತ್ತಿಯಿಂದ ಹೊರಬಂದ ಮರಿಹುಳು ಸಸಿಯ ಕಾಂಡದೊಳಗೆ ಪ್ರವೇಶಿಸಿ ಸುಳಿಯ ಬುಡವನ್ನು ಉಜ್ಜಿ ಕತ್ತರಿಸುತ್ತದೆ. ಇದರಿಂದಾಗಿ ಸುಳಿ ಬಣಗುತ್ತದೆ ಹಾಗೂ ಸತ್ತ ಸುಳಿ ಸುಲಭವಾಗಿ ಕೀಳಲು ಬರುತ್ತದೆ. ಈ ಕೀಟದ ಬಾಧೆಯು ಗೋದಿ ಬಿತ್ತಿದ 20 ದಿನಗಳಲ್ಲಿ ಕಂಡು ಬರುತ್ತದೆ.	ಪ್ರತಿ ಕಿ.ಗ್ರಾಂ ಗೋಧಿ ಬೀಜಕ್ಕೆ 5 ಮಿ.ಲೀ ಥೈಯೋಮಿಥಾಕ್ಸಮ್ 30 ಎಫ್ ಎಸ್. ದಿಂದ ಬೀಜೋಪಚಾರ ಮಾಡಬೇಕು ಹಾಗೂ ಬಿತ್ತಿದ 20 ದಿನಗಳ ನಂತರ 0.5 ಮಿ.ಲೀ ಸೈಪರಮೆತ್ರಿನ್ 10 ಇ.ಸಿ. ಪ್ರತಿ ಲೀಟರ್ ನೀರಿನಲ್ಲಿ ಬೆರೆಸಿ ಬೆಳೆಗೆ ಸಿಂಪಡಿಸಬೇಕು

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಡಿ.ಎನ್. ಕಂಬ್ರೇಕರ

ಸಹ ವಿಜ್ಞಾನಿಗಳು: ಶ್ರೀ ಸುರೇಶ ಜಂಬಗಿ, ಡಾ. ಸಿ.ಪಿ.ಮಲ್ಲಾಪೂರ, ಡಾ.ರುದ್ರಾ ನಾಯಕ್, ಡಾ. ಪೂರ್ಣಿಮಾ ಮಟ್ಟಿ, ಡಾ.ಅಬ್ದುಲ್ ಬಿರಾದಾರ, ಡಾ. ಸಿ. ಎಮ್. ರಫಿ, ಶ್ರೀ ಎಸ್. ಕೆ, ಮುದ್ದಾಪೂರ, ಶ್ರೀಮತಿ ಕಲಾವತಿ ಕಂಬಳಿ, ಡಾ.ಬಿ.ಕೆ. ಲೋಕೇಶ ಮತ್ತು ಡಾ. ಎಸ್. ಎಸ್. ಕರಬಂಟನಾಳ

2. Management of Fall Armyworm through seed dressers and sprayable formulations in rabi sorghum

Dr. S. S. Karabhantanal presented the farm trial results on management of fall army worm in sorghum. This technology has been accepted for PoP.

ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು: ಪುಟ ಸಂಖ್ಯೆ: 48

ಕ್ರ. ಸಂ.	ಪೀಡೆ	ಲಕ್ಷಣ ಹಾಗೂ ಹಾನಿ	ನಿರ್ವಹಣಾ ಕ್ರಮಗಳು
2	ಫಾಲ್ ಸೈನಿಕ ಹುಳು	ಈ ಕೀಟಗಳು ಹಗಲು ಹೊತ್ತಿನಲ್ಲಿ ಸುಳಿಯಲ್ಲಿ ಅಡಗಿಕೊಂಡಿದ್ದು, ರಾತ್ರಿ ಸುಳಿಯ ಎಲೆಗಳನ್ನು ತಿಂದು ಹಾನಿ ಮಾಡುತ್ತವೆ. ಬೆಳೆಯು 20-50 ದಿನಗಳಿದ್ದಾಗ ಎಲೆಯ ಮೇಲೆ ಹಾನಿ ಮಾಡುತ್ತವೆ. ಬಾಧೆ ಹೆಚ್ಚಾದಂತೆ ಬೆಳೆ ಸಂಪೂರ್ಣ ನಾಶವಾಗುವ ಸಾಧ್ಯತೆಗಳಿವೆ.	ಬಿತ್ತನೆಗೆ ಮೊದಲು ಪ್ರತಿ ಕಿ.ಗ್ರಾಂ. ಬೀಜಕ್ಕೆ 5 ಮಿ. ಲೀ ಸೈಯಾಂಟ್ರಾನಿಲಿಪ್ರೋಲ್ 19.8% + ಥೈಯೋಮಿಥಾಕ್ಸಮ್ 19.8 ಡಬ್ಲ್ಯೂ ಡಬ್ಲ್ಯೂ ಎಫ್ ಎಸ್ ಸಂಯುಕ್ತ ಕೀಟನಾಶಕದಿಂದ ಬೀಜೋಪಚಾರ ಮಾಡಿ ಬಿತ್ತನೆ ಮಾಡಬೇಕು. ತದನಂತರ ಬೆಳೆ 30 ದಿನಗಳಿದ್ದಾಗ ಕ್ಲೋರ್ಯಾಂಟ್ರಾನಿಲಿಪ್ರೋಲ್ @ 0.30 ಮಿ.ಲೀ ಅಥವಾ ಸ್ಪೈನೋಟೆರ್ಯಾಮ್ 11.7%ಎಸ್.ಸಿ @ 0.50 ಮಿ.ಲೀ ಕೀಟನಾಶಕವನ್ನು ಪ್ರತಿ ಲೀ. ನೀರಿಗೆ ಬೆರೆಸಿ ಬೆಳೆಯ ಸುಳಿಯ ಮೇಲೆ ಬೀಳುವಂತೆ ಸಿಂಪಡಿಸಬೇಕು. ಪುನಃ ಅವಶ್ಯವಿದ್ದಲ್ಲಿ 15 ದಿನಗಳ ಅಂತರದಲ್ಲಿ ಈ ಕೀಟನಾಶಕಗಳ ಮರುಸಿಂಪರಣೆ ಮಾಡಬೇಕು.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಎಸ್. ಎಸ್. ಕರಬಂಟನಾಳ ಮತ್ತು ಡಾ. ಶೈಲಾ. ಎಚ್. ಎಮ್.

ಸಹ ವಿಜ್ಞಾನಿಗಳು (ವಲಯ 3): ಡಾ. ಸಿ. ಎಮ್. ರಫಿ, ಡಾ. ಲತಾ ಹೆಚ್. ಸಿ, ಡಾ. ಧನ್‌ಲೆಪ್ಪಗೋಳ, ಡಾ. ಆರ್. ಬಿ. ಬೆಳ್ಳಿ, ಡಾ. ಆರ್. ಬಿ. ಜೊಳ್ಳಿ, ಡಾ. ಪಿ. ಎಸ್. ಪತ್ತಾರ, ಡಾ. ಶಿವಲಿಂಗಪ್ಪಾ ಹೋಟಕರ, ಅರ್ಜುನ ಸೂಲಗಿತ್ತಿ, ಡಾ. ರಾಜು ನೆಗಳೂರಮತ್ತು ಡಾ. ಗುರುರಾಜ ಕೊಂಬಳಿ

ಸಹ ವಿಜ್ಞಾನಿಗಳು (ವಲಯ 8): ಡಾ. ಎಸ್ ಎನ್. ಜಾಧವ, ಡಾ. ಕಲಾವತಿ ಕಂಬಳಿ, ಡಾ. ಪ್ರಸನ್ನ ಪಿ.ಎಮ್., ಡಾ. ಲೋಕೇಶ ಬಿ. ಕೆ, ಡಾ. ಧನಂಜಯ ಚೌಗಲಾ, ಡಾ. ಸರಸ್ವತಿ ಎಸ್. ಸಂಪಗಾವಿ, ಡಾ. ಎನ್. ಜಿ.ಹನಮರಟ್ಟಿ ಮತ್ತು ಡಾ. ಟಿ. ಟಿ. ಬಂಡಿವಡ್ಡರ

3. Management of fall army worm through seed treatment in maize.

4. Management of fall army worm through foliar sprays in maize.

5. Management of fall army worm through novel molecules in maize.

Dr. Shaila H. M., presented the three farm trial results on management of fall army worm in maize through seed treatment and foliar spray. House suggested accepting the technologies for PoP with little correction in the verbatim.

ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು: ಪುಟ ಸಂಖ್ಯೆ: 57

ಕ್ರ. ಸಂ.	ಪೀಡೆ	ನಿರ್ವಹಣಾ ಕ್ರಮಗಳು	ಪರಿಷ್ಕೃತ ನಿರ್ವಹಣಾ ಕ್ರಮಗಳು
4	ಫಾಲ್ ಸೈನಿಕ ಹುಳು	ಬಿತ್ತಿದ 15-20 ದಿನಗಳ ನಂತರ 0.5 ಮೀ.ಲೀ. ಸ್ಟ್ರೆನೋಟೋರಾಮ್ 11.7 ಎಸ್. ಸಿ. ಅಥವಾ 0.2 ಮೀ. ಲೀ. ಕ್ಲೋರ್ಯಾಂಟಿನಿಲಿಪ್ರೋಲ್ 18.5 ಎಸ್.ಸಿ. ಅಥವಾ 0.2 ಗ್ರಾಂ. ಎಮಾಮೆಕ್ವೀನ್ ಬೇಂಜೋಯಿಟ್‌ನ್ನು ಪ್ರತೀ ಲೀ. ನೀರಿಗೆ ಬೆರಸಿ ಬೆಳೆಯ ಸುಳಿಯ ಮೇಲೆ ಬಿಳುವಂತೆ ಸಿಂಪಡಿಸಬೇಕು. ಪುನಃ ಅವಶ್ಯವಿದ್ದಲ್ಲಿ ಪರಿವರ್ತಿತ ಕೀಟನಾಶಕಗಳ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.	ಬಿತ್ತನೆಗೆ ಮೊದಲು ಪ್ರತಿ ಕಿ.ಗ್ರಾಂ. ಬೀಜಕ್ಕೆ 6 ಮೀ. ಲೀ ಸೈಯಾಂಟ್ರಾನಿಲಿಪ್ರೋಲ್ 19.8% + ಥೈಯೋಮಿಥಾಕ್ಲಾಮ್ 19.8 ಡಬ್ಲ್ಯೂ/ ಡಬ್ಲ್ಯೂ ಎಫ್‌ಎಸ್ ಸಂಯುಕ್ತ ಕೀಟನಾಶಕದಿಂದ ಬೀಜೋಪಚಾರ ಮಾಡಿ ಬಿತ್ತನೆ ಮಾಡಬೇಕು. ಬಿತ್ತಿದ 15-20 ದಿನಗಳ ನಂತರ 0.15 ಗ್ರಾಂ. ಇಮಾಮೆಕ್ವೀನ್ ಬೇಂಜೋಯಿಟ್ 5%+ ಲುಪಿನ್ಯುರಾನ್ 40% ಡಬ್ಲ್ಯೂ ಜಿ ಸಂಯುಕ್ತ ಕೀಟನಾಶಕ ಅಥವಾ 0.5 ಮಿಲೀ ಕ್ಲೋರ್ಯಾಂಟಿನಿಲಿಪ್ರೋಲ್ 9.3% + ಲ್ಯಾಪ್ಲೆ ಸೈಹ್ಯಾಲೋಥ್ರಿನ್ 4.6% ರ್ಯುಡ್‌ಸಿ ಸಂಯುಕ್ತ ಕೀಟನಾಶಕ ಅಥವಾ 0.5 ಮೀ.ಲೀ. ಸ್ಟ್ರೆನೋಟೋರಾಮ್ 11.7 ಎಸ್. ಸಿ. ಅಥವಾ 0.2 ಮೀ. ಲೀ. ಕ್ಲೋರ್ಯಾಂಟಿನಿಲಿಪ್ರೋಲ್ 18.5 ಎಸ್.ಸಿ. ಅಥವಾ 0.2 ಗ್ರಾಂ. ಎಮಾಮೆಕ್ವೀನ್ ಬೇಂಜೋಯಿಟ್‌ನ್ನು ಪ್ರತೀ ಲೀ. ನೀರಿಗೆ ಬೆರಸಿ ಬೆಳೆಯ ಸುಳಿಯ ಮೇಲೆ ಬಿಳುವಂತೆ ಸಿಂಪಡಿಸಬೇಕು. ಪುನಃ ಅವಶ್ಯವಿದ್ದಲ್ಲಿ ಪರಿವರ್ತಿತ ಕೀಟನಾಶಕಗಳ ಸಿಂಪರಣೆ ಮಾಡಬೇಕು.

