Orchard Outlook Newsletter

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This Issue Contains:

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Bud Development

I am always amazed at how fast fruit buds can develop, once warm weather arrives. Warm weather for the past week has brought bud development along quite quickly to the point where McIntosh buds are approaching the half-inch stage in the warmer areas of the Valley. On May 6th, I did see Idared buds that were at the half-inch green stage of development. It is interesting to note that last year green tissue was observed in mid-April, however bud development was slow and in the May 8th Orchard Outlook I noted that McIntosh was at the half-inch stage of development.

New Orchard Management Schedule

The Orchard Management Schedule for apples and pears was updated this past winter by Bill Craig and is being made available by the NSFGA. If you have not already obtained a copy of the updated guide you can do so by contacting the NSFGA office at 678-1093.

Apple Scab

The first infection period of the 2003 growing season was recorded this past weekend. A wetting period began around 11:30 pm on May 2nd in Kentville and continued until 2 pm on May 3rd. An infection would have been established around 6 pm on the 2nd. Growers should not be too concerned about this infection period for the following reasons: 1) most orchard blocks had no or very low levels of scab last year and thus would be going into the season with low levels of overwintering spores, 2) the spore discharge from overwintering lesions was light during this infection period and 3) there was very little tissue exposed for discharged spores to fall on.

A wetting period began at 2:00 am on Wednesday, May 7th, however at the time of writing the Orchard Outlook it was starting to dry so it is questionable if an infection will occur. If growers have yet to apply a fungicide for scab control they would be well advised to do so as soon as possible.

Powdery Mildew

Powdery mildew has been considered a minor disease in Nova Scotia, with more emphasis placed on the control of this disease on newly planted trees purchased outside of Nova Scotia. During the past couple of growing seasons this disease has become more common in commercial blocks of orchard with heavy infection being noted in Cortland blocks, as well as other cultivars. The spread of this disease in part has been related to the warm weather conditions that have been experienced for the past couple of growing seasons. It is felt that powdery mildew infection got ahead of growers last year during the bloom to calyx period when hot humid weather was conducive to its spread. Although this past winter was colder than normal and may have reduced some overwintering infections, growers should still plan to apply appropriate fungicides to control powdery mildew in blocks where it was a problem last year. In blocks which had a heavy mildew infection last year, a fungicide program to control mildew and scab should begin at half-inch green. In blocks with a light to moderate mildew infection a program to control mildew can begin at tight cluster. Because of the problem that growers had with mildew last year I am including below the article I wrote last year on powdery mildew.

The fungus overwinters in dormant shoot and blossom buds, which were infected the previous year. Spores (conidia) are produced and released from leaves as they open and emerge from the infected buds at about the tight cluster stage of development. Spore germination takes place in high relative humidity, which is usually available on the leaf surface at temperatures from 10 to 25 ºC. The optimum temperature for germination is 19 to 22 ºC. Unlike apple scab spore germination does not take place in free moisture. Temperature plays a greater role in infection at the start of the season than relative humidity. Mildew build up in an orchard can be quite rapid when there is an abundance of overwintering inoculum and secondary lesions on young foliage. Secondary infections will take place until terminal growth is terminated. It is typical to see foliage infection in Nova Scotia however powdery mildew can infect the fruit, which takes place from pink to bloom. Overwintering buds are infected soon after initiation. Infected buds are low in vigour and lack winter hardiness, resulting in a reduction of primary inoculum at temperatures below -24ºC.

The most common symptom of powdery mildew observed in Nova Scotia is whitish lesions on curled or longitudinally folded leaves. When infection takes place from a terminal shoot bud the whole shoot will become infected taking on a whitish-grey appearance and the growth will be stunted. Infected leaves will be leathery in texture. When left unchecked mildew spreads to leaves and the white powdery lesion will be noted on the underside of leaves and the edge of infected leaves will be rolled up. Infected flower buds will open several days later than healthy buds. Secondary infections of flower buds can result in fruit russeting which will be netted in appearance. Fruit infections are rare unless there has been a heavy build up of inoculum. The cultivar Jonathan, not commercially grown in NS, is quite susceptible to fruit infection. Powdery mildew can result in economic loss due to aborted blossoms, reduced fruit quality, reduced tree vigor and yield on bearing trees and poor return bloom. Nursery trees can arrive with infected buds and infection on young trees can stunt growth and adversely affect tree form.

