

## **case study of technology adoption**

- **Title of the Case Study**

Assessment of soil test based application of Zinc Sulphate in rice for management of Khaira disease

- **Introduction**

Khaira disease is one of the major problems of rice which is caused by deficiency of Zinc micronutrient. Many studies indicated that the yield of rice can be reduced by 20-30%, if Zinc is deficient in the soil; therefore, the application of Zinc sulphate at the time of puddling based on the report of soil testing is highly recommended for the better production of rice.

- **Details of technology**

Application of soil test-based Zinc Sulphate in rice for management of Khaira disease

Application of Zinc Sulphate approximately 25kg/ha.

- **Source of technology**

This technology is adopted from Indian Institute of Soil Science (IISS) Bhopal M.P.

- **Conceptual framework and Related Scientific Review of literature**

- **Key characteristics of the technology**

Soil test based application of fertilizers to increase the yield and reduces the incidence of Khaira disease in rice. Best application time for Zinc sulphate is at the time of puddling and field preparation for rice transplanting.

- **Farmers' perception of technology**

Farmers should use this Soil test based Zinc sulphate management to increase the yield and reduce cost of cultivation.

- **Farmers' learning of technology, training, adoption and diffusion**

Training of the technology provided to the farmers since nursery raising and transplanting of the paddy to the main field. Training provided on integrated nutrient management and Zinc management in rice field for management of khaira disease. Farmer also adopted this technology quickly because it reduces the incidence of khaira disease and improves the yield of rice.

- **Reasons for adoption of technology**

Because it reduces the incidence of khaira disease and improves the yield of rice.

- **Reasons for not adoption of technology**

Technology adopted successfully

- **Reasons for change in use of technologies/ Refinement of Technology (If any with relevant details)**

Nil

- **Adoption and dissemination difficulties / obstacles encountered and strategies adopted for effective dissemination**

Since Khaira disease is a nutrient deficiency based problem in the rice field therefore we have to convey the farmers at the time of transplanting otherwise it will too late. Visual display of previous year Khaira disease symptoms to the farmers is the effective way to convey the farmers because the application of Zinc sulphate should be done at the time of fields preparation, once the symptoms are appeared the khaira disease cannot be controlled.

- **Mechanism for technology dissimulation by KVK**

Intensive training provided to farmers with the help of visual display of Khaira disease symptoms to the farmers. Field visit for farmers also arranged to the affected filed by khaira disease to convey the farmers for adopting this technology to their own field before incident of khaira disease.

- **Government policy support for technology promotion & adoption & role of line dept.**

The cost of Zinc sulphate, soil testing, trainings and other material is provided by Government and other technical guidance is provided by line department.

- **Training and support role of KVK**

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- **Findings on Important parameters related to technology application**

Findings on important parameters such as Yield q/ha, Disease incidence %, No of effective tillers/hill, No of Panicles/plant and No of Grains/panical etc.

- **Economic Parameters (economics per ha/unit mentioning unit size)**

Yield q/ha (1 ha)

- **Impact of technology with details (production, yield enhancement, cost saving, input saving, social, economic and environmental impact)**

**This is the average sum of five farmers each having 0.5 Acre land and total 01 ha.**

**Variety of rice was PUSA-1121**

| <b>Details of technology</b>                                     | <b>Name of Parameter</b> | <b>Unit of Parameter</b> | <b>Average Cost of cultivation (Rs/ha)</b> | <b>Average Gross Return (Rs/ha)</b> | <b>Average Net Return (Rs/ha)</b> | <b>Benefit-Cost Ratio (Gross Return / Gross Cost)</b> |
|--|--------------------------|--------------------------|--|-------------------------------------|-----------------------------------|---|
| T1 (Farmers Practice)  | Yield                    | Q/ha                     | 58858                                      | 136190                              | 77332                             | 2.31  |
| T2(Recommended Practice Application of Zinc sulphate @ 25 kg/ha) | Yield                    | Q/ha                     | 60550                                      | 153900                              | 93350                             | 2.54  |

- **Horizontal spread of the technology**

Now a days this technology is spread in the whole district, Hoshangabad M.P. Approximately 150 ha area is cover by Krishi Vigyan Kendra Hoshangabad under this technology. Farmer are aware to apply Zinc sulphate at the time of paddling since its absorption starts from 30-35 days after transplanting.

- **Strengths-Weaknesses-Opportunities-Challenges (SWOC) of technology adoption in the district/ region**

**(Include high quality relevant photographs, tables and illustration)**



**Fig. 1 Distribution of Zinc sulphate to Farmers**



**Fig. 2 Technical Data observation**



**Fig. 3 Technical Data observation**



**Fig. 4 Field visit (Kothari Village, Bankhedi Block, Hoshangabad District)**