3. Management of fall army worm through seed treatment in maize.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಶೈಲಾ. ಎಚ್.ಎಮ್., ಡಾ. ಸಿ ಪಿ. ಮಲ್ಲಪುರ ಮತ್ತು ಡಾ.ಬಿ.ಎಸ್. ಗುರುಪ್ರಸಾದ

ಸಹ ವಿಜ್ಞಾನಿಗಳು: ಡಾ. ಸಿ. ಎಮ್. ರಫಿ, ಡಾ. ಎಸ್ ಎನ್. ಜಾಧವ, ಡಾ. ರೂಪಾ ಪಾಟೀಲ, ಡಾ. ಎಸ್. ಎಸ್.ಕರಬಂಟನಾಳ, ಡಾ. ಕಲಾವತಿ ಕಂಬಳಿ, ಡಾ. ಪ್ರಸನ್ನ ಪಿ.ಎಮ್., ಡಾ. ಧನಂಜಯ ಚೌಗಲಾ, ಡಾ. ಎನ್. ಜಿ.ಹನಮರಟ್ಟಿ ಮತ್ತು ಡಾ. ಟಿ. ಟಿ. ಬಂಡಿವಡ್ಡರ

4. Management of fall army worm through foliar sprays in maize.

5. Management of fall army worm through novel molecules in maize.

ಪ್ರಧಾನ ಸಂಶೋಧಕರು: ಡಾ. ಶೈಲಾ. ಎಚ್.ಎಮ್.ಮತ್ತು ಡಾ.ಸಿ ಪಿ. ಮಲ್ಲಪುರ

ಸಹ ವಿಜ್ಞಾನಿಗಳು: ಡಾ. ಸಿ. ಎಮ್. ರಫಿ, ಡಾ. ಎಸ್ ಎನ್. ಜಾಧವ, ಡಾ. ರೂಪಾ ಪಾಟೀಲ, ಡಾ. ಎಸ್. ಎಸ್. ಕರಬಂಟನಾಳ, ಡಾ. ಕಲಾವತಿ ಕಂಬಳಿ, ಡಾ. ಪ್ರಸನ್ನ ಪಿ.ಎಮ್., ಡಾ. ಧನಂಜಯ ಚೌಗಲಾ, ಡಾ. ಎನ್. ಜಿ.ಹನಮರಟ್ಟಿ ಮತ್ತು ಡಾ. ಟಿ. ಟಿ. ಬಂಡಿವಡ್ಡರ

TECHNICAL SESSION-IV

Chairman: Dr. H Bablad, Librarian, UAS, Dharwad

Co-Chairman: Dr. IM Sarwad, Dean (Agri), Agriculture College, Vijayapura

Rapporteurs: Dr. Kumara B Hand Mrs. Savitha Kanti

The chairman and Co-chairman of the session welcomed the members of the important session on formulation of new technical programme for the year rabi 2022-23 and briefed the importance of new technical programme in addressing the field problems. The University HOD's of seven departments presented deliberations of the technical programmes.

