JUNAGADH AGRICULTURAL UNIVERSITY

RESEARCH RECOMMENDATIONS FOR FARMERS COMMUNITY

VIII. BASIC SCIENCE

Total 18 recommendations developed by Basic Science disciplines are described herein.

Year: 2006-07

1. Germination study in Jivanti

The nurserymen and medicinal plant growers of Saurashtra region are advised to grow *dodi (Jivanti)* seed immediately after removal from follicle for obtaining maximum germination. The seeds sown up to three weeks after removal from follicle germinate up to 65 per cent.

(*Department of Genetics & Plant Breeding, CoA, JAU, Junagadh*)

Year: 2007-08

2. Germination study in Rukhdo (*Adansonia digitata*)

The nurserymen are advised to sow fresh seeds of Rukhdo (*Adansonia digitata*) treated with 40 % sulfuric acid (H_2SO_4) for 48 hrs or the seed cracked with hexoblade to get maximum seed germination.

(*Department of Genetics & Plant Breeding, CoA, JAU, Junagadh*)

Year: 2012-13

3. The effect of harvesting dates on fresh seed dormancy in pearl millet hybrids

Farmers of South Saurashtra Agro-climatic Zone taking hybrid seed production of pearl millet are recommended to harvest the crop between 25 to 35 days after flowering. They are also recommended to dry and store the seed for 20 to 30 days after harvesting them, in order to get maximum germination and enhanced seedling vigour.

(*Department of Genetics & Plant Breeding, CoA, JAU, Junagadh*)

Year: 2013-14

4. Effect of NAA on seed cotton (*Gossypium hirsutum* L.) yield

The farmers of South Saurashtra Agro-climatic Zone growing Bt cotton under irrigated condition are advised to spray growth promoter Naphthalene Acetic Acid (NAA) @ 30 ppm (300 mg /10 lit. water) at 50 DAS & 70 DAS for better growth to obtain higher seed cotton yield and net return. This is due to high chlorophyll content, increase in plant height, thickness of leaves, length of sympodia, number of squares and number of bolls.


5. Effects of plant growth regulators on buds and bolls shedding in cotton (*Gossypium hirsutum* L.)

The farmers of South Saurashtra Agro-climatic Zone growing Bt cotton under irrigated condition are advised to spray growth inhibitor cycocel / chlormequat chloride (CCC) @ 40 ppm at 90 DAS (400 mg / 10 lit. water) for minimizing buds and bolls shedding to obtain higher seed cotton yield and net return. This is due to high chlorophyll content, increase in thickness of leaves, number of squares, number of bolls and minimum boll shedding.


(*Cotton Research Station, JAU, Junagadh*)

Year: 2014-15

6. Effect of brassinolide foliar spray on yield and yield attributing characters of wheat

Not included as recommendation does not confirm the guideline of CIB.

(*Department of Genetics & Plant Breeding, CoA, JAU, Junagadh*)

7. Response of sesame (*Sesamum indicum* L.) to growth regulators

Not included as recommendation does not confirm the guideline of CIB.

8. Effects of foliar application of organic and inorganic substances on the yield of chickpea (GJG-3) under limited water supply

The farmers of North Saurashtra Agro-climatic Zone (AES-VI) growing chickpea (var. GJG-3) in *rabi* season are recommended to apply two irrigation (one at flowering and second at pod development stage) along with recommended dose of fertilizer (20:40 NP kg/ha) and foliar application of KNO_3 @ 2 per cent twice at flowering and pod development stages for obtaining higher yield and maximum net return.

(*Main Dry Farming Research Station, JAU, Targhadia*)

9. Effect of foliar spray of plant growth retardants on growth and yield parameters of *kharif* groundnut

Not included as recommendation does not confirm the guideline of CIB.

