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Regional cooperation to combat fruit flies in the Andean Region

A regional strategy in this field would boost the growth of horticulture and help improve agriculture and rural development.

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The Andean Region has not been immune to the transformations taking place and the current trends in agricultural and rural development during this period of globalization, the implementation of the agreements of the World Trade Organization (WTO), opening and free trade agreements.

Amid these transformations and trends, all five countries have witnessed, to one degree or another, the gradual development of horticultural production and the steady growth of exports of these products to the world's most attractive markets. Although horticultural production in the Andean Region is far smaller than in countries like Argentina, Brazil, Chile and Mexico, the statistics show significant increases in overall yields and export volumes.

The agenda of the Inter-American Institute for Cooperation on Agriculture (IICA) for the Andean Region includes a very good description of the general state of the rural sector and agriculture in Bolivia, Colombia, Ecuador, Peru and Venezuela. The rationale for the Institute's efforts to help reposition agriculture and rural life in the region is based on factors such as the size of the population, the surface area, the agricultural sector's potential and relative importance within the regional economy, plus the need for comprehensive agricultural and rural development programs.

The Andean horticultural industry is already important and further growth is assured, despite certain long-standing constraints such as the organization of producers, crop zoning, the modernization of production, effective efforts to combat priority pests (especially of those of quarantine importance) and the organizational structure for the processing, marketing and exporting of products.

Furthermore, there is widespread agreement that horticulture in the Andean Region has enormous potential, not only in relation to the plants that are already being grown and exported, but also in terms of a variety of

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exotic species that are beginning to be promoted in foreign markets and could become very important products further down the road.

Plant health protection and international agricultural trade

The standards required by the World Trade Organization, the implementation of its agreements (including one on the Application of Sanitary and Phytosanitary Measures) and the adaptation of WTO standards to the process of modernizing agriculture, constitute major commitments and responsibilities for the countries.

As a result, the issue of plant health protection is increasingly important, especially to ensure that the measures implemented do not become hidden barriers or obstacles to international agricultural trade. Of course, the countries are entitled to maintain and guarantee the levels of plant health protection needed to safeguard their agricultural and plant resources.

Viewed in another light, the more complex the challenges that the countries face with regard to the competitiveness of their agricultural products in international trade, the greater the pressure on them to improve the technological practices used for production and processing, especially for export products. These technological practices include plant health protection throughout the agricultural production chain, an issue whose importance cannot be underestimated.

Plant health protection includes the prevention, control and possible eradication of plant pests and diseases - from before crops are planted until after they are harvested - and the strict control of all

kinds of residues of agrochemical products and biological or chemical pollutants.

The efforts to combat fruit flies

Fruit flies have long been one of the most destructive agricultural pests and one of the most important quarantine factors that limit international trade in fruits and vegetables. This makes prevention activities and efforts to combat the insect increasingly important, especially in countries like those of the Andean Region, which are keen to export their products to the most demanding markets.

A wide variety of species of fruit flies exists in the Andean Region, some endemic and other exotic. They include flies that are of economic importance to the countries, either because of the direct damage they cause to horticultural products or the constraints they impose on the international marketing of those products.

Some of the endemic species are those belonging to the genera *Anastrepha*, *Rhagoletis* and *Toxotrypana*, such as the South American fruit fly (*A. fraterculus*, Wied.), the West Indian fruit fly (*A. obliqua*, Macquart), the Guava fly (*A. striata*, Schiner), the Inga fruit fly (*A. distincta*, Greene), the Sapote fruit fly (*A. coil*, Wied.), the Cucurbit fruit fly (*A. grandis*, Macquart) and the Papaya fly (*T. curvicauda*, Gerstaecker).

There are exotic species that have the same effects as endemic ones and are, therefore, very important from the quarantine standpoint. A case in point is the Mediterranean fruit fly (*Ceratitis capitata*, Wied.), which reached the Americas in 1901 and has been present in the five Andean countries for a number of years.

Species that have not been reported in the Andean countries also warrant plant health surveillance and protection programs and activities, to prevent them from entering the region.

Given the huge economic losses that fruit flies cause, plus the high cost of pesticides and quarantine protection practices, for many years all the Andean countries have been making enormous efforts to combat the pest. Both the countries themselves and international

organizations and bilateral cooperation agencies have pumped substantial financial resources into those efforts.

