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Short Communication Open Access

Ecofriendly Pest and Disease Management Practices in Brinjal Cultivation

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Short Communication

Brinjal is cultivated in an area of 214 ha with production of 3638 mt in Kancheepuram district. The crop is cultivated throughout the year. It fetches about Rs. 80-100/kg during festive occasions. The vegetable is preferred during all the season and it is relished by all.

Mr. Durai Subbu, aged 73 years of Jameen Endatur in Maduranthagam block of Kancheepuram district does vegetable cultivation in 2 acres of land. He practices organic farming by preparing all the organic inputs by himself and applies the same for vegetable cultivation. He manages the attack of pest and diseases by adopting the indigenous methods of controlling the infestation and further spread of diseases.

The farmer employs the traditional methods of cultivation starting from land preparation to harvest. The land is ploughed well and Farm Yard Manure (FYM) at the rate of 5 t/acre is applied to enrich the activity of the beneficial organisms. Quality seeds are selected and treated with *Trichoderma viride* @ 4 gm/kg of seeds. Nursery is raised by sowing the seeds in lines at 10 cm apart and covered with sand. Castor is grown as trap crop for flying insects and is sown 7 days before transplanting. Pulse crops, Black gram and Green gram are also sown in borders to arrest pest population.

The seedlings (30 days old) are transplanted in the main field by forming ridges and furrows with 5 ft spacing between furrows. The planting is done in a paired row system so as to provide better spacing for sunlight and air circulation which helps in the control of pest and disease infestation. *Azospirillum, Pseudomonas* and *Trichoderma* is mixed well with composted farm manure and allowed for 15 days and then handful of these is applied to transplanted brinjal seedlings.

First spray of Neem oil 5% is given 15 Days after Transplanting (DAT) to control sucking pests. Panchakavya spray (20 litres of this can be prepared by mixing cow dung 5 kg, cow urine 3 lit, cow milk 2 lit, curd 2 lit, cow deshi ghee 1/2 kg, sugarcane juice 3 lit or ½ kg jaggery dissolved in 3 lit of water, tender coconut water 3 lit, banana paste of 12 fruits. Mix cow dung and ghee in a container and ferment for 3 days with intermittent stirring. Add rest of the ingredients on the fourth day and ferment for 15 days with stirring twice daily. The formulation will be ready in 18 days. For foliar spray 3 lit panchakavya is diluted with 100 lit water) is carried out to boost immunity to the plant to provide resistance to diseases. The spray is repeated every 15 days to repel the pests. To monitor the borers pheromone traps (6 nos./acre) are installed. To control sucking pests, light trap (1 no./acre) and yellow sticky traps (6 nos./acre) are used. After first weeding, Jeevamirtham (Cow dung 10 kg, cow urine 10 L, Jaggery 2 kg, any sprouted pulse like black gram or green gram or Bengal gram or horse gram flour (2 kg) and farm soil 1 kg is mixed in 200 L water and allowed to ferment for 5 to 7 days. The solution stirred regularly three times a day) is applied along with irrigation.

During flowering stage, Fish ensilage (Meen amilam, is prepared by mixing equal ratios of fish waste and jaggery in a plastic barrel and kept for 21 days for fermentation with stirring) is given @ 250 ml/tank to prevent flower shedding and also to repel pests. Amirthakaraisal (For 200 L of water, cow dung 20 kg, cow urine 20 L and jaggery 2 kg is added and mixed well. After 24 hrs of preparation, this can be used) is given during irrigation which helps to increase the antagonistic microbes in the soil. Vermicompost and Neem cake is applied to each plant in the opposite direction to enhance the soil fertility and control the nematode and soil pathogen pest and pathogens respectively at 45 DAT and 60 DAT. In case of severe borer infestation, ginger –garlic paste extract is sprayed and repeated at an interval of once in 10 days. Based on the soil moisture, irrigation is given. About 7-8 t/acre of yield was obtained thereby reducing the amount of Rs.12,000/-spent on the usage of chemicals. In addition, the end produce had better keeping quality and market value than the others grown with chemicals (Figures 1-4).

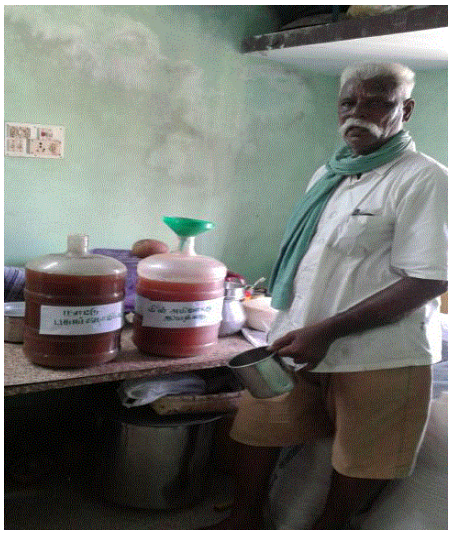

Figure 1: Mr. Durai Subbu with his bioproducts.

Figure 2: Farmer in his field.

Figure 3: Farmer in his organic manure production unit.

Figure 4: Pheromone traps used for monitoring borers.

Summary

Brinjal cultivation is one of the important horticultural crops grown in various parts of Kancheepuram district, Tamil Nadu, India. The brinjal crop during its period is affected by varied number of pests and diseases. Though the farmers apply chemicals to control and eradicate the pests and pathogens, the awareness of ill effects of pesticides in the environment makes them to go organic. The present paper brings out the success story of a farmer, Mr. Subbu who practices organic farming. The farmer grows Brinjal by selecting the variety suitable for season and area. The land is ploughed well and Farm Yard Manure (FYM) at the rate of 5 t/acre is applied to enrich the activity of the beneficial organisms. The seeds are sown after treating with biogent *Trichoderma viride* @ 4 gm/kg of seeds. Castor is grown as trap crop and seeds sown 7 days before transplanting the brinjal seedlings. Pulses like Black gram and Green gram is also grown along the borders. The seedlings (30 days old) are transplanted in the main field by forming ridges and furrows with 5 ft spacing between furrows. The planting is done in a paired row system so as to provide better spacing for sunlight and air circulation which helps in the control of pest and disease infestation. 15 DAT Neem oil 5% spray is applied to control sucking pests. Panchakavya spray (3%) given to boost immunity to the plant to provide resistance to diseases. The spray is repeated every 15 days to repel the pests. To monitor the borers pheromone traps (6 nos./acre) are installed. To control sucking pests, light trap (1 no./acre) and yellow sticky traps (6 nos. /acre) are used. After first weeding. Jeevamirtham is applied. During flowering stage, Fish ensilage (Meen amilam) is given @ 250 ml/tank to prevent flower shedding and also to repel pests. Amirthakaraisal is given during irrigation which helps to increase the antagonistic microbes in the soil. Vermicompost and Neem cake is applied to each plant in the opposite direction to enhance the soil fertility and control the nematode and soil pathogen pest and pathogens respectively at 45 DAT and 60 DAT. In case of severe borer infestation, ginger–garlic paste extract is sprayed and repeated at an interval of once in 10 day's interval. Based on the soil moisture, irrigation is given. About 7-8 t/acre of yield was obtained thereby reducing the amount of Rs.12,000/-spent on the usage of chemicals. In addition, the end produce had better keeping quality and market value than the others grown with chemicals.