Sl. No.	Department	Continued experiments	New experiments	Total
1	Plant pathology	52	4	56
2	Entomology	64	5	69
3	Genetics and Plant Breeding	299	2	301
4	Seed Science and Technology	1	1	2
5	Soil Science and Agricultural Chemistry	7	2	9
6	Home Science	0	5	5
7	Agronomy	58	18	76

The details of following new technical programme were discussed and approved

Sl. No.	Title of the experiment/project	Principal Investigator	Funding agency	Remarks/suggestions
Plant pathology				
1	Effect of liquid formulations of <i>Pseudomonas fluorescens</i> on wilt complex and rust diseases of chickpea	Dr. Gurudatt. M. Hegde	AICRP	T8 & T9 > Combined for both diseases (Rust & Wilt) Days of occurrence of diseases and define the stage of spray/days of
2	Evaluation of fungicides against foliar diseases of sugarcane	PI: Dr. P.V. Patil Co-PI: Dr. S.V. Hugar and Dr. Sanjay Patil	AICRP	Frame the on more experiment on sets with different zone (Jamkhandi)
3	Screening of chickpea genotypes for wilt complex and rust	Dr. Prabhavati Rao	AICRP	-
4	To study the disease scenario on Ajwain crop by survey in Vijayapur and Bagalkot district	Dr. Basamma Kumbar	AICRP	Need to be done a combined survey work from both pathology and Entomology

Entomology				
1	Management of root borer, <i>Polyochadespressella</i> Swinhoe [= <i>Emmaloceradespressella</i> (Swinhoe)] (Lepidoptera: Pyralidae) in Sugarcane	Dr. Shiddalingappa V. Hugar		T8> with and without cowpea in all chemical combination; if number of treatment more reduce replication
2	Survey and Surveillance of insect pests in soybean during rabi/summer season	Dr. R. Channakeshava Dr. C.M. Rafee, Dr. P.M. Prasanna & Dr. A.H. Biradar	AICRP	<ul style="list-style-type: none"> • Asked to take University varieties of Soybean • Add Hanagal to the list in Haveri district
3	Management of sucking pests in soybean at different locations	Dr. R. Channakeshava Dr. Subhash Kandakoor Dr. C.M. Rafee, Dr. P.M. Prasanna and Dr. A.H. Biradar	AICRP	<ul style="list-style-type: none"> • Add Hukkeri and remove Devihosur for Zone-8 • Sticky trap common to all treatment. • Based on the concentration, formulate/change the T6.
4	Eco-friendly management of sucking insect pest in summer groundnut	Dr. Rohini Sugandi	AICRP (G)	<ul style="list-style-type: none"> • T4> common traps for all treatments • Asked to remove the T1 and add the word "need based" in treatment T8
5	Development and bio-efficacy of liquid formulations of <i>Metarhiziumanisopliae</i> against <i>Helicoverpa armigera</i> Chickpea and black gram	Dr. Shekharappa	RKVY PROJECT	Accepted
Genetics and Plant Breeding				
1	Genetic improvement through hybridization and induced mutation in horsegram (<i>Macrotyloma uniflorum</i> Lam. (Verdc.))	Dr. Bangaremma Wadeyar		Accepted
2	Identification of Sorghum hybrids and parent lines for Rabi under protective irrigation	NG Hanamaratti, G M Sajjanar, Basavaraj Bagewadi, Bandiwaddar TT,		Accepted

		ShailaHM, Karbantnal, Anjum		
Seed Science and Technology				
1	Influence of Bio-priming and Plant geometry on seed yield and quality of wheat	PI-Dr. D. S. Uppar Co-PI: Dr. J.S. Hilli Dr. Kumar Lamani		After harvest of the crop, seed quality should be checked. Add other priming (chemical/hydro) to the treatments set:
Soil Science and Agricultural Chemistry				
1	Biofortification of wheat grains (<i>Triticum aestivum</i> L.) with nano zinc through foliar application	Dr. S.S. Gundlur		Conduct this experiment at MARS, Dharwad
2	Nutrient Requirement of Sugar Beet by Conjoint use of FYM and Chemical Fertilizer based on targeted yield approach on Inceptisol	Dr. A.D. Kadlag		Not accepted
AICRP-Women in Agriculture				
1	Programme 1: Create, characterize, classify and maintain the repository of database to analyze the dynamics and role of women in different sectors of agriculture in different agro-ecological regions	PI: Dr. Geeta Channal Co-PI: Dr. Manjula Patil	AICRP (WIA)	-Selection of districts: Gadag, Haveri and Uttara Kannada
2	Programme 2: Standardization of Techniques For Livelihood Analysis and Women Empowerment in different Agro-Ecological Zones	PI: Dr. Sannapamma K J Co-PI: Dr. Geeta Channal	AICRP (WIA)	-Selection of districts: Belgaum and Chitradurga
3	Programme 3: Community-based technological interventions for food, nutrition, livelihood securities & entrepreneurship development for farm	PI: Dr. Manjula Patil Co-PI: Dr. Geeta Channal	AICRP (WIA)	-Selection of districts: Haveri and Gadag
4	Programme 4: Vulnerability Framework for climate change and Drudgery Reduction for Women in Agriculture	PI: Dr. Rajeshwari Desai Co-PI: Mrs. Chaitanya Itagi	AICRP (WIA)	-Selection of districts: Gadag and Haveri
5	Programme 5: Assessment, refinement and popularization of gender friendly technologies and skill enhancement of farm women	PI: Mrs. Chaitanya Itagi Co PI: Dr. Rajeshwari Desai	AICRP (WIA)	-Selection of districts: Gadag and Haveri
Agronomy				
1	Quantifying the response of pre-released <i>rabi</i> sorghum genotypes to different fertilizer levels under receding soil moisture environment (AICRP trial)	Dr. T.T. Bandiwaddar	AICRP-Sorghum	Accepted

