

AGRICULTURAL RESEARCH STATION, MANDOR, JODHPUR

Proceedings of Zonal Research and Extension Advisory Committee meeting *Kharif*, 2020

Venue: ARS, Mandor

Zone: IA & partly IIA (Nagaur)

Dated: March 03-04, 2020

Dr. J. R. Verma, Associate Professor (Plant Pathology) and Nodal Officer (Linkages) welcomed Prof. Ishwar Singh, Director Extension Education, Sh. V. K. Pandey, Joint Director Agriculture (Extn.), Sh. N. R. Bamniya, Joint Director Horticulture, Jodhpur and all the officers from the Dept. of Agriculture, Horticulture, Scientists from the University, CAZRI, ATCs, KVKs and other line Departments. At the outset, Prof. Ishwar Singh, Director Extension Education & Chairman of the meeting highlighted the research activities of the University. He stressed scientists to plan research work which is feasible to farmers. He also informed about crop improvement research work going on sesame, castor, pearl millet and potential crops at the research station. He also emphasized on the hybrid seed production of pearl millet taken up at different research stations of the University. Sh. V. K. Pandey, Joint Director (Ag. Extn.), Jodhpur appealed the scientists to develop need based technologies for farmers. Sh. N. R. Bamniya, Joint Director (Horticulture), Jodhpur appealed the scientists to develop organic production technologies. After discussion, the proceeding of ZREAC *Kharif* 2019 was approved by the house. Powerpoint presentations were made by scientists from Agriculture University, Jodhpur, scientists from ATCs, KVKs and officers of State Agriculture and Horticulture Departments of the zone.

Dr. Ramesh, Assistant Professor (Plant Breeding) presented data on sesame varietal trial in absentia of Dr. Sita Ram Kumhar, Professor (Plant Breeding) and ZDR, ARS, Mandor. He presented data on germplasm, IVT, AVT and breeding material trials conducted under AICRP-Sesame. In Initial Varietal Trial, RT 388 produced higher seed yield (793 kg/ha) over best check TKG-22 (771 kg/ha) and RT 387 (764 kg/ha) was found better than check GT 10 (667 kg/ha). In Advance Varietal Trial (AVT) only one entry RT 385 (on two years' mean basis) produced numerically higher seed yield (879 kg/ha) over the best check TKG 22 (835 kg/ha). After discussion, house decided to test entry RT 385 at ATC, Rampura.

(Action: Dy. Director, ATC, Rampura)

Dr. Mamta Nehra, Assistant Professor (GPB) presented two years pooled data (2018 and 2019) on mungbean varietal trial and reported that varieties COGG-912 (1458 kg/ha) and LGG-460 (1320 kg/ha) produced higher seed yield over the best check GM-4 (1261 kg/ha).

Dr. M. L. Mehriya presented two years pooled (2018 and 2019) data on mitigation of moisture stress through growth regulator for enhancing mungbean productivity and reported that the foliar spray of GA₃ @ 30 ppm at flowering and pod initiation stage increased the seed yield over the control. After discussion, it was decided to test at ATC, Rampura.

(Action: Dy. Director, ATC, Rampura)

He also presented two years (2018 and 2019) pooled data on effect of fertilizer doses, organic manure and biofertilizer for yield maximization in mungbean and their effect on succeeding rabi crop. He reported that application of 100% RDF significantly increased seed yield (976 kg/ha), net return (Rs. 45924/ha) and B:C ratio (3.1). Application of FYM @ 5 ton/ha significantly increased seed yield (1055 kg/ha), net return (Rs. 50364/ha) and B:C ratio (3.2) over no FYM treatment (848 kg/ha). Similarly, application of Rhizobium+LNm 16 culture significantly increased seed yield (982 kg/ha), net return (Rs. 46314/ha) and B:C ratio (3.1) over LNm 16 (949 kg/ha). House decided to include selected treatment in the PoP of zone Ia and simultaneously testing of Rhizobium+LNm 16 with 80 percent RDF at ATC, Rampura.

(Action: Dy. Director, ATC, Rampura)

He further presented two years (2018 and 2019) pooled data on response of *kharif* groundnut to plant geometry and fertility levels in light soils. Data revealed that the fertility levels, RDF @ 125% recorded the maximum no. of pods/plant, seed index, shelling%, pod, haulm and biological yield, however it was statistically at par with RDF @ 100%. Among plant geometry treatments, plant population of 4 lakh/ha (25 x 10 cm) recorded statistically at par yield with plant population @ 5 lakh/ha (20 x 10 cm) but numerically

Dr. Jhumar Lal, AARO (Ento), ATC, Rampura presented data on bio-efficacy of different bio-pesticides against sucking pest complex of clusterbean and sesame. He reported that foliar application of *Lecanicillium lecanii* @ 10g /liter of water significantly reduced the pest population (aphid, jassid & white fly) over control in clusterbean and sesame and recorded significantly higher seed yield. The house decided to include the selected treatment in the PoP of zone Ia.

