The Use of Serenade MAX® to Control Summer Diseases of Apples in the Eastern U.S.


Materials and Methods

Yoder Virginia Trial - Six year old Jonagold trees were treated with a handgun starting at pink until 7th cover for a total of 10 applications at 14 day intervals. Biotune surfactant at 12 oz/a was added to all Serenade treatments. Means followed by the same letter are NSD (P>0.05, Waller-Duncan K ratio).

Palmer New York Trial - Twelve year old Cortland trees were treated with a handgun starting at petal fall until 3rd cover for a total of 6 applications at 14-21 day intervals. Biotune surfactant at 13 oz/a was added to all Serenade treatments and Captan 2.5 lb/a was added to all treatments and all timings. Means followed by the same letter are NSD (P>0.01, Student-Newman-Keuls).

Turechek New York Trial - Nine year old Empire trees were treated with a handgun starting at bloom through fifth cover for a total of 6 applications. Biotune surfactant at 1 pt/a was added to all Serenade treatments and Captan 0.8 lb/a was added to all treatments and all timings. Means followed by the same letter are NSD (P>0.05).

Diseases were evaluated through the season and at harvest on the foliage and fruit.

Results and Discussion

Yoder Virginia trial - Serenade MAX at 12 ounces per acre with Biotune when used in continuous cover sprays provided excellent control of cedar-apple rust, flyspeck, sooty blotch, Brooks spot, and powdery mildew, under lower to high disease pressure (disease dependent), and results were comparable to other organic and reduced input biocontrol agents. Growers should be encouraged to use Serenade in a program with other fungicides during the cover spray period to reduce resistance development and increase the product array effectiveness.

Palmer New York trial - Serenade MAX at 3 lbs per acre with Biotune when alternated with one application of Flint during the cover spray period provided excellent control of flyspeck and sooty mold. Results were comparable to the conventional grower standard program.

Turechek New York trial - Serenade WPO at 2 lbs per acre with Biotune three applications when alternated with one application of Flint during the cover spray period provided excellent control of apple scab under high disease pressure. Results were comparable to the conventional grower standard program.

AgraQuest’s Serenade MAX, based on unique strain of Bacillus subtilis, has utility well beyond organic apple production. When used in conjunction with synthetic fungicides and other biologically based pesticides, whether in tank-mixes or in rotations, it provides growers with an effective tool not only for fire blight in the bloom period, but also for summer cover spray disease management. Serenade has the added benefits of high levels of crop, human and environmental safety, a unique mode of action for resistance management, and plant and beneficial organism safety for use in IPM systems.

Figure 1 – Serenade MAX Against Cedar Apple Rust in Apples (K. Yoder, Virginia Tech, Winchester, VA - 2005)

Figure 2 – Serenade MAX Against Flyspeck in Apples (K. Yoder, Virginia Tech, Winchester, VA - 2005)

Figure 3 – Serenade MAX Against Sooty Blotch in Apples (K. Yoder, Virginia Tech, Winchester, VA - 2005)

Figure 4 – Serenade MAX Against Brooks Spot in Apples (K. Yoder, Virginia Tech, Winchester, VA - 2005)

Figure 5 – Serenade MAX Against Powdery Mildew in Apples (K. Yoder, Virginia Tech, Winchester, VA - 2005)

Figure 6 – Serenade MAX Against Scab in Cortland Apples (R. Palmer, Reality Research, NY - 2004)

Figure 7 – Serenade MAX Against Sooty Mold in Cortland Apples (R. Palmer, Reality Research, NY - 2004)

Figure 8 – Serenade MAX Against Scab in Empire Apples (R. Turechek, Cornell University, Geneva, NY - 2004)