2	Organic <i>rabi</i> sorghum production (permanent plot study for 5 years) (AICRP trial)	Dr. T.T. Bandiwaddar	AICRP-Sorghum	Remove the ZBNF treatment
3	Foliar nutrition for boosting of <i>rabi</i> sorghum productivity (AICRP trial)	Dr. T.T. Bandiwaddar	AICRP-Sorghum	Accepted
4	Evaluation of Promising fodder oat genotypes to different sowing window for their biomass productivity	Dr. R. B. Negalur,	Fodder Scheme	Include a breeder for an evaluation of the genotypes
5	Assessment of fodder potential of sweet corn after the harvest of cobs at different sowing windows	Dr. R. B. Negalur,	Fodder Scheme	Asked to take only one genotype with four spacing
7	Agronomic evaluation of AVT2 (kabuli + extra large seeded kabuli)		AICRP on Chickpea	Accepted
8	Agronomic evaluation of AVT2 DTIL (drought tolerance introgression lines)		AICRP on Chickpea	Accepted
9	Effect of different planting time on growth and yield of soybean	Dr. G. Somanagouda CoPI : Dr Shalini NH Dr. G. K. Naidu Dr. R. Channakeshava	AICRP	Accepted
10	Testing trial on Effect of secondary nutrient mixture fertilizers on productivity of summer groundnut			Accepted
11	Effect of different planting time on growth and yield of soybean	Dr. G. Somanagouda CoPI : Dr Shalini NH Dr. G. K. Naidu Dr. R. Channakeshava	AICRP	Accepted
12	Testing trial on Effect of secondary nutrient mixture fertilizers on productivity of summer groundnut			Asked to add one more treatment on Ca equivalent to Gypsum
13	Effect of nutrient levels on yield and quality of pre-seasonal sugarcane grown on medium deep soils	Dr. A.D. Kadlag, Dr. S.S. Nooli	AICRP (Sugar cane)	Accepted
14	Yield target based nutrient management for pre-seasonal early, mid-late and late sugarcane varieties grown on medium deep soils	Dr. A.D. Kadlag, Dr. S.S. Nooli	AICRP (Sugar cane)	Accepted

15	Response of sugarcane to drip with fertigation in pre-seasonal planting	Dr. A.D.Kadlag, Dr.S.S.Nooli	AICRP (Sugar cane)	Retaining of sugarcane varieties: SNK-9211, SNK-13436 and SNK-9293
16	Evaluation of post-emergence herbicides for weed management in maize ecosystem	Dr.S.R.Salakinkop		Asked to evaluate the Atrazine alone as treatment and add one more treatment on weed free check (total treatments will be 10)
17	Studies on the effect of drip fertigation levels on growth and yield of chilli in Malaprabha Command Area		AICRP (WM)	Accepted
18	Studies on the effect of drip fertigation levels on growth and yield of Ladies finger in Malaprabha Command Area		AICRP (WM)	Accepted

