Small Apple Growers in Italy’s Trentino Region Benefit Greatly from Integrated Fruit Production (IFP)

*International Pesticide Benefits Case Study No. 97, November 2013*

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The province of Trento, or Trentino as it is commonly known, is a mountainous region and an important producer of apples (10,000 hectares) with annual production of about 450,000 tons accounting for about 20% of Italian production. Varieties include Golden Delicious (66% of production) and the famous Renetta Canada. The most notable factor is the very small average size of the typical operation- about 1.3 hectares which is due mainly to the division of farms between heirs. With persistent high levels of unemployment, the ownership of a small farm is an insurance policy. These farmers are able to earn a living by annually producing large quantities of nearly blemish-free fruit. Apple farming is the main source of income for about 10,000 families in Trentino. In addition, another 6000 families depend on income from the apple sector for packing, transportation and other secondary activities. The small size of apple operations has made it imperative that growers band together into cooperatives to organize marketing. Today, about 95% of the apples produced are assigned to the cooperatives [1].

In 1989, the Public Administration of Trento approved a program for Integrated Production standards. This was initiated so that farmers could benefit from a market position with clearly defined quality standards. Growers are obliged to sign agreements and the cooperatives are responsible for their members’ activities. Since 1991, Integrated Fruit Production (IFP) guidelines have covered all aspects of production, including inspection for compliance and fines payable for infractions. The guidelines include choice of varieties, pruning systems, grass cover, nutrition, thinning, irrigation, harvest time, farm records, and pesticide use [1]. Every year, the guidelines are updated. The list of approved chemicals is integrated with new registered compounds judged consistent with IFP. Impacts on beneficial organisms and resistance management requirements are taken into consideration. With the very high participation in cooperatives, the apple crop in Trentino is almost completely managed by IFP standards. A minor portion of the orchards are organic (241 hectares) [2].

The IFP guidelines for apples manage insect and disease pests by combining sampling, thresholds and pest forecasts with biological and cultural control methods and the use of selective pesticides. The use of selective insecticides has facilitated the biological control of mites by predatory mites and typically only a single miticide treatment is applied [1]. Apple scab is managed with 10-24 treatments with preventative and curative fungicides [2]. Codling moth has two generations per year. Mating disruption, combined with insecticides, is used in high pressure orchards (30%) [2]. In low pressure orchards, pheromone applications are not economically feasible [3]. The most common situation includes an application of an insect growth regulator at the first egg-laying period and two more treatments using insecticides with a different mode of action [2]. A spring insecticide treatment against psyllids is mandatory because they are vectors of apple proliferation (AP) disease [4]. AP occurs in all countries of central and southern Europe but its highest incidences are in Trentino and southwestern Germany. The disease causes important economic losses due to small size of fruits and poor taste.

In Trentino, uncontrolled codling moth would damage 50-90% of the apples and apple scab would likely damage 100% of the apples [5]. Apple production in Trentino remains generally quite profitable and provides a major contribution to the economic and social standards of the province. By preventing damage from insects and pathogens, pesticides play an essential role in the economic and social well-being of the region.

**References**

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