Over the years, the Andean Region has implemented many plant health initiatives, programs and projects. The characteristics, coverage, projection and results of the efforts obviously vary from country to country, depending on the relative importance of the respective national horticultural industry.

Importance of international cooperation

The five Andean countries have expressed growing interest in tackling and solving the problems created by the presence and harmful activities of fruit flies in their territories, to improve the quality of products for both domestic consumption and export. It is only logical, therefore, to consider the benefits and advantages of a regional cooperation strategy to combat the pest.

Not only is the fruit fly a common enemy, with some species of the insect thriving in the countries' major fruit-growing areas; it could also spread and establish itself very easily in new areas, where it will continue to wreak havoc.

The efforts to combat the fruit fly have shown the rest of the hemisphere that regional cooperation is the best way to make prevention and control actions more effective. Coordination and information sharing make it possible to learn from the successful initiatives of the different partners, prevent duplication and wasted efforts, and validate and fine-tune work methodologies. In short, to make optimum use of the human, technical, economic and other resources assigned to the joint effort.

The costs of fruit fly programs are normally huge but the more the countries focus on agreements and plans for concerted regional action, the greater the economies and benefits for all the parties involved.

With regard to quarantine standards and regulations, concerted regional action facilitates the coordinated organization of the countries' plant health provisions, fosters the strengthening of the respective national quarantine protection systems, and enhances the joint capacity to defend the entire region from both the spread of established fruit fly species and the entry of new ones that could pose a threat to the Andean Area from the extreme northeast of South America (e.g., the Carambola fruit fly, *Bactrocera carambolae*, Drew & Hancock).

Cooperation of this kind also makes it possible to develop and adopt regional protocols for the different activities to be carried out, on terms that facilitate their international recognition and use in plant health and trade negotiations of interest to the countries.



A concerted regional strategy to combat fruit flies is also an internationally recognized tool for consolidating and protecting the establishment of areas free from specific species, and for encouraging the region's horticultural producers to develop follow-up projects to rehabilitate new commercially important areas and gradually improve product quality.

Furthermore, regional cooperative programs facilitate the development of bilateral programs to



combat the pest, as various successful experiences implemented in the Americas have shown. They are effective in helping to promote institutional improvements to national plant health protection services; and, they increasingly help enrich cooperation between the private sectors involved in horticultural production and marketing, and the government agencies responsible for plant health.

General guidelines for a regional strategy

The first step towards reaching agreement on and promoting an Andean regional strategy to combat fruit flies is, naturally enough, to establish and develop an efficient mechanism for interaction, dialogue, consultations and coordination among the people mainly responsible for the national pest prevention, control and/or eradication programs that are implemented in the territories of the respective countries.

To ensure the effectiveness and continuity of the efforts undertaken as part of a concerted regional strategy to combat the insect, it is essential that the national officials mentioned receive support from the respective plant health and government authorities. Then, the agreements reached by the group of specialists will become commitments for each of the countries, and it will be possible to carry out the activities required with a reasonable degree of autonomy and in a diligently, timely and effective manner.

The successful initiatives implemented in this field in the Americas have shown that a good way of preserving the international character, efficacy and continuity of a regional cooperation mechanism is to seek the support of an international cooperation agency to coordinate the efforts and - if necessary - serve as the technical secretariat. Via its offices

throughout the region, IICA could perform this task on behalf of the countries and their agricultural and rural development.

With a regional coordination mechanism in place that is accepted and endorsed by all the parties concerned, it would be possible to begin work at once on the development of lines of work of benefit to all concerned, such as the following:

