

IIHR Micronutrient Mixture – A real yield booster in vegetable crops

A. Situation analysis / problem statement

In Thiruvannamalai district, the area under vegetable crops is 4260 ha. The major vegetable crops cultivated in the district are cucurbits (Cucumber, Gourd, Watermelon, pumpkin), solanaceous vegetables (Brinjal, Bhendi, Tomato, Chilli), and leafy vegetables. The vegetable growing has been one of the main sources of income for larger number of farmers in the district. The farmers are only using recommended fertilizers by the local retail shop which is not equal to the recommendations by the university and other stakeholder. Moreover, the farmers have not aware of the use of micronutrients in vegetable cultivation which minimized the expected yields in the field conditions.

Problems identified

Farmers in Thiruvannamalai district are spending huge money on fertilizers. It is of great concern that each farmer is spending about 60-70 % of cost of production only on fertilizers. KVK has conducted a survey in the vegetable growing area in the district revealed that farmers are applying fertilizers indiscriminately. No farmer is aware of recommended dosage of fertilizers for vegetable crops. The role of micronutrients was known to very few farmers. The yield and income levels of vegetables have started fluctuating due to problems mentioned here under :

- Imbalanced nutrition
- Lack of micronutrient application and organic addition
- Reduction in soil fertility

B. Plan, implementation of activities and support by KVK

The KVK has acquired from IIHR, Bengaluru the successful technology called Vegetable special, a micronutrient formulation which can boost the yield in vegetable crops by 20-30%. In order to make available the product in the locality for the easy adoption by farmers, the KVK has established the vegetable special production unit and supplying it to farmers since 2016.

Benefits of vegetables special:

- Higher yield (20-30 %).
- Improved quality of vegetables
- Better colour and uniform size vegetables.
- Higher keeping quality

The KVK has included vegetable special as one of the important critical inputs in its activities related to vegetable crops under OFT/FLD, trainings and other extension activities.

The details of the KVK activities are given hereunder:

Name of the activity	No. of programmes	No of farmers benefitted
On Farm testing	5	32
Front Line Demonstration	10	100
Trainings	51	768
Extension activities	36	860
Total	102	1760

Apart from the above activities, awareness on vegetable special technology being created through various in house, off campus and sponsored trainings in collaboration with Department of Horticulture across the district. After seeing the positive results of the technology, it is rapidly spreading to other vegetable growers existing in the district.

C. Output

- Farmers stated that an increase in yield by 20 to 30% was recorded in tomato, brinjal, chillies and gourd crops after using recommended quantity of vegetable special as foliar spray for 3-4 times.
- By using the technology, farmers feel that the quality of the produce in terms of size, weight, taste was also improved.
- The cost on fertilizer also minimized by 15% as the technology has all the required micronutrients.
- The technology also proved that it gives more resistance to crop against pest and diseases.

Details of change in yield and income

Parameters	Tomato		Brinjal		Chillies		Gourds	
	BI	AI	BI	AI	BI	AI	BI	AI
Yield (Q/ha)	463.35	596.12	271.38	344.61	24.63	29.53	342.62	428.20
Yield increase (%)	-	28.65	-	26.98	-	19.89	-	24.98
Net income (Rs.)	176908	270247	210855	246331	85249	153962	234332	349721
BCR	2.27	2.98	2.57	2.92	1.86	2.59	2.41	3.15

Note : **BI** : Before Intervention, **AI** : After Intervention

D. Outcome

The IIHR Vegetable special technology has spread over an area of 1120 hectares in Thiruvannamalai district due to the effort taken by KVK in collaboration with State Department of horticulture and it is expected to reach all the vegetable growing area of the district very soon.

E. Impact

There has been a constant increase in the area and productivity of vegetables in Thiruvannamalai district. Use of IIHR vegetable special is directly contributing an average yield increase by 20-30 % in vegetable crops. As the technology has been used by 7280 farmers in 1220 ha as of now, the demand for vegetable special is increasing regularly not only from Thiruvannamalai district, but also from neighboring districts after seeing the positive results by the farmers.