(Action: JhumarLal, Nodal Officer and Jt. Director Ag)

Dr. J. R. Verma, Associate Professor (Patho.) and Nodal Officer (Linkages) presented linkage and extension activities carried out during the season.

Dr. Shalini Pandey, Asstt. Prof. (Ento), ARS, Mandor presented the record of plant health clinic, problems registered by the farmers and their solutions provided by Scientists during the season.

Dr. K. S. Jadon, Senior Scientist (Plant pathology), ICAR-CAZRI, Jodhpur presented the results of an experiment on development of a prophylactic integrated pest management module for groundnut. He concluded that the module comprising soil amendment with neem cake @ 250 kg/ha coupled with vermicompost @ 2.5 tonnes/ha, seed dressing with *Trichoderma viride* @ 5 ml/kg seed and furrow application with *Metarhizium anisopliae* @ 3 lit./ha in 500 lit. of water/ha followed by one spray of Difenaconazole 500 ml/500 lit./ha at 40 days after sowing, soil application of Imidacloprid 333 ml/1000 lit. at 50 days after sowing and one spray of Chlorpyrifos 1.5 litre/500 lit. of water/ha at 60 days after sowing can be used for effective pest management in groundnut.

Dr. H. M. Meena, Scientist (Agro. Meteorology), ICAR-CAZRI, Jodhpur presented data of experiments on quantification of water and energy balance components for groundnut and summer clusterbean in arid western Rajasthan. He concluded that crop yield of groundnut was reduced by only 8.7% at 80% irrigation level but it saved 92.5 mm (12.9%) more water compared to 100% irrigation. Therefore, irrigation at 80% level in groundnut crop was more suitable. Similarly cluster bean yield at 80% irrigation level was only 10% less when compared to 100% irrigation; however, it saved 132 mm (19%) more water. Therefore, for arid zone condition, where water is a precious natural resource, the irrigation level at 80% is more suitable. He added that in summer guar, 550-560 mm water is required in 10 to 12 irrigations through sprinkler method by which the crop can be grown with 20% less water.

Dr. B. S. Rathore, Senior Scientist and Head, KVK, ICAR-CAZRI, Jodhpur-I, Dr. S. R. Kumawat, Sr. Scientist & Head, KVK, Phalodi, Jodhpur-II, Sh. Shayam Das, Subject Matter Specialist (Agronomy), KVK, Barmer-I, Dr. Pradeep Pagariya, Sr. Scientist & Head, KVK Gudamalani, Barmer-II, Dr. Hari Ram Choudhary, Asstt. Prof. (Agronomy), KVK, Nagaur-I, Dr. Arjun Singh Jat, Sr. Scientist & Head, KVK, Nagaur-II presented activities of respective KVKs. They highlighted the activities viz., Off and On campus training programme conducted by these KVKs on Agronomy, Horticulture, Plant Protection, Livestock, Home Science, Agro-forestry and Ag. Extension disciplines. Training programmes conducted through ATMA and other projects on value addition of fruits & vegetable, dairy management, goat rearing technologies, control of livestock diseases, front line demonstrations, success stories of progressive farmers and post-harvest technologies carried out by these KVKs were also presented. Technology gap and action taken were also discussed during presentation.

Dr. S. R. Kumawat, Sr. Scientist & Head, KVK, Phalodi, Jodhpur-II while presenting the results of fields demonstration he reported that management of white grub within 21 days of first monsoon or pre-monsoon rains (i.e. period of maximum emergence of beetles) was effectively done by broadcasting of soil mixed with Imidacloprid 17.8 SL @ 300 ml/ha followed by light irrigation. House decided to include the treatment in the PoP of zone Ia.

(Action: S. R. Kumawat, Gajanand Nagal, Nodal Officer and Jt. Director Ag)

Extension activities carried out in Jodhpur and Barmer districts were highlighted by the concerned Dy. Directors. Area, production and productivity of different crops and rainfall data of the respective districts were presented. Crop demonstration conducted on different *Kharif* crops pearl millet, moth bean, green gram, sesame and other crops were also presented. Feedback, pests and diseases problems encountered on the various crops in the season were also presented and discussed.