Depending upon weather conditions growers should be able to obtain adequate control of powdery mildew with one to two fungicide applications in the tight cluster to pink stage of development. Additional sprays may be required when there is a heavy overwintering inoculum or weather conditions are suited to the spread of this is disease during shoot growth. Fungicides that have activity against powdery mildew are: Nova, Nustar, Sovran, Dikar, Senator and Sulphur. These products all have activity against apple scab, however, the rate for mildew control may be higher than the recommended for scab. The newer fungicides Nova (340 g/ha), Nustar (200g/ha) and Sovran (240-450 g/ha) have excellent activity against mildew and are listed in terms of effectiveness.

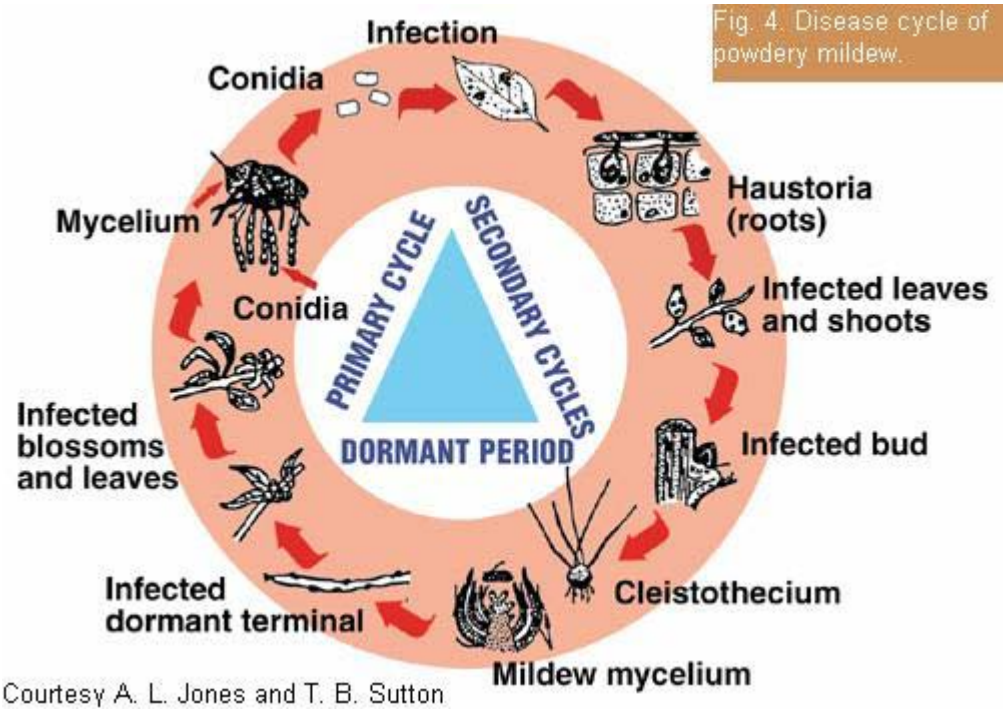

Fig. 4. Disease cycle of powdery mildew.

