Chile is the number one exporter of table grapes in the world with annual exports of 800,000 tons valued at $1.3 billion. Approximately 75% of Chile’s grape production is for export markets. Chile is the major supplier of table grapes for the U.S. and the E.U. in winter months. In recent years, Chilean table grapes have been marketed up to 120 days after harvest and transported to markets 15-30 days away by overseas transport [1].

Importing countries have very low (.5%) tolerance for decays in import shipments. If a lot fails to make the grade tolerance, growers may have important financial losses due to price reduction or even to rejection of the entire lot [1]. Postharvest decay of grapes can be minimized with preharvest fungicide sprays in vineyards. The main fungal grape disease targeted by fungicide sprays in Chile is gray mold (Botrytis).

Berries infected with Botrytis left in the vineyard at harvest dry and become sources of spores. Inside the grape, the fungus forms side growths, which exude enzymes that degrade and soften the materials that cement grape tissue walls together. The fungus spreads between the skin and pulp before entering and degrading the pulp. Cracks in the berries form in which spores are produced that spread gray mold to other berries in the cluster, and to other clusters of grapes. Botrytis severely affects stored table grapes because it can infect the grapes in the field and then continue to grow in the berries in storage, producing nests of gray-white fungus. If berries are infected with powdery mildew before they attain full size, epidermal cells are killed and epidermis growth is prevented. As the interior pulp continues to expand, berries split and either dry up or rot. In later stages of decay the berries begin to lose their juice.

In Chile, gray mold is a common disease. High disease incidence and severity occur when wet and cool conditions persist during the growing season, particularly if they are prevalent near harvest [3]. Several fungicide treatments between bloom and harvest are essential to control the disease in Chile [2]. Research has shown that fungicide treatments prior to harvest are 100% effective against botrytis [1].

References