

Effect of IISR Black Pepper Special on yield potential and reduction of nutritional disorders in Black Pepper

Details of success stories:

1. Background

Black pepper (*Piper nigrum* L.), christened as the 'King of Spices', is one of the important agricultural commodities of commerce and trade in India since pre-historic period. The crop is the major source of income and employment for rural households in the predominantly pepper growing state of Kerala where more than 2.5 lakh farm families are involved in pepper cultivation. Idukki district is a major producer of black pepper in the state. Over the years, the share of modern varieties of black pepper in cultivation is found to increase.

Major problem faced by pepper growers is the soil acidity. Nutrient disorders and deficiencies are often encountered in the field of pepper leading to their decreased yield and productivity. Malnutrition often pre-disposes the pepper plants to diseases and deficiencies of nutrients like P and K have also been indicated as the reason for diseases. But applying chemical fertilizers is not viable as they pose threats to both environment and health of the people. It is in such a scenario, where the KVK Idukki has decided to conduct a trial with a Micronutrient mixture, developed by IISR Bangalore known as IISR Black Pepper Special and this has achieved wide spread attention and appreciation from the farmers.

Source of Technology: Indian Institute of Spices Research, Kozhikode

2. Intervention process

- Ensuring the availability of adequate Black Pepper special for the trial period
- Timely intervention on different stages of growth of Black pepper
- Timely diagnosis of deficiencies and diseases of black pepper.
- Advisory services.
- Follow-up visits and technical support as and when required.

3. Intervention Technology

- The black pepper cultivation utilizing this technology was conducted during the years 2018-19 in 2 ha of area.
- The program aimed at reducing the deficiency disorders of black pepper and diseases caused due to the deficiencies.
- Between 2018 and 2019, KVK has conducted several field visits, field tours and trainings to popularise the technology and to educate the farmers regarding the mode of application.
- Timely intervention was provided not just for farming activities, but also for allied support inventory.

4. Impact Horizontal Spread

Problems such as High Soil Acidity, Potassium, Magnesium micronutrient deficiency, reduced growth, interveinal chlorosis of immature and recently matured leaves, malformation of young leaves, and interveinal chlorosis are commonly found in the pepper vines of Idukki district. After the inculcation of IISR- Black pepper special in the cultivation practices of pepper, there is a huge decrease in the deficiency disorders and the same is reflected in the increased yield obtained during this time period

5. Impact- Vertical spread

Pepper farmers of Idukki, has always been concerned regarding the low productivity of pepper as a result of deficiency disorders. But after the adoption of this technology, the farmers were able to obtain an increased yield of 1200kg/ha.

6. Impact - Economic Gains

An economic analysis was conducted, on the basis of costs incurred and revenue generated. The pepper cultivation with the application of IISR Black pepper technology gave a Benefit Cost ratio of 2.33 which shows that it is both feasible and profitable.

Conclusion

IISR Black pepper special when applied in two sprays to the pepper at vine setting and vine maturation stages, helped the crops to meet its nutritional requirements and major nutritional disorders found in pepper were absent when applied with IISR Black pepper special. The spike length increased as compared to normal spike. Berry formation was found uniform and fungal diseases were found decreased. As a result, the farmers have accepted this technology on a wide scale and the demand is increasing day by day.

Steps for Scaling –up:

- More demonstration plots will be made under this technology
- The technology will be made available to the farmers at reduced rates.
- Trainings will be conducted to popularize the technology among the farmers
- Brochures and other literary works will be published to give the farmers a quick summary
- Feedback will be obtained and their constraints will be met on a timely basis

