

High Quality Italian Tomatoes Depend on Fungicides

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Leonard Gianessi and Ashley Williams

Italy is the most important country in Europe for the production of tomatoes producing 14 billion pounds a year. 90% of Italy's tomatoes are grown for processed products (canned, paste, sauce). Tomatoes are produced principally in the North (Emilia Romagna, Lombardia) and in the South (Puglia, Campania).

Late blight is the most dangerous disease of tomatoes in Italy. Late blight is caused by *Phytophthora infestans*, a pathogen which also causes late blight of potatoes. The late blight pathogen was first found attacking tomatoes in 1847. In the past heavy epidemics led to considerable yield losses in Italian tomato-growing areas [1].

The fungus attacks all aboveground parts of the tomato plant. Infected foliage becomes brown, shrivels, and soon dies. Lesions can expand rapidly and result in complete defoliation in 14 days. When severe, all the plants in a field can be killed in a week or two. On tomato fruit, greenish brown, greasy appearing spots may enlarge to cover the entire fruit. Decaying vines may be identified by a foul odor [2]. Late blight lesions on tomato fruit are often followed by soft rot and disintegration [3].

In Northern Italy, typically 5-6 sprays are required per season for late blight control [4]. Protective fungicides are sprayed early in the season to control primary infections generated by overwintering inoculum. The spray program usually continues with penetrants or systemics in combination with protectants applied 2-3 times during canopy formation and flowering. After fruit set, fungicides with a high affinity for cuticular waxes are recommended twice to improve fruit finish (high quality raw materials are important for processed tomatoes). In Southern Italy, which is hot and dry, fungicide programs on industrial tomatoes are simplified to around three sprays [4]. Organic tomatoes are mainly grown in Sicily where dry climate usually leads to less disease pressure. As a result, copper fungicides have usually been able to control the disease.

In recent research trials at the University of Bologna, late blight almost completely destroyed the untreated tomato plants due to extremely favorable weather conditions [5]. Fungicide sprays reduced the percent of diseased leaf area from 98% to 3% and reduced the percent of diseased fruit from 22% to .1% [5].

References

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Italian tomato field



Late blight infection



Above: untreated plot
Below: fungicide treated