Courtesy A. L. Jones and T. B. Sutton

New Fungicide for Stone Fruit

PMRA has granted temporary registration for the use of Indar 75WSP (Febuconazole) on stone fruit for Brown Rot control and for Black Knot control on plum and sour cherry. For Black Knot control start applications at the white popcorn stage of blossom development and apply at 7-day intervals for a 5 to 6 week period. Coverage of young shoot growth is essential for disease control. For the blossom blight stage of Brown Rot, begin applications at the early bud stage of flower development when the blossoms are showing colour. Repeat application at full bloom and petal fall. For the fruit infection stage of Brown Rot, start applications 3 weeks prior to harvest using a 7 to 10 day spray interval. Indar can be applied up to 1 day before harvest. Indar belongs to the group 3 of fungicides and to avoid resistance it should be rotated with other fungicides that do not belong to the group 3 class of fungicides. Do not apply Indar more than 7 times in a season. The recommended rate of Indar for Brown Rot and Black Knot control is 140 g/ha.

Gloeosporium Canker:

If yesterday was an indication of things to come, it would appear that growers will note more Gloeosporium canker infection in young plantings this spring. This may be due to stress put on young trees with last year's heavy crop and dry weather, combined with lots of fall moisture. Heavily infected trees should be removed in the summer to reduce inoculum and slow the spread of this canker disease.

Red Mite

Hopefully growers have reliable red mite egg count information available to help determine if an oil spray is an appropriate step this growing season for European red mite control. Red mite egg counts in 20 commercial blocks indicated that 60% had non- treatable populations, 35% required an oil treatment and 5% required a post-bloom miticide (credit source Michelle Larsen & Dr. Rob Smith, AFHRC). The optimal timing for oil treatments is at tight cluster, however weather does play an important role in timing oil treatments. Warm temperatures can speed up bud development thus providing growers with a very narrow time period to make the oil treatment and the spray conditions can be less than ideal. Frost can also restrict the time period for oil. An oil application to tissue that has been damaged by frost can enhance the tissue damage. Growers should not apply oil during cold temperatures and should wait at least a minimum of 24 hours, and preferably 48 hours, following a frost before applying oil. Once past the half-inch stage of bud development, growers should pick good spraying conditions to apply oil. Also keep in mind that oil is not compatible with Captan.

European Fruit Tree Borer

European fruit tree borer occurrences were down last year but can still present a threat to producers, especially to trees that are under stress. Dr. Rob Smith informed me that mature beetles will start to fly during periods of warm weather, i.e. 2 to 3 days of sunny warm temperatures above 12°C. This borer is quite susceptible to many insecticides, and organophosphate insecticides applied to control winter moth will also control this borer.
Due to budget constraints AAFC will not have traps out this year in orchards monitoring flights of this beetle.

Upcoming Insects

Insects to keep an eye out for during the half-inch green to tight cluster stage are: European Red Mite, Spotted Tentiform Leaf Miner, Tarnished Plant Bug, Winter Moth, Green Pug Moth and Fruit Worm.

Weed Control

Growers who will be applying a residual herbicide such as Princep or Sinbar to control germinating broadleaf weeds and annual grasses, should apply the herbicide prior to weed germination or just after the weeds have germinated. Growers sometimes fail to obtain good control with these products because they apply them too late after the weeds have germinated and grown beyond the sensitive stage. Growers could now apply 2,4-D in the grass laneways to reduce broadleaf weeds, which may harbour Two Spotted Mite and Tarnished Plant Bug.

Grafting

Growers who are planning to bark graft older trees over to new cultivars could begin now. Grafting can take place right up to bloom period. When grafting make sure that you are 1) using dormant scions, 2) that the scions are held in place with tape such as masking tape, and 3) the scions and pruning cuts are protected with a grafting compound.

Young Trees

Do not forget to look after your young trees. Young plantings can get overlooked during the busy times, however these trees would benefit more from pruning than some of your older blocks. Delaying the pruning of young trees will result in lost growth and vigour. Don't forget to prune your newly planted trees. If you are planting large trees with a limited root system you may have to remove some of the top growth to bring the trees back into balance (shoot to root).

IPM Trap Order

The trap order from was sent out earlier this week by mail. If you did not receive one and would like to please call the NSFGA office at 678-1093. The deadline for trap orders to be received in the office is May 16.

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