

Application of IIHR Vegetable Nutrient spray which results in mitigating nutritional irregularities in Passion fruit

Details of success stories:

1. Background

Passion fruit (*Passiflora edulis*) is an attractive, nutritious fruit crop highly appreciated for fresh consumption and industrial purposes because of its diverse uses for juice, jelly and ice cream products. It is a perennial woody fruit vine belongs to family *Passifloraceae*, native to tropical America (Brazil). Kerala has enjoyed a moderate harvest of purple passion fruit in the Idukki, Wayanad, and Malabar in the south. However, In Idukki district, the full potential of this fruit could not be yielded mainly due to factors such as fruits with less juice, soft seeds, less fruit set, high fruit drop, malformed / shriveled fruits, low TSS and high acidity of juice. To rectify these recurring problems, KVK Santhanpara has undertaken an assessment, with different micronutrient sprays in order to retain the interest of the farmers and demand of the fruit.

Source of the technology: -

Farmers Practice, TNAU, 2015 and IIHR -2016

TO-1: Basal application of FYM & complex fertilizers

TO-2: FYM 10 kg, N 20 g, P 20 g and K 15 g/plant + boron spray

TO-3: 110g N, 60g P₂O₅ and 110g K₂O per vine per annum + IIHR micronutrient spray

TO-4: FYM- 10 kg, N-110g, P- 60g, K-110g per vine/annum + Ayar @ 50g/plant

2. Intervention process

- Soil testing at the farmer's field
- Availability of all the basic input resources
- Hands-on training on value addition of passion fruit
- Advisory services
- Follow-up visits and technical support as and when required

3. Intervention Technology

- Field visits to the farmers who have successfully adopted micro nutrient sprays
- Trainings and capacity building programmes for the farmers
- Timely intervention, not just for farming activities, but also for allied support inventory
- Corrective deliberations and fool proof measures in all the stages of crop production

4. Impact - Horizontal Spread

The data revealed that, within the micronutrient sprays, application of passion fruit with TO-3: 110g N, 60g P₂O₅ and 110g K₂O per vine per annum + IIHR micronutrient spray was found more effective when compared to other two technology options. The fruits yielded had high TSS and less acidity and was found suitable for jelly, ready to serve and squashes.

5. Impact – Vertical Spread

Spraying the fertilizer (TO-4) to the leaves obviates soil fixation of the Zinc and Boron and provided a very large area for absorption, which ultimately results in increased vegetative growth and fruit yield. Moreover, there was decreased incidence of fruit drop and shrivelled or malformed fruits.

6. Impact Economic Gains

When analyzed the profitability of passion fruit, it was observed that the culture of Kauveri passion fruit is economically viable with a productivity greater than 100 q/hectare/year when treated with TO-3: 110g N, 60g P₂O₅ and 110g K₂O per vine per annum + IIHR micronutrient spray when compared to the farmers practice, TO-2 and TO -4. However, due to the sharp increase in the price of inputs and the price of a kilo of fruit in the last 05 years. it is necessary to increase the productivity per hectare, as well as minimize the cost of production and cause the activity to be sustainable economically.

Conclusion:

Keeping in view the above aspects, it can be concluded that cultivation and production of passion fruit is technically feasible with the application of suitable micro nutrient sprays when compared to the traditional methods. However, the first and foremost step to be taken up is to create an awareness among the people and give wide publicity through different means, then creation of integrated efforts among all the possible stakeholders e.g. farmers, government agencies, research institutions and other agencies. Moreover, development of proper market linkages between the investors / business houses and the producers would certainly boost the passion fruit production in the district.

Scaling up:

- Strategies for post harvest management will be developed.
- Proper storage facilities will be created
- New processing units will be set up
- 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