The Dy. Director (Hort.), Jodhpur highlighted the various activities viz., area, production and productivity of different horticultural crops, minikits and demonstrations in fruits and vegetables, different projects under National Horticulture Mission etc. were presented.

Action taken on feedback problems Kharif, 2019

S. No.	Component	Problem	Action taken/ informed
1.	Pearl millet	Varieties for saline soil	Research to be initiated
2.	Legume	Varieties for saline soil	Research to be initiated
3.	Oilseed/ legume	Lack of new varieties (Notified)	Available in PoP
4.	Sesame	Phyllody	Management technology available in PoP
5.	Mungbean/ Mothbean	Yellow vein mosaic disease	Timely spray systemic insecticides available in PoP
6.	Cluster bean	Dry root rot	Management technology to be included in PoP
7.	Castor	Maleness on the primary raceme resulting poor yield in first picking	Sowing from 15 th July - 7 th August, quality seed, use of balance fertilization and timely & controlled irrigations can reduce maleness in castor
8.	Pomegranate	Fruit cracking, Nematode problems and Lack of Pomegranate production & protection technology in Pop	Available technologies in other institute can be borrowed and a chapter on pomegranate will be included in the PoP of Zone Ia.
9.	All crops	Locust problem	

Sh. B. K. Dwivedi, Regional Manager, RSSC, Mandor, Jodhpur apprised the house about seed availability of different varieties of *Kharif* crops.

Sh. V. K. Pandey, Joint Director (Agriculture), Jodhpur and Sh. N.R. Bamaniya, Joint Director (Horti.), Jodhpur appreciated the fruitful findings of two days deliberations.

Participants of ZREAC meeting along with University scientists visited different trials conducted on chia, quinoa, asalia, fenugreek, chickpea, cumin, wheat, mustard production & protection trials, and seed production programmes at ARS, Mandor.

Chairman in his concluding remarks stressed that technical programme must be based on feedback and research mandates. He asked the scientists to discuss problems in monthly workshop. Diagnostic team visit in the season and report may be submitted. He thanked all the participants for their active participation in ZREAC deliberations.

The meeting ended with vote of thanks to the Chair and participants.

Recommendations approved for inclusion in package of practices of Zone-IA

- Varieties
 - Castor : GCH 8
- Application of *Rhizobium*+LNm 16 culture in mungbean with 100 percent RDF.
- Soil application of 25 kg/ha zinc sulphate (21%) at sowing and foliar spray of ferrous sulphate (19%) at 30 and 45 days in pearl millet.
- Application of Salicylic acid 100 ppm as foliar spray at 30 days after sowing in sesame.
- Seed treatment of thiram 37.5 + carboxyn 37.5 at 2 g/kg seed in mothbean against dry root rot.
- Soil treatment of *Trichoderma viride* 2.5 kg /ha in 100 FYM against dry root rot in clusterbean
- For the management of white grub in groundnut within 21 days of first monsoon or pre-monsoon rains (i.e. period of maximum emergence of beetles), broadcasting of soil mixed with Imidacloprid 17.8 SL @ 300 ml/ha followed by light irrigation.
- Use of *Verticillium lecanii* (*Lecanicillium lecanii*) 10 g/l in cluster bean and sesame against whitefly, jassid and aphids.

