

Area-Wide Medfly Control In The Middle East Brings Significant Economic Benefits and Regional Cooperation

In a cooperative programme between Israel, Jordan and the Palestinian Authority, and with the technological support of the IAEA and Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, early achievements in the area-wide control of the Medfly, a key pest of fruits and vegetables in the region, results in a 50-fold increase in export revenue and targets a much larger potential export market. The successful regional cooperation within this programme may also serve as a peace-promoting platform for the region.

The Mediterranean fruit fly (*Ceratitis capitata*) (or Medfly) is a key pest of fruits and vegetables throughout the Mediterranean Basin including Israel, Jordan and the Territories Under the Jurisdiction of the Palestinian Authority (TJPA). During the past 40 years, farmers have attempted to control this pest by using conventional insecticide cover sprays in Jordan and insecticide bait sprays in Israel and the TJPA. However, despite an average of 10 annual insecticide applications, fruit loss is significant, secondary pest outbreaks are frequent and export markets are accessible only through the use of costly postharvest treatments. An economic feasibility study conducted in 1997 showed that in Israel, Jordan and the TJPA the total annual losses from Medfly amounts to nearly US \$300 million, including loss of markets that discriminate against Medfly and pesticide residues.



Exports of bell papers from the Arava Valley to high value markets.

Given the seriousness of the problem, as early as 1994, an opportunity was foreseen for contributing to the promotion of peace in the region, through addressing a shared transboundary problem, i.e. the control of the Medfly. The Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture organized a consultants meeting in Vienna involving outside experts and representatives from countries in the region to design what was then called the “Eastmed” project. This ambitious plan encompassed most of the countries in the Middle East region, in an effort to address the medfly problem at a supra-national level.

As a results, Israel and Jordan in 1997, and the TJPA in 1999 requested support from the IAEA to implement the sterile insect technique (SIT) in this region. The necessary technology was transferred through Technical Cooperation Projects (TCP’s) subscribed by the Ministries of Agriculture. Through these TCP’s, area-wide SIT technology for Medfly population suppression was transferred to Israel and Jordan and capacity generated in the TJPA for



Medfly mass rearing facility at kibbutz Sde Eliyahu in the Beit She’an Valley.

adoption of this technology. These projects have equally served as a peace-promoting platform, bringing together these countries and territories in a joint collaboration and partnership to solve a shared problem.

Since 1998, sterile male Medflies have been imported form the El Pino mass rearing and sterilization facility in Guatemala to an emergence and release facility in Israel. Sterile flies have been released on a continuous basis in pilot areas located in the Arava Valley on both sides of the Israeli and Jordanian borders. By integrating SIT with

other suppression methods reduction in fruit infestation and insecticide use has been significant. Moreover, on the Israeli side of the Arava, the export of Medfly-free produce, mainly bell peppers, has increased from less than US \$1 million in 1998, to US \$50 million in 2004, as a result of effective Medfly population suppression using area-wide SIT.

The positive impact that application of this technology has had in the region has recently encouraged the Israeli company BIO-FLY, a subsidiary of the biocontrol company BIO-BEE, to build a Medfly mass rearing facility at the kibbutz Sde Eliyahu in the Beit She'an Valley to supply local farmers in the Arava Valley and north Israel pilot areas with 15 million sterile male Medflies per week. This is the first privately run facility of its kind in the Mediterranean region.

Demand for sterile male Medflies will continue to increase as the programme expands to commercial horticultural production areas in the Northern Negev and Upper Galilee in Israel, the upper Jordan Valley in Jordan and the Palestinian Authority areas. To cover this increased demand BIO-FLY is currently planning to enlarge its present Medfly rearing capacity. This programme contributes significantly to the improvement of the agricultural sector in the Middle East and also forms a sound basis for increased cooperation within the region.