Integrated nutrient Management in cabbage cultivated at Vattavada cluster

Details of success story:

1. Background

Cabbage (Brassica oleracea L. Capitata group) is a cool season crop which is becoming more popular because of ample marketing opportunities. However, productivity of Cabbage in Idukki district is much below the potential due to poor soil quality and inadequate nutrient management strategies for infertile soils. There is increasing concern about use of synthetic chemical fertilizers and pesticides, which may be responsible for declining yields and deterioration of the soil condition. Decreasing yields over the years also indicate that indiscriminate use of synthetic and organic fertilizers may not be able to sustain vegetable production.

Other than the above mentioned, the major problems faced by Cabbage farmers also includes Soil acidity, necrotic leaf tip and tissues between the veins tend to ridge, chlorotic stripes on older leaves, yellow and crinkling in growing tips and shorter internodes. In such a Scenario, KVK Santhanpara has decided to undertake a demonstration integrating organic manures and synthetic fertilizers which has the advantage of restoring soil fertility, sustaining productivity and increasing nutrient management.

Source of Technology: IIHR

3.Intervention process

- Accessibility to the technology and availability of all basic resources
- Training on INM in Cabbage.
- Awareness campaigns on crop rotation and intercropping
- Timely intervention on different stages of growth of Cabbage
- Advisory services.
- Follow-up visits and technical support as and when required.

3.Intervention Technology

- The technology was initiated during the years 2019-20 in the fields of 5 farmers
- Supply of adequate inputs and consultancy services
- Field visits to the successful farmers of neighboring areas
- Film shows on successful cases of good agricultural practices in Cabbage
- Timely intervention, was provided not just for farming activities, but also for allied support inventory.

4.Impact - Horizontal Spread

Integrated nutrient management (INM) treatments significantly affected growth characteristics and yield attributes of cabbage. INM interaction affected dry matter of the crop and head weight in cabbage. Cabbage plants treated with the INM had higher head weights of4.3 than the check with 2.7. Root volume in cabbage was also higher in treatments when compared to the farmers practice and soil acidity has decreased.

5.Impact - Vertical spread

For cabbage, a highest yield of 596 q/ha was obtained during the year 2019-20, when the intervention was carried out. However, better dry matter accumulation, higher yield attributes, and yield of crops in 2019 were also likely in part due to climatic effects as air temperature during 2019 was more favorable for these cool season vegetable crops.

6.Impact - Economic Gains

Net returns, and the cost: benefit ratio were affected by INM treatments. A highest net returns (Rs. 2,38,200·ha−1) and cost:benefit ratio of 3 was obtained, which was significantly higher than the check with 1.98.

Conclusion

There is concern that use of inorganic fertilizers alone cannot sustain high levels of productivity and cause deterioration of the soil and environment. The use of INM to improve plant nutrition may address these issues. The technologies of KAU and IIHR when used combination with inorganic fertilizers can have a profound impact on growth, yield and soil health of Cabbage**.**

Steps for Scaling – up:

- Large Scale demonstrations will be conducted in convergence with ATMA-Idukki.
- The KVK will ensure that the majority of the growers are benefited by such programmes.
- Trainings for popularizing such eco- friendly, bio control methods will be organized frequently
- 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