



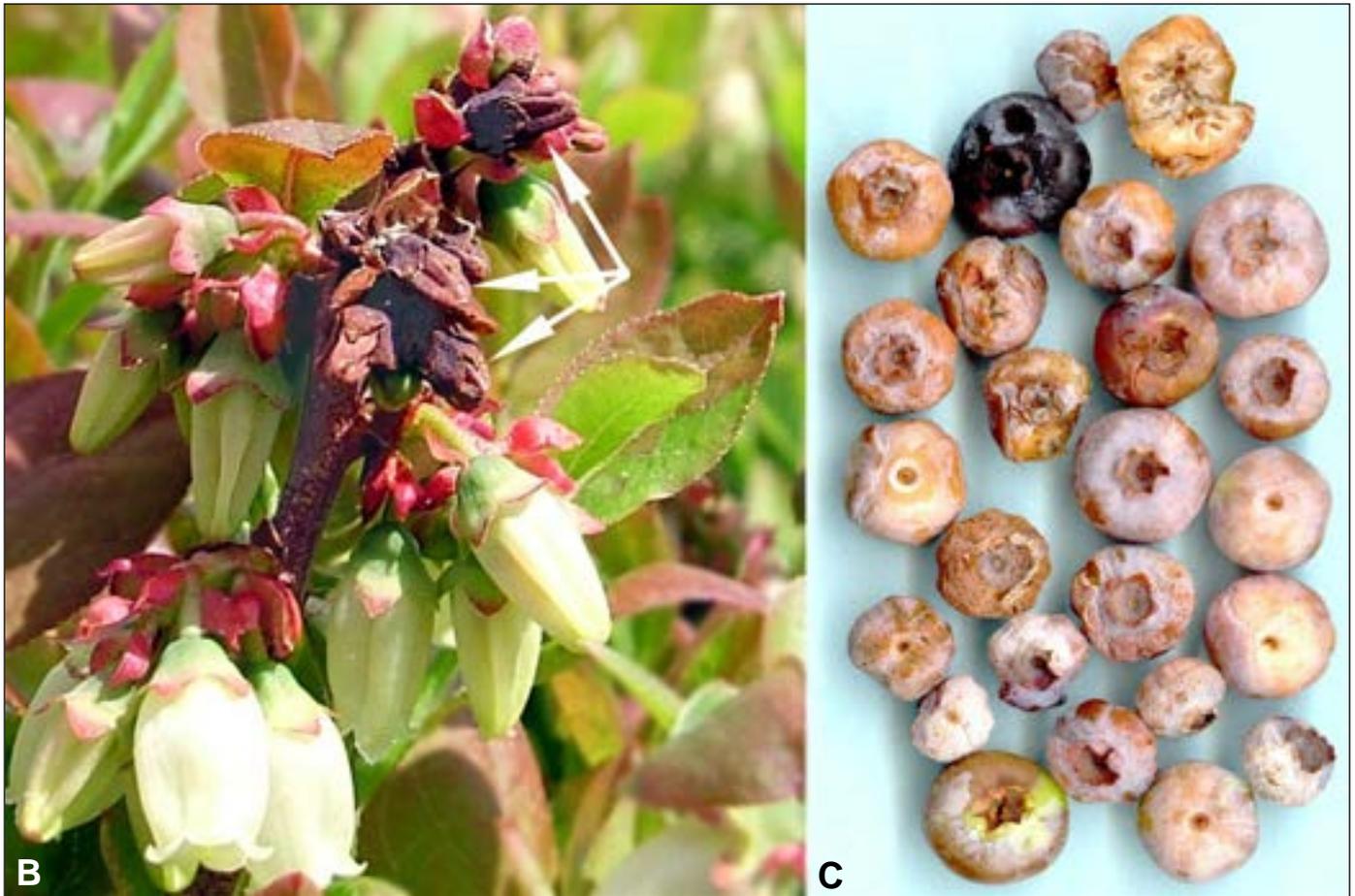
Monilinia Blight of Wild Blueberry

Monilinia blight, which is also referred to as mummy berry can be found in most fruiting fields in New Brunswick. It causes a blight of the leaves and blossoms in late May and early June. Fruit production losses resulting from this disease can vary from trace to severe between years, or fields, or even within a field. Crop management techniques and fungicides can be used to reduce disease losses but their use should be directed by accurate assessments of yield loss. Proper selection of fungicide and correct application timing are important in achieving good control.

