

After a series of successful contained environment studies across various countries, U.K.-based Oxitec is now ready to move to open field trials for its 'self-limiting' Mediterranean fruit fly (Medfly).



The studies demonstrated the GM Medfly's ability to successfully mate with others in the wild and subsequently suppress the pest population. The efficacy of the Oxitec Medfly and existing control methods were also examined.

"Over the past few years, the performance of our Medfly solution in testing across different countries has confirmed our belief that this product may deliver superior efficacy and an improved environmental profile as compared to many products on the market today," the company's chief scientific officer Simon Warner said.

"We are now planning to advance our environmentally-friendly Medfly product into field trials in different countries to demonstrate its potential in open environments."

The company said that Medfly, one of the world's most destructive agricultural pests, was difficult to manage by conventional methods because of its ability to infest many types of crops year-round, and that growers needed alternative technologies for control.

Oxitec's approach uses genetically engineered Medfly males that are released to mate with wild females. Their female offspring do not survive to adulthood and repeated releases result in a reduction of the pest population.

In the latest study, the Western Australia Department of Agriculture and Food (DAFWA) compared the mating performance of Oxitec's Medfly with that of sterile insects treated with radiation - another technique used to control the pest population.

As reported by DAFWA the mating performance of Oxitec's Medfly "was comparable with that of sterile males irradiated at low levels, and exceeded that of sterile males treated with

a higher dose of radiation which is used to provide a better guarantee of sterility.”

Oxitec said Western Australia is one location where open field trials may be carried out, but regulatory approval would first be needed. DAFWA is now in consultation with bodies including the Office of the Gene Technology Regulator for the next phase.

In 2010, Oxitec conducted the first study to demonstrate the efficacy of the self-limiting Medfly in collaboration with the University of Crete, Greece. In the trial, the Medfly pest population was eliminated in glasshouses in 12 weeks, according to the company.

These results were then confirmed in netted trials in Morocco in collaboration with the leading agricultural group in the country, SAOAS. Oxitec’s Medfly showed equivalent mating performance with the wild Moroccan Medfly and again successfully suppressed the wild population.

Trials in Morocco also compared the protection of fruit crops provided by Oxitec’s Medfly with that of a leading insecticide used to combat the pest globally.

Sustained releases of Oxitec males resulted in a superior marketable yield of fruit compared to treatment with the leading insecticide.

A representative of U.S.-based Intrexon Corporation (NYSE: XON), which recently acquired the British company for around US\$160 million, said advancing to open field trials was an 'important milestone' for the 'pipeline of self-limiting insect products'.

"Studies indicate that annual losses of crops due to these pests, including Mediterranean fruit fly, can reach billions of dollars," Intrexon Crop Protection president Sekhar Boddupalli said.

"Additionally, these difficult to control insects can cause devastating impacts to agricultural economies dependent on high-value produce export."

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