

Northern Michigan FruitNet 2016 Northwest Michigan Horticultural Research Center

Weekly Update

New-old options for European brown rot control in tart cherries

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The fungal disease European brown rot caused by *Monilinia laxa* is a concern during bloom time in Michigan tart cherries because this pathogen can infect flowers and cause blossom blight. The varieties Balaton and Meteor are highly susceptible to European brown rot, much more so than Montmorency, although we have also observed infections in Montmorency orchards under optimal conditions for disease. Wet weather and temperatures in the 40s and 50s during bloom are ideal for European brown rot infection. In particular, slow drying orchards, orchards in low-lying areas, and orchards affected by fog are most susceptible to European brown rot infection in both Balaton and Montmorency varieties.

Previously, two applications of Indar, one at popcorn and one at bloom, have been the best strategy to control European brown rot. New data from Dr. George Sundin's pathology lab show other materials are also effective options for European brown rot, and rotating modes of action will help to delay the possible development of resistance in the pathogen to Indar. This study was conducted in Balaton trees, and all of the materials provided significantly better control of European brown rot compared with untreated trees (Table 1). However, there are relatively few fungicide modes of action used in tart cherry disease programs, and growers should consider how to best rotate these materials throughout their season-long disease programs.

For example, most growers should be using the SDHI materials (Luna Sensation and Merivon) at first cover to target cherry leaf spot and powdery mildew, and a second SDHI application at pre-harvest for fruit brown rot and to provide longer residual control of leaf spot. Although the SDHIs are effective against European brown rot control at bloom time, these materials may not be the best for maintaining a sustainable resistance management strategy. As mentioned previously, Indar has been the choice material for European brown rot, and as a result, there is a higher risk for resistance development to Indar. Therefore, choosing an alternative to Indar will help prevent chances of resistance development. Of the remaining materials, Gem and Topsin M have provided good control of European brown rot and have alternate modes of actions from the commonly used SDHIs and Indar. These two materials provided better control compared with Captan alone, and the data show that Gem and Topsin were comparable to Indar and the SDHIs (Table 1).

Table 1. European Brown Rot Efficacy Trial Results

Treatment (Rate/Acre)	Fungicide Class	% Cluster Infections	% Terminal Strikes
1. Luna Sensation (5 fl oz) + R56	SDHI	1.5 c	0.3 c
2. Gem (3.8 fl oz) +R56	Strobilurin	6.0 c	4.0 c
3. Topsin M (30 fl oz)	Benzimidazole	3.0 c	1.3 c
4. Topsin M (30 fl oz) + Captan 80 WDG (2.5 lb)	Benzimidazole	3.5 c	2.0 c
5. Captan 80 WDG (2.5 lb)	Heterocyclic compound	29.3 b	18.5 b
6. Merivon (5.5 fl oz) + Sylgard	SDHI	1.8 c	0.8 c
7. Indar (6 fl oz) + LI 700	Sterol Inhibitor	4.0 c	2.5 c
8. Indar (12 fl oz) + LI 700	Sterol Inhibitor	1.3 c	1.3 c
9. Untreated control		46.3 a	25.5 a

The European brown rot fungus overwinters on the previous seasons' infected shoots and begins sporulating during wet and cool conditions in the spring. European brown rot infections have been low in recent years, and most orchards likely have a low inoculum level going into the 2016 season. However, if the current cool and wet conditions continue through bloom, this weather will favor European brown rot infection. Under these optimal conditions, this disease is a particular concern in orchards that meet the previously mentioned criteria. Additionally, Balaton trees are highly susceptible and should be protected from infection even in suboptimal conditions for EBR control. Two applications of an efficacious material at popcorn and bloom remains the recommended control strategy for 2016.