- a. An up-to-date situation assessment of fruit flies in the Andean countries, including specific aspects such as the acreage and location of fruit and vegetable growing areas in the countries and regions covered by the program, the species of fruit flies present in those areas, and records of cultivated and wild hosts of the pest; and a compilation of the studies carried out on the biology and behavior of the insect in the areas of interest.
- b. An up-to-date assessment of the status of national fruit fly programs, including details of specific projects under way, work methodologies, resources committed to the respective projects, national facilities with the capacity to expand their operations to the regional level, national staff with sufficient training, experience and expertise to provide advisory services within the region, and the operating manuals and publications available that would be important for action at the regional level.
- c. An update on the information available on the importance of the horticultural industry in each country: production volumes (by plant species), volumes of horticultural exports and the target markets, volumes and sources of horticultural imports, and the seasonality of production and exports.
- d. An update on the technical protocols available for tackling, with similar parameters, each of the possible lines of work, such as detection systems (trapping and sampling), inventories of hosts and phenological studies, studies of geographical distribution and mapping systems, plant health emergency plans for the different species of fruit

flies present, manuals on agronomic practices, studies on the occurrence and management of the pest's natural enemies, and manuals on legal and quarantine controls, the use of the sterile insect technique, chemical treatments, quarantine treatments (cold, hot water, steam, irradiation, fumigants, etc.), environmental protection and safety, and the setting up and maintenance of areas free from the pest.

Drawing on this important preliminary work, any concerted regional strategy developed would basically seek to optimize both the technical and human efforts involved in combating fruit flies in each country, and the application of the national or international funds involved, especially the net benefits for producers and other sectors linked to the Andean horticultural industry.

Bearing in mind the size, complexity and diversity of the Andean countries, a general project designed to prevent, control and/or eradicate fruit flies in such a huge territory is unrealistic. Therefore, any regional strategy to combat the pest would have to focus on selected areas within the currently and potentially most important horticultural zones, and be implemented in the form of modules.

Thus, a key part of the regional strategy is the selection of the areas concerned, based on their characteristics and size, and the conditions for applying, monitoring and evaluating the most effective technical measures for combating the pest. If the efforts in those areas are a success, they could be used as replicable models in new productive areas, with the consequent benefits for all the parties concerned.

Hence, the regional mechanism responsible for coordinating the common strategy designed to combat the pest should also coordinate the efforts to make the most rational use of the comparative advantages that exist in each country with regard to facilities or opportunities, and the most successful initiatives implemented under their respective national programs, with a view to enhancing the regional strategy.

The regional strategy should also include the identification of the most favorable sites and facilities for implementing specific actions for the Andean Region, in areas such as staff training, the execution of applied research programs and the use of advanced technologies to which not all the countries have access.

Bearing in mind the enormous diversity of the ecosystems that exist in the areas with the greatest horticultural potential, the variety of fruit fly species present in each of them and certain factors that are important from the plant health protection perspective (such as the feasibility of quarantining them off, the organizational level of producers and the richness of the production of the different horticultural species), the regional strategy should consider, in addition to the joint activities already mentioned, specific activities for each country and their corresponding selected areas.

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With the same objective of optimizing the efforts undertaken and the resources used, the regional program would seek to standardize the criteria and procedures for each of the basic lines of joint work:

- Strategies for the organization, management and evaluation of the program
- Strategies for the management, control or eradication of the pest in selected areas
- Strategies for strengthening the regional quarantine system