List of Participants

Agriculture University, Mandor

1. Dr. Ishwar Singh, Director Extension Education, Agriculture University, Jodhpur
2. Dr. Vikas Khandelwal, Sr. Scientist (GPB), AICRP-Pearl Millet, Jodhpur
3. Dr. J. R. Verma, Assoc. Prof. (Plant Pathology), ARS, Mandor
4. Dr. S. K. Moond, Assoc. Prof. (Horti.), COA, Mandor
5. Dr. M. L. Mehriya, Asstt. Prof. (Agro.), ARS, Mandor
6. Dr. Moola Ram, Asstt. Prof. (Agro.), ARS, Mandor
7. Dr. M. L. Meena, Asstt. Prof. (Horti.), ARS, Mandor
8. Dr. Ramesh, Asstt. Prof. (GPB), ARS, Mandor
9. Dr. Rekha Kumawat, Asstt. Prof. (Plant Pathology), ARS, Mandor
10. Dr. Rahul Bhardwaj, Asstt. Prof. (GPB), ARS, Mandor
11. Dr. Rakesh Choudhary, Asstt. Prof. (Agro), ARS, Mandor
12. Dr. Mamta Nehra, Asstt. Prof. (GPB), ARS, Mandor
13. Dr. Vikaram Singh Meena, Asstt. Prof. (GPB), ARS, Mandor
14. Dr. Manish Kumar, Asstt. Prof. (Plant Pathology), ARS, Mandor
15. Mrs. Neelam Geat, Asstt. Prof. (Plant Pathology), ARS, Mandor
16. Dr. Shalini Pandey, Asstt. Prof. (Ento), ARS, Mandor
17. Dr. R. Sutaliya, Assoc. Prof. (Agro.) & OI, ARSS, Samdari
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19. Dr. Rajdeep, Asstt. Prof. (GPB), ARSS, Nagaur
20. Dr. S. R. Kumawat, Senior Scientist & Head, KVK, Phalodi
21. Dr. Padeep Pagariya, Senior Scientist & Head, KVK, Gudamalani
22. Dr. A. S. Jat, Senior Scientist & Head, KVK, Maulasar, Nagaur
23. Dr. Hari Dayal Choudhary, SMS (Horticulture), KVK, Nagaur-I
24. Dr. Shakti Singh Bhati, Asstt. Prof. Nematology, CoA, Nagaur
25. Sh. Sanjay Malpani, TA, ARS, Mandor

Department of Agriculture and Horticulture, Government of Rajasthan

26. Sh. V. K. Pandey, Joint Director (Ag. Ext.), Jodhpur
27. Sh. N.R. Bamaniya, Joint Director (Horti.), Jodhpur
28. Sh. V. S. Solanki, Dy. Director (Ag. Ext.), Jodhpur
29. Sh. O. P. Pandey, Dy. Director (Agro.), ATC, Rampura
30. Sh. Harish Mehra, PD, ATMA, Jodhpur
31. Sh. B. K. Dwivedi, Regional Manager, RSSCL, Mandor, Jodhpur
32. Sh. K. L. Verma, DD, Ag., Barmer
33. Sh. N. S. Bhati, Dy. PD, ATMA, Jodhpur
34. Sh. J. N. Swami, Dy. Dir. Horti, Jodhpur
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36. Sh. B. R. Manda, Ad., Horti., Jodhpur
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45. Sh. Rupesh Lawa, AO (Gen.), Agri. Deptt.
46. Dr. J. P. Singh, ARO (Chem), Dy. Director, Agri. Jodhpur
47. Dr. Jhumar Lal, AARO (Ento), ATC Rampura

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49. Dr. H.M. Meena, Scientist (Agro. Meteorology), ICAR-CAZRI, Jodhpur
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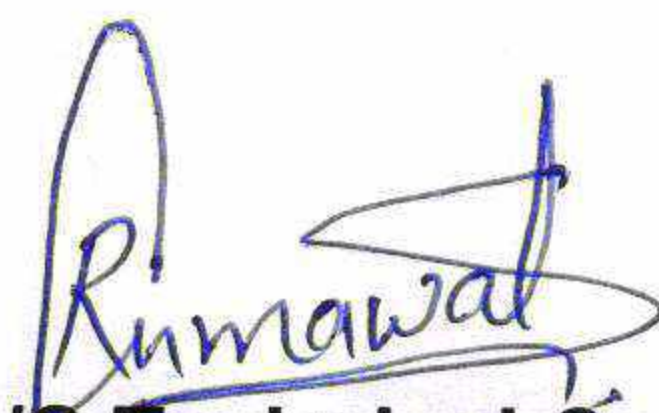
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No. F.4/ ZREAC/MND/ARS/2020/236

Date: 06.05.2020

Copy forwarded to the following for favour of information and necessary action:

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2. The Director Horticulture, GOR, Directorate of Horticulture, Pant Krishi Bhawan, Jaipur
3. The Addl. Director of Agriculture (Ext.), GOR, Pant Krishi Bhawan, Jaipur
4. The Addl. Director of Agriculture (Research), GOR, Pant Krishi Bhawan, Jaipur
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9. The Director Extension Education, Agriculture University, Jodhpur 342 304
10. The Project Coordinator, AICRP on Pearl Millet, PC Unit-PearMillet, ARS, Mandor
11. The Zonal Director Research, Keshwana (Jalore)
12. The Dean, COA, Mandor/Nagaur
- 13-14. O.I., ARSS, Nagaur/Samadari
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29. The Regional Manager, RSSCL, Mandor, Jodhpur
30. The Scientists, ARS, Mandor


I/C Technical Cell