Disease Symptoms

Starting in the third week of May in the south of the province, and 10 to 15 days later in the north, infected leaves turn brown starting at the base of the leaf where the stem is attached. Eventually the entire leaf becomes dark brown and collapses (Figure A). Individual blossoms and blossom clusters turn brown and wither but remain attached to the plant (Figure B). Although difficult to see, the fungus is visible on the blossom stem and leaf midrib as a gray or tan mold. The disease is frequently patchy in a field and may affect only individual fruiting stems, or entire clones may be blighted. This is mostly due to the distribution of mummy berries from the previous crop and variation in bud development. As the season progresses the expansion and growth of leaves from uninfected buds obscures the damage and plants appear healthy. Since blossoms have been destroyed, fruit production may be reduced but there is no long term damage to the plants. Other types of damage that may resemble Monilinia blight include frost, herbicide damage and Botrytis blight. Not all of the infected blossoms wither and die. Some produce normal appearing fruit which turn salmon colored, shrivel and drop to the ground prior to harvest. In severely infested areas, these “mummy berries” (Figure C) can account for two or three percent of the fruit produced.





Disease Cycle

The fungus (*Monilinia vaccinii-corymbosi*) which causes this disease produces primary spores only for a brief period starting in early May in the southern part of New Brunswick, and mid-May in the more northern areas. These spores originate from the mummy berries produced in previous crops. Blossoms and leaves can be infected any time from bud burst to the start of the bloom period. For infection to occur, rain or an extended period of fog is necessary. When the weather is warm the length of time the plants must remain wet for infection to occur is shortened. Blossom and leaf buds exposed for even a brief period to temperatures below freezing are much more susceptible to infection. If warm wet weather follows within four days of a frost, conditions are ideal for blight infection.

The development of blight symptoms following infection requires 10 to 20 days depending on temperature. Once blight is evident in the field most of the primary spores have already been released from the mummy berries and the crop is at the end of its susceptible period. Applying fungicides at this time is therefore not effective. Secondary spores produced on blighted plants infect blossoms which then develop into mummy berries. The application of fungicides to prevent infections leading to these mummy berries is not however recommended under current disease management practices. Most of the mummy berries germinate during the following year, but some will not produce spores until the second or third season. Fruiting fields are therefore at risk from mummy berries produced in the previous crop or from spores carried by wind from adjacent sprout fields.

Control Strategy

The decision to control blight is based on the cost of control measures, the value of blueberries and the expected crop loss from blight. Predicting the level of blight in a field is based primarily on observations of the blight level in previous crops. Accurately assessing the disease losses in each field greatly improves these estimates and can be combined with a field survey to detect insect infestation and determine percent pollination.

For fields with a good yield potential and a past history of blight, the first fungicide spray should be applied when 40 percent of the blossom buds have the bud scales separated (Figure D 4). Bud development can vary greatly between different locations and each field must be checked to determine the correct time to spray. A second application should be applied 7 to 10 days later. Sprays are not required if dry weather is forecasted and precipitation has not occurred within the last four days. Temperatures below freezing greatly increase the chances of blight and the need for protection. If the crop has reached the stage where the leaves have unrolled or the first blossoms are visible, the susceptible period is past and sprays are not required.



Some of the fungicides currently recommended for blight control can eradicate infections that have already occurred, if applied within 72 hours of the beginning of the wet period. These fungicides are absorbed into the plant in two hours and therefore can be applied just prior to forecasted rain or even during a short break in continuing wet weather. Good spray coverage is important and growers using mist blowers should spray only under calm conditions and cover a swath of no more than 15 meters (50 feet). Boom sprayers can achieve good coverage with moderate spray volume and pressure since there is not enough leaf development at this time to prevent the spray from being deposited on the developing buds.

Flail mowing, which does not destroy mummy berries, has been shown to increase blight levels compared to pruning by burning. For fields which are usually flail mowed, and where blight has become a problem, pruning by burning every second or third cycle will help suppress blight. To be

effective, this burn must be extensive enough to destroy mummy berries within the leaf litter. A higher incidence of blight can be expected in fields which are double-cropped, since most of the mummy berries germinate in the year after they are formed. Blight is often more severe in wet fields or fields with frost pockets. Long term management strategies such as improving drainage or removing trees to permit better cold air drainage can help control blight.

For a list of products registered for the control of Monilinia blight, consult the Wild Blueberry Pest Control Selection Guide. (<http://www.gnb.ca/0171/10/diseases.pdf>)

To view additional images of Monilinia Blight go to our Integrated Pest Management Images. (<http://daamaaextweb.gnb.ca/010-002/Default.aspx?Culture=en-CA>)