(Main Oilseed Research Station, JAU, Junagadh)

Year: 2015-16

10. Effect of foliar spray of micro-nutrients on growth and yield parameters of summer groundnut

The farmers of South Saurashtra Agro-climatic Zone growing summer groundnut are advised to apply the foliar spray of zinc sulfate 0.5 % (2.5 Kg ha^{-1} in 500 liter water) at 35 and 70 DAS for higher vegetative growth, pod yield and net return.

(Main Oilseed Research Station, J.A.U., Junagadh)

11. Effect of plant growth regulators and detopping on yield of Bt cotton (*Gossypium hirsutum* L.) under rainfed condition

Not included as recommendation does not confirm the guideline of CIB.

(Main Dry Farming Research Station, JAU, Targhadia)

12. Effect of plant growth regulators and detopping on morpho-physiological components of yield in cotton (*G. hirsutum* L.)

The farmers of South Saurashtra Agro-climatic Zone growing Bt cotton under irrigated condition are recommended for detopping the cotton plant at 75 DAS for balance growth to obtain higher seed cotton yield and net return. This is due to high chlorophyll content, increases in thickness of leaves, length and number of sympodia, plant spread and number of bolls.

(Cotton Research Station, J.A.U., Junagadh)

Year: 2016-17

13. Effect of brassinolide on physiological and yield related traits of chickpea and their relationship with yield

Not included as recommendation does not confirm the guideline of CIB.

(Department of Genetics and Plant Breeding, JAU, Junagadh)

14. Efficiency of foliar spray of growth regulating substances for enhancing seed yield of pearl millet under rainfed condition

The farmers of North Saurashtra Agro-climatic Zone growing *kharif* pearl millet are advised to go for foliar application of potassium chloride 1.5 % (7.5 kg ha^{-1} in 500 liter water) at 30-35 and 50-55 DAS for higher vegetative growth, seed yield and net return.

(Main Pearl Millet Research Station, JAU, Jamnagar)

Year: 2017-18

15. Effect of growth regulator, organic and inorganic foliar nutrition on the growth and yield of blackgram (*Vigna mungo* L.) under rainfed condition

The farmers of North Saurashtra Agro-climatic Zone-VI growing blackgram in *kharif* under rainfed condition are advised to spray Gibberellic Acid (GA_3) 1 g/10 litre water (100 ppm) at flowering (35-40 DAS) and pod development (55-60 DAS) stages for obtaining higher seed yield and net return.

(Main Dry Farming Research Station, JAU, Targhadia)

Year: 2018-19

16. Influence of weather parameters on cotton (*Gossypium hirsutum* L.) phenology and seed cotton yield

The farmers of South Saurashtra Agro-climatic Zone sowing early (31st May) and late (10th July) Bt cotton hybrids under irrigated condition are advised to sow cotton crop timely (20th June) for increasing chlorophyll content, leaf area, specific leaf weight, higher heat use efficiency, reduce

pink bollworm damage, higher seed cotton yield and net return. Farmers preferring early sowing (31st May) are also advised to sow G.Cot. Hy-8 for higher seed cotton yield and net return.

(*Cotton Research Station, JAU, Junagadh****)***

17. Manipulation of source-sink relationship in pearl millet through growth retardants

The farmers of North Saurashtra Agro-climatic Zone growing *kharif* pearl millet are advised to apply foliar spray of CCC (chloromequet chloride, 99 %) @ 250 ppm (2.5 ml/ 10 liter water) at tillering and post-anthesis stage to get higher grain yield and net return.

(Main Pearl Millet Research Station, JAU, Jamnagar**)**

Year: 2019-20

18. Effect of integrated nutrient management on growth and yield of chickpea under North Saurashtra region

The farmers of North Saurashtra Agro-climatic Zone growing chickpea (GJG-3) in *rabi* season are advised to apply 50 % of RDF (N:P:K 10:20:0 kg) + 10 kg K_2O + 5 kg bentonite + 500 kg vermicompost per hectare under three irrigations for obtaining higher yield and net returns due to enhancement in growth parameters like increase in number of pods and pod weight.

(Main Dry Farming Research Station, JAU, Targhadia)