

ARGENTINA

FRUIT FLY ERADICATION IN THE SOUTH REGION (ARG/5/005)

OBJECTIVE: To achieve declaration of fly free zone in the South region of Argentina by eradicating the medfly. To support control and eradication activities of fruit fly in Mendoza and San Juan provinces.

BACKGROUND: Argentina, a country with over 3 million square kilometers in area, is one of the major producers of agricultural products in the world. Nearly one million hectares are dedicated to fruit crops found in all provinces of the country. Fruit exports account for 9% of total agricultural exports and generate close to \$450 million a year.

According to statistics collected in recent years, fruit flies cause damage equivalent to 15 to 20% of present production value of fruit. The main types of fruit flies present in the country are the *Ceratitis* (medfly) and *Anastrepha* (South american fly). Perhaps the most important of these pests is the medfly because of the damage it causes and the quarantine barriers imposed by medfly free countries on imports from infested countries. Over the past decade, this subject has acquired greater importance in many countries, and in Argentina there has been a growing interest in campaigns specifically oriented against the medfly which now affects the majority of the country's fruit growing regions. Among the reasons for this increased interest are: the successful application of techniques for the control and eradication of the medfly, like the sterile insect technique (SIT) in other latitudes (USA, Mexico, Guatemala and Chile); the traditional leading role played by Argentinean entomologists who are pioneers in the rearing of sterile insects and parasites; the establishment of non-tariff barriers for the international marketing of fruits and vegetables which do not host fruit flies; the international acceptance of new concepts such as that of pest free zone.

The above developments led the provinces of Mendoza and San Juan to establish programmes to eradicate the medfly, including the use of the SIT. Sterile insect rearing facilities have been built in both provinces, monitoring programmes to determine the population are in effect, and a quarantine barrier to prevent reinfestation of areas subject to the eradication efforts is in operation. The programme is carried out in five fruit producing areas with a total surface of 374.167 hectares. In these areas eradication efforts are favoured by the existence of a good physical and human infrastructure, including two sterile insect rearing facilities, and the fact that the fruit producing areas are isolated from other fly infested areas by deserts or mountains with no cultivated or wild host plants. The main fruit products are apples, peaches, plums, grapes, olives, pears and tomatoes. Apples, pears, peaches and plums are exported.

More recently, in 1992, the Government launched a programme for the eradication of the medfly in the South region of the country, an area of over one million square kilometers. As a first step a quarantine barrier is being implemented and will start operation at the end of the present year. The south region has 95.000 hectares dedicated to fruit production in valleys. Main fruit products are apples and pears. Annual production of apples and pears amount to 1.9 million tons, 25% of which are exported generating over US\$100 million in foreign exchange. In this region eradication of the med fly is favoured by the following factors: the only fly present in the area is medfly, the inhospitable climate during winter precludes med fly survival in the whole area with the exception of urban areas, the fruit production areas are isolated which makes it very difficult for natural reinfestations of med fly to occur. In this region eradication of med fly is achievable in a relatively short period.

In other regions of the country and in the frame of a recently established national programme to eradicate or control the fruit fly, the Government is taking the first steps to establish activities for the eradication or control of the fruit fly.

It is calculated that near US\$9 million a year are being spent in these eradication efforts, a good part of it in Mendoza province with an amount exceeding US\$4 million. To support these efforts the IAEA established in 1993 the ARG/5/004 "Control of fruit fly using the SIT" project that is assisting the Argentine national programme in very specific actions, including the formulation of plans of activities for the eradication of the med fly in the South region and recommendations for a more efficient implementation of activities in the provinces of Mendoza and San Juan. As a result of the experience gained, a project to eradicate the med fly in the South region and to support on-going similar activities in the provinces of Mendoza and San Juan has been formulated. This new project replaces the ARG/5/004 project.

PROJECT PLAN: For the South region the main activities foreseen are centered around: 1) establishment and operation of an efficient quarantine barrier in road crossings, railroad lines, airport and atlantic ports. 2) implementation of an intensive fly monitoring survey in the field. 3) combat of med fly using SIT and complementary methods. 4) declaration of fly free area by international plant protection organizations.

