

Suppressing the melon fly in Mauritius

The challenge...

Around 30% of the cultivated area in Mauritius is under cucurbit production, a plant family that includes cucumber, squash, pumpkin, bittergourd, snakegourd, chayote and courgette. Annual production comes to around 24 000 tonnes each year. The main pest of cucurbit crops in Mauritius is the melon fly, *Bactrocera cucurbitae* (Coquillett), which lays its eggs under the skin of the fruit. This causes heavy damage as the developing worms destroy the fruit. If uncontrolled, melon fly can destroy a whole crop.

Current control methods include the use of insecticide cover sprays or bait sprays, which can be less effective when the melon fly population is high. This has led to an overuse of insecticide. An integrated pest management approach, including area wide application of the sterile insect technique (SIT), which is a more sustainable and effective method of pest control, is of utmost importance for the protection of public health and the environment.



Watermelons are part of the cucurbit family.

The project...

With the support of an IAEA technical cooperation project, an integrated pest management approach was developed to reduce crop losses and insecticide use in an environmentally friendly way and to produce better quality fruits and vegetables. An action plan was developed and educational and public information activities and on-site staff training on activities relating to SIT were carried out.

Eight fellowships were provided in the fields of melon fly mass rearing, fruit fly field monitoring, public information services and all aspects related to the management of an area wide integrated fruit fly suppression programme. Local growers were also provided with training and with the necessary equipment, such as sprayers, fruit disposal cages, protein bait and male annihilation technique blocks.

The impact...

The project was initially designed as a feasibility study only, but developed into a successful field pilot project. Environmentally friendly pest control technology was transferred and national capabilities in Mauritius were enhanced. As a result, a melon fly surveillance system and a fruit collection system for determining melon fly infestation were established. There was widespread participation of growers in the pilot area in the implementation of control techniques, and the counterpart institution was able to start transferring the project benefits to other vegetable growing areas in Mauritius.

Cucurbit infestation, which was above 30% before project implementation, was reduced to 5% one year later. A decrease in the frequency of pesticide application was recorded, along with an increase in cucurbit production. The project has demonstrated the usefulness of an integrated approach to reduce insecticide use and to produce better quality fruits.