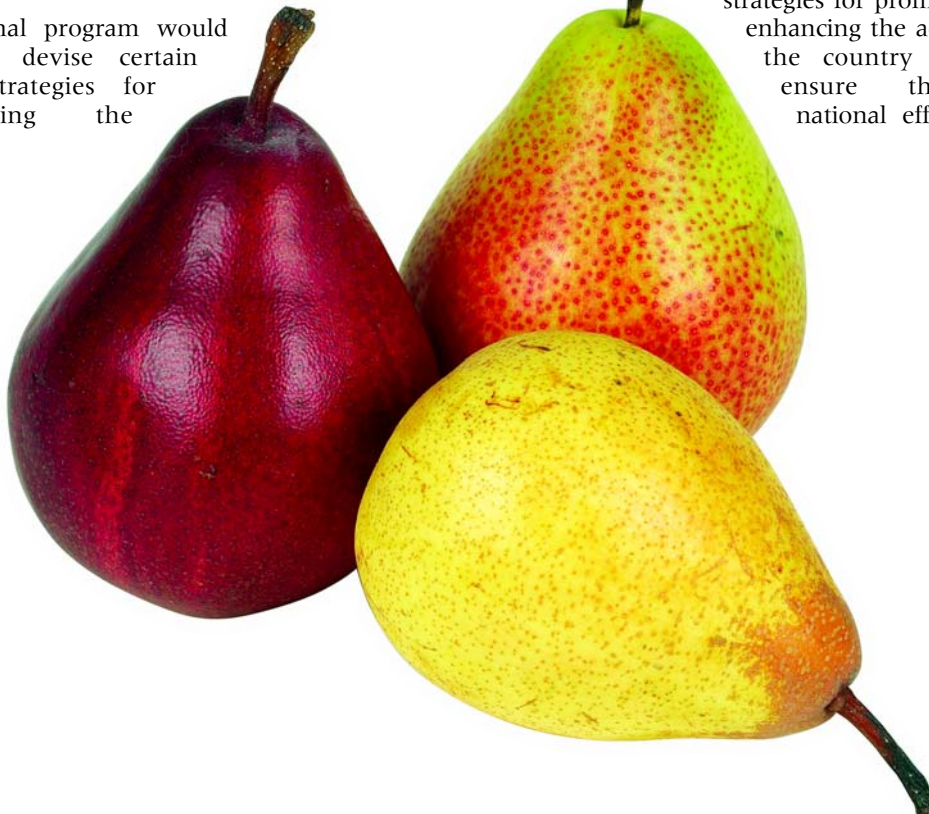
The regional program would also help devise certain specific strategies for strengthening the national fruit fly programs and making them more effective.

- Strategies for controlling the quality of the program's processes and activities
- Strategies related to the permanent monitoring of the environmental impact of the program's activities
- Strategies for training the staff involved in the program (professionals, technicians, producers and merchants, community)
- Public relations strategies and strategies for plant health education and dissemination campaigns
- Strategies for cooperation and advisory assistance from national and international experts

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national fruit fly programs and making them more effective.

As part of its work in the field of agricultural health, and as yet another contribution to the Andean countries, some years ago IICA coordinated the design of the profile of a project entitled "Regional strategy for preventing, controlling and eradicating fruit flies (Diptera: Tephritidae) in selected areas of the Andean countries," a project whose terms and proposals are still valid. Consultant Carlos Lobos Aguirre was placed in charge of the project, which was partially funded by the FAO. At the time, Lobo was the manager of Chile's highly publicized and successful national fruit fly project. The profile included three model strategies for promoting and enhancing the activities at the country level, to ensure that the national efforts were



consistent with the overarching framework of the regional program.

It is clear, then, that the Andean Region countries face a major challenge. They need to undertake, with international cooperation from IICA if possible, a joint, organized effort to intensify the struggle against a quarantine pest that is a constraint and a great threat to the development of the horticultural industry and the agricultural exports of each country, and of the region as a whole.

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References

Esparza Duque, J. 1998. Acción concertada contra las moscas de las frutas. Estrategia para el mejoramiento de la producción y el comercio hortofrutícola en la Región Andina. IICA. Andean Regional Center. Fascículo Técnico No.10. 4 p.

Esparza Duque, J. 1999. El programa Chile-Perú contra las moscas de las frutas. In: COMUNIICA. Year 4, No.11. pp. 8-14.

IICA. 1985. Proyecto Campaña conjunta para combatir la mosca del Mediterráneo (*Ceratitis capitata*, Wied.) en la zona fronteriza chileno-peruana. Lima, Peru. 51 pp.

IICA. 1990. Proyecto andino de prevención, control y erradicación de las moscas de las frutas. Lima, Peru. 100 pp. plus annexes.

Lobos, A. C. 1999. Perfil de Proyecto Estrategia regional para la prevención, control y erradicación de las moscas de la fruta (Díptera: Tephritidae) en áreas seleccionadas de los países andinos. FAO-IICA. Lima, Peru. 44 pp. plus annexes.

Olalquiaga, F. G. and C. Lobos A. 1993. La mosca del Mediterráneo en Chile: introducción y erradicación. Ministry of Agriculture. Agriculture and Livestock Service. Santiago, Chile. 268 pp.

Rohwer, G. G. 1992. Recomendaciones relativas a manejo/erradicación de las moscas de la fruta en el Hemisferio Occidental. NAPPO-OIRSA. San Salvador, El Salvador. Boletín No.10. 41 pp.