For the Mendoza and San Juan provinces, the eradication programme in progress has as main activities: 1) eradication of the med fly by implementing a comprehensive programme for management of the flies, including the use of the SIT. For this purpose sterile flies are being produced in two rearing facilities located in the provinces. 2) operation of a quarantine barrier to prevent reinfestation. 3) monitoring of flies in the field. 4) emergency operations to deal with reinfestations.

NATIONAL INPUT: Under the leadership of IASCAV (Argentine Institute for Plant Protection) which is the national institution responsible for the eradication and control of fruit fly, several national and provincial institutions cooperate with the implementation of the activities. IASCAV is responsible for coordination of all actions, contacts with international organizations that certify fly-free zones, identification of foreign resources (\$1.44 million have already been allocated by the Interamerican Development Bank), provision of technical support as well as funds to provincial institutions responsible for field operations, training of personnel working in different activities, preparation of additional legislation to support quarantine activities. Provincial health protection agencies are responsible for field operation like sampling, monitoring, quarantine barriers, public information campaigns. INTA (Instituto for Agricultural Technology) supports field operations. Universities undertake research on specific topics. CNEA (National Atomic Energy Commission) assists on the use of the SIT.

In the case of the Mendoza and San Juan provinces, the provincial governments are funding most of the activities, including the operation of the two fly rearing facilities, while in the South region IASCAV is doing it.

Costs incurred by Argentina, up to the end of 1993 are calculated as \$13.290.000. For the implementation of activities during the four year period of this project, additional costs amounting to \$33.000.000 are foreseen. Most of these resources will be made available by the federal and provincial governments. However, Argentina is actively seeking abroad the additional funds required to satisfy the needs.

AGENCY INPUT: The IAEA will transfer the Vienna 42 genetic sexing med fly strain developed at Seibersdorf to reduce significantly costs of rearing the flies and to introduce a more effective field programme using the sterile insect technique. The IAEA will provide expert services in management of SIT eradication programmes, fly rearing technology and fly release techniques. Additional experts will advise on other field operations related to quarantine barriers and fly monitoring.

Fellowship and scientific visits will be awarded with the main objective of exposing Argentine personnel to similar SIT programmes in other countries like Guatemala, Mexico and the USA. It is also foreseen to organize local training courses with lecturers sponsored by the Agency. The equipment to be provided under the project will upgrade the two sterile fly rearing facilities, the fly monitoring activities in the field, the identification of flies in entomology laboratories, the operation of the quarantine barriers, the research activities supporting the programme.

In relation to the South region, FAO will provide expert services for coordination of activities with USDA and certification of fly-free areas, funds to pay for intraprovincial and interprovincial travels by Argentinian officers responsible for the programme, materials and supplies for monitoring the medfly and for packing and releasing the sterile insects, vehicles, microscopes and other fly identification materials to upgrade the present facilities supporting the programme. Finally FAO will support contracts for the aerial transport and release of the sterile medflies in the South region.

PROJECT IMPACT: The project will achieve the declaration of fly free zone for the South region. Maintenance of the quarantine barrier in the South region at the conclusion of the 4-year project will mean that the large potential to increase fruit production can be realized, translating into large exports to the northern hemisphere in times when fruit production in that hemisphere is a minimum. Large foreign exchange inputs are expected from the increased fruit exports.

For the provinces of Mendoza and San Juan the project will have helped to consolidate present efforts to eradicate the fruit fly in both provinces. Declaration of fly-free zones shortly after conclusion of the project will mean that the important potential to increase fruit production for export by several hundred million dollars, will be finally achieved.

CORE FINANCING

YEAR	EXPERTS		EQUIPMENT	FELLOWSHIP		TRAINING	SUBCONTRACT	GRAND TOTAL US \$
	MONTHS	US \$	US \$	MONTHS	US \$	US \$	US \$	
1994	15	162 000	150 000	10	31500	25 000		368500
1995	15	171 000	150 000	10	33 000	25 000	-	379 000
1996	15	180 000	100 000	17	58650	15850		364 500
1997	13	163 800	50 000	10	36 000	25300	-	275 100

FOOTNOTE a/ FINANCING

YEAR	EXPERTS		EQUIPMENT	FELLOWSHIP		TRAINING	SUBCONTRACT	GRAND TOTAL us\$
	MONTHS	US \$	US \$	MONTHS	US \$	us \$	US \$	
1994	3	36 000	102 000			3 000	5 000	146 000
1995	3	37 800	39 200				27 000	104 000