

Disease control considerations in organic grape production

Annemiek Schilder, Department of Plant Pathology, Michigan State University

Introduction

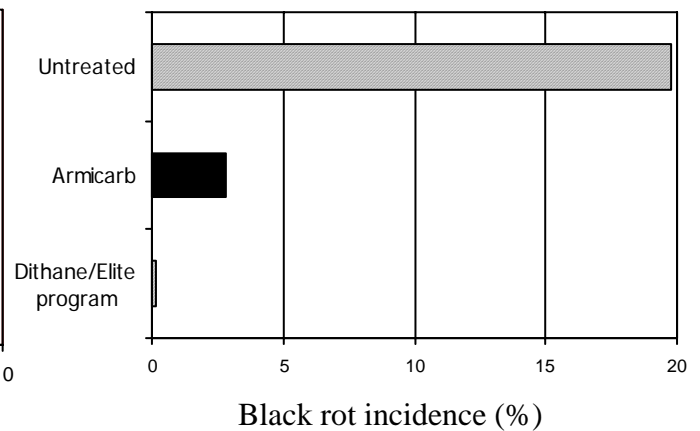
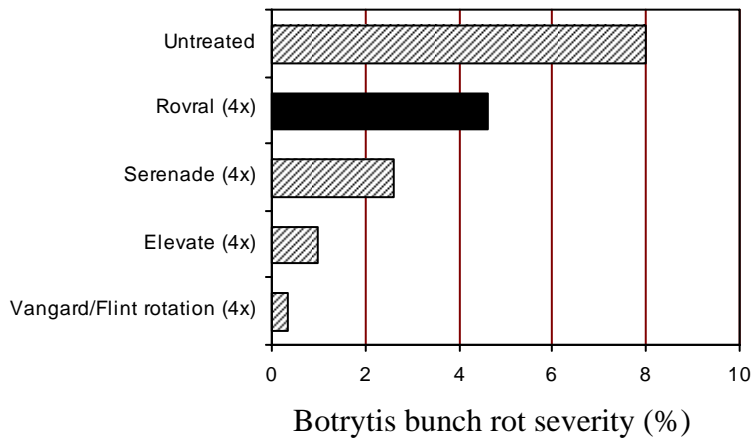
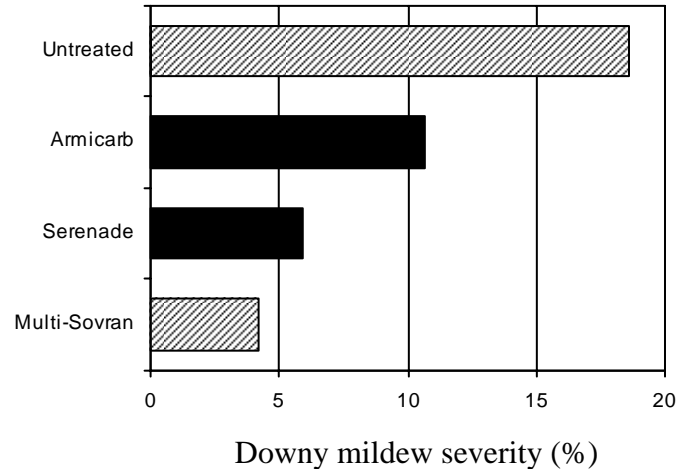
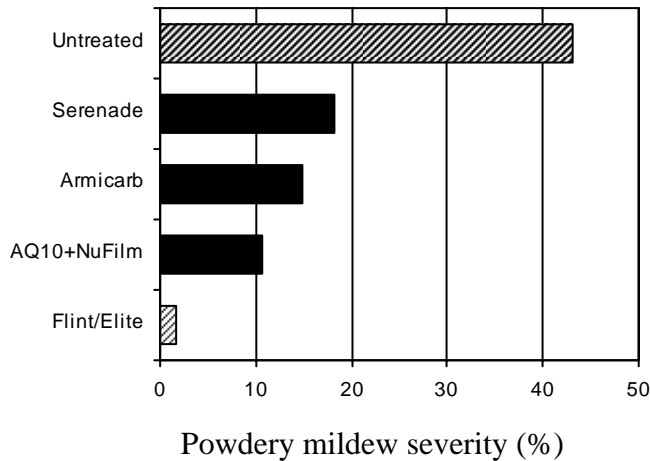
The term “organic” sometimes is confusing to people. The Organic Trade Association offers the following definition: “Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony.” The following description can be found in Wikipedia: “Organic food is produced according to certain legally regulated standards. For crops, it means they are grown without the use of conventional (synthetic) pesticides, artificial fertilizers or sewage sludges, and that they are processed without ionizing radiation or food additives. For animals, it means they are reared without the routine use of antibiotics and without the use of growth hormones. Also, at all levels, organic food is produced without the use of genetically modified organisms.” Animal welfare, fair treatment of farm workers, and maintenance of family farms may also be considerations.

There is no question that the demand for organic food products continues to rise. People tend to buy organic products for various reasons. Whether you choose to grow food organically for philosophical or purely economic reasons, the regulations for organic crop production and handling are provided by the USDA national organic program. Farms must be certified by accredited certifying agent based on farm plan and on-site inspection, and there is a 3-year transition period before food can be labeled organic. The stringent rules for production require good recordkeeping.

Can grapes be grown organically in Michigan?

The challenges in organic grape production lie primarily in the realm of vine nutrition and pest control, in that generally only natural (no synthetic) products may be used. This of course limits the number of products that growers can use, since most modern pesticides are synthetic. The list of allowed products includes naturally occurring substances such as sulfur, copper, oils, and salts, as well as plant extracts, biological control agents, and insect pheromones. However, some naturally occurring substances (e.g., lead salts and arsenic) are prohibited in organic production, whereas a few synthetic substances (e.g., hydrogen peroxide) are allowed. For a list of products allowed in organic production check the website of the USDA National Organic Program which contains the National List of Allowed and Prohibited Substances (www.ams.usda.gov/NOP/NOP/standards/ListReg.html) or the OMRI (Organic Materials Review Institute) list (www.omri.org). Some restrictions are placed on some of the products (e.g., copper) in that the need for the product must be shown before use based on scouting. Usually, the certifying agency is the final arbiter of the products that are allowed on the farm. In California, organic grapes can be grown relatively easily using sulfur since powdery mildew is the main disease problem, whereas in Michigan, fungal diseases are common and more difficult to control due to the humid climate. Disease control in organic vineyards is possible even in Michigan, but there are fewer fungicide

options than in conventional production and these are generally not as effective as the best conventional fungicides – therefore they may need to be applied more often. In addition, there will need to be more emphasis on site and cultivar selection (disease-resistant or tolerant varieties), disease scouting, disease prediction models, cultural control methods (pruning out diseased wood, leaf removal, canopy management), and use of natural and biological fungicides. Dormant sprays can also be an important component of an organic disease management program. Below are the results of trials with organically approved fungicides for disease control in Michigan vineyards.



Resources for organic grape production:

- Grapes: Organic Production Guide (ATTRA: www.attra.org/attra-pub/summaries/grapes.html)
- MSU Pocket IPM Scouting Guide for grapes (E-2889)
- MSU Fruit Management Guide (E-154). Also available online at web1.msue.msu.edu/pestpubs/E154/
- MSU Grape Website (www.grapes.msu.edu)
- MSU Enviro-weather Website (www.enviroweather.msu.edu/home.asp)