

# '3 x 3' program controls apple scab

*Crabapple trees on this program stayed green and healthy looking, with little or no leaf yellowing or defoliation.*

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**I**t's not too early to begin planning your spray program for apple scab of crabapple, especially after five or six consecutive years of epidemic scab.

We suggest you use Banner fungicide in a "three-by-three" (3 x 3) spray program.

#### **Why three sprays?**

All spray programs should strive to be as minimal, efficient, and efficacious as possible. The challenge with landscape plants is to determine the fewest number of sprays that will provide the most "aesthetically acceptable" disease control; realizing that perfect scab control is not needed for landscape crabapples. Over the past number of years we have field-tested both a 2-spray and 3-spray program for season-long control of apple scab on crabapples. While the 2-spray program generally gave acceptable early season scab control, it often resulted in poor mid- and late season control; trees on the 2-spray program frequently showed light to moderate leaf yellowing and defoliation by late July. However, the 3-spray program has proven to be very reliable in providing season-long control of scab. In all years tested (most of those being epidemic years for apple scab), trees on the 3-spray program remained green and healthy appearing with little or no leaf yellowing or defolia-

tion at the time final evaluations were made, generally in late August or September. Scab lesions did develop during the latter part of summer on trees treated with the 3-spray program, but never to the extent of causing significant defoliation.

#### **Why a three week interval?**

In those years when we attempted to stretch the interval from 3 to 4 weeks the program was a distinct failure. For example, the percent of leaf scab jumped from 10 percent to nearly 80 percent by late June, when a four week rather than three week interval was used in our early field trials. Growers are advised to mark their calendar with three week intervals and "stick to it", being sure not to stretch the interval.

In those years when infection periods are few, you could get away with stretching the interval between sprays or using just two sprays.

However, a primary benefit of the program is that it takes the guessing out of scab control, it's a "no-brainer"; you simply spray when the calendar tells you to spray.

#### **Why begin at pink?**

The first spray should be applied at the phenological pink stage, just prior to bloom. We recommend early pink if wet conditions have predominated before pink; however, if conditions have been dry, late pink is preferred. On average, the pink stage of tree phenology coincides with the time primary scab spores are at their peak. Before pink, there would be the probability of too much scab coming in later in the season, while if sprays are started after pink, there is the risk of having so much primary scab build-up you could never bring it under control. Trials in which the initial spray was delayed until petal fall showed severe cluster leaf scab before the

initial spray was even applied, and much defoliation by late summer.

#### **Why Banner?**

The excellent curative abilities of the new sterol demethylation inhibitor (DMI) fungicides have allowed us to stretch spray intervals and reduce the number of applications for numerous landscape foliar diseases, such as powdery mildew, dogwood anthracnose, and cedar-apple rust. Recently, DMI fungicides have also been used to reduce the number of sprays to control primary apple scab on commercial apples; where an accepted alternative to early season primary scab control is to make just

*Starting at the pink stage, trees are sprayed three times at three-week intervals.*

four spray applications starting at tight cluster. The DMI fungicide, Banner, has been the primary fungicide used in our field trials, because of its broad ornamental labeling and excellent systemicity and curative abilities. Most years we used a Banner 1.1EC formulation at 2-oz. per 100 gallons. This past year we re-evaluated our 3-spray program using the newly improved formulation of Banner (Banner Maxx), at 2- 5- and 8 oz per 100 gallons of water. All rates gave excellent season-long scab control. However, the higher 5- and 8-oz. rate gave significantly better control of early season scab than the lower 2-oz. rate. Based on these findings, we believe the best season-long control of apple scab can be achieved by using a 5-oz. rate of Banner Maxx with the 3 x 3 program. **LM**

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