THE HINDU

Water jetting: an eco-friendly pest management technique in mulberry
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The cost of this technology is lesser than that of a standard power sprayer

Old recommendation: A farmer practising the method. -Photo: Special Arrangement

Like other crops, mulberry is also prone to a number of pest attacks. Farmers generally spray pesticides two times before each harvest of leaves i.e. in bimonthly interval to produce quality leaves to feed the silkworms. The spray consists of some chemical pesticide mixed with water and sprayed over the leaf canopy.The main drawback in this is that while the chemical spray initially seems to control the pest, over time the insect develops a immunity to these sprays. Besides this, the practice of spraying chemicals over time creates some serious health problems to the farmers spraying it.

No precaution

"Unlike foreign countries many here do not take precautionary measures like closing their nose and mouth with a piece of cloth, wearing gloves etc. We have also observed that mulberry farmers experience monetary loss because the silkworms often die without forming cocoons due to the residual toxic effect of insecticides sprayed," says Dr. N. Sakthivel, Scientist, Research Extension Centre, Central Silk Board, Srivilliputtur.In order to overcome these problems the research extension of the silk board developed a water jetting package which attempted to apply the physical force of water against the sucking pest menace in mulberry cultivation and succeeded.Water jetting — using a high volume sprayer — is an old recommendation but became unpopular among the farmers because it required huge quantity of water at the spraying spot. It is an expensive method and required a lot of time and labour. But in the present method irrigation water is diverted from the main pipeline to a one- inch garden hose with the help of suitable adaptor and gate-valve for jetting.Therefore, the farmer gets an uninterrupted supply of water as well as sufficient flow quantity to generate adequate water pressure to hit the pests lethally and wash them out from the plants.The water pressure and jetting distance can be adjusted by blocking the open end of the garden hose by using the thumb.

Less cost

Farmers who do not have pipeline across the garden can establish the system for one acre at a cost lesser than that of the cost of a high volume power sprayer.The technology is highly economical as the cost of establishment of the system is lesser (Rs. 5,000 – 7,000) than the purchase of standard high volume power sprayer that costs Rs.10,000-15,000) and also can conveniently be used for many years.Water jetting can be done at the time of routine irrigation without using additional man power and any revolving expenditures. It is estimated that approximately 2-3 hours are required to cover a one acre

plantation depending upon the plants' age.Silkworm rearing can be taken up only 15-20 days after spray of chemical insecticide in mulberry garden due to its residual toxic effect.

Not possible

Further, chemical measure to control pests in mulberry garden is not possible after initiation of silkworm rearing. But water jetting can be done at any moment if pest incidence is noticed i.e. even after initiation of silkworm rearing."This practice not only eliminates the pest population but also removes the black sooty moulds developed on the honeydew secreted by the pests and dusts from the leaves which increase the efficiency of photosynthetic activities followed by increase in leaf quality and yield.The silkworms prefer this dust-free quality leaves, with resultant increase in silk productivity and income to the farmers," explains Dr. Sakthivel.This is an eco-friendly approach as it helps to avoid use of harmful insecticides and does not cause any health hazard to the users, silkworms and other beneficial organisms and also does not pollute the environment.Sucking pests are soft bodied insects unlike caterpillars and beetles. The strong jet of water dislodges the pest and washes them down from the plants. Post water jetting observations revealed many ants feeding the dead pests on the ground, according to him.

Proven

It is proved that a sericulture farmer can maintain his mulberry garden free from pests without application of any insecticide if he jets the water routinely at the time of each irrigation.This water jetting can also be employed for other agricultural and horticultural crops with a little care at the time of flowering stage.The person who irrigates the garden could simultaneously jet the water. Therefore no additional manpower and no revolving cost of chemicals are required. The jetted water irrigates the garden as well.This practice is highly effective, eco-friendly, user-friendly, economic and could bring solution to the pesticide issues which pose great threat and challenge to mulberry cultivators.Another greater issue of chemical insecticides is that they destroy the natural enemy complex in agro ecosystem rather than pests, because many pests often develop resistance to the chemicals applied.

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