

37. Monilinia Blight

Latin name: *Monilinia vaccinii-corymbosi* (Reade) Honey

French name: La pourriture sclérotique

Monilinia blight, also known as mummy berry, often occurs in poorly drained parts of blueberry fields, especially in years when wet weather favours its development. At the end of spring it affects the leaves and flowers of young shoots. Crop losses can range from slight to severe from one year to the next, one field to the next and even within the same field. Between infestations, often several years go by.

DESCRIPTION

Symptoms

In the spring, infected leaves turn brown starting from the base of the leaf (Figure 1), eventually becoming entirely dark brown and collapsing. These brown leaves wither but remain attached to the plant (Figure 2). Though hard to make out with the naked eye, the fungus appears as a low, dense down, beige or whitish in colour, along blossom stems and the midrib of leaves.

Usually, the disease manifests as sharply delimited zones of infestation in the fields. It may attack individual fruit-bearing stems or entire plants. As the season progresses, the damage is masked by the green growth from healthy buds. The destruction of some of the flowers can reduce yield, but the plants do not suffer permanent damage. Not all infected flowers will wither and die. Some produce normal-looking fruit that subsequently shrivels and takes on a salmon colour, eventually dropping to the ground before harvest. These are called “mummy berries” (Figure 2), and in severely infested areas can represent 2 to 3% in lost production.

Note that other types of damage, including frost, herbicides and Botrytis blight, can resemble Monilinia blight.



Figure 1. Leaves infected from the point of attachment

Source: Kelvin Lynch, NBDAAF



Figure 2. Withered leaves still attached to the plant, and mummified berries

Source: Kelvin Lynch, NBDAAF

Life cycle

The fungus produces primary spores during a short period in May, from mummified berries left on the ground after previous seasons. Flowers and leaves can become infected at any time from budbreak to the start of the blooming period (Figure 3). For an infection to occur, rain or constant humidity or fog are necessary. In mild weather the period of risk is shorter, while cold weather and frost stress increase the susceptibility of plant tissues to infection. The perfect conditions for this disease to develop are a frost followed by four days of warm, wet weather (Table 1).



Figure 3. Period of susceptibility
Source: Kelvin Lynch, NBDAAF

Table 1. Severity of infection in different weather conditions

Severity of infection in different weather conditions	AVERAGE TEMPERATURE DURING INFECTION PERIOD				
	2 °C	6 °C	10 °C	14 °C	18 °C
2 hours	None	None	None	None	None
4 hours	None	None	None	Slight	AVERAGE
6 hours	None	Slight	Slight	SEVERE	SEVERE
8 hours	None	AVERAGE	SEVERE	SEVERE	SEVERE
10 hours	AVERAGE	SEVERE	SEVERE	SEVERE	SEVERE
15 hours	AVERAGE	SEVERE	SEVERE	SEVERE	SEVERE
24 hours	SEVERE	SEVERE	SEVERE	SEVERE	SEVERE

Source: MAPAQ, 2000

Depending on the weather, symptoms appear around 10 to 20 days after infection. By the time the disease is visible in the fields, most of the primary spores have been released from the mummified berries and the plants' susceptible period is almost over. Secondary spores produced on infected tissues will go on to infect other young shoots, whose flowers will give rise to mummy berries. The mummy berries (i.e. the fungus inside them) will mostly germinate the following year, but some don't germinate until two or even three years later. Wind-borne spores from mummy berries in one field can infect blueberry plants in other fields nearby.

PREVENTION

Spreading a mulch can prevent the propagation of *Monilinia* blight by covering over the mummified berries.

Unlike mowing, burning destroys mummy berries and reduces the amount of inoculum present. In fields where pruning is normally done using a flail mower, and where *Monilinia* blight is a problem, burning will bring the disease under control but cannot eliminate it. To be effective, burning must be sufficiently intense to destroy the mummified berries. The disease tends to be worse in the second crop year because of mummy berries germinating from the previous year.

Outbreaks of *Monilinia* blight are more frequent and severe on wet terrain and in frost pockets. A management strategy of improving drainage and creating air outlets can help prevent this disease.

CONTROL

Predicting the potential for infection is essentially a matter of observing and estimating crop losses in previous years. To evaluate those levels and whether intervention with fungicides is warranted, you should seek the help of an agricultural consultant. The decision as to whether to take action will depend on the history of the field, the cost of preventive measures, the current price for blueberries, and potential losses due to the disease.

COMPLEMENTARY LEAFLETS

15. *Integrated Pest Management in Wild Blueberry Production*

17. *Pruning as a Method of Protection against Blueberry Pests*

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www.gnb.ca/0171/10/C310-E.pdf (Page consulted on September 15, 2010).



OTHER REFERENCES

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PROJECT COORDINATION

Sophie Gagnon, Agronomist, Project Management Coordinator, Agrinova, Alma

ADAPTATION

Sophie Gagnon, Agronomist, Project Management Coordinator, Agrinova, Alma

REVISION

Gaétan Chiasson, Agronomist, Development Officer, New Brunswick Department of Agriculture, Aquaculture and Fisheries, Bathurst

Gérard Gilbert, Agronomist-Phytopathologist, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, Québec

Laurier Tremblay, Agronomist, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, Bergeronnes

PUBLISHING

Chantale Ferland, M.Sc., Publishing Project Officer, CRAAQ, Québec

Lyne Lauzon, Publications Coordinator, CRAAQ, Québec

TRANSLATION

Rod Willmot, M.A.

LAYOUT AND GRAPHIC DESIGN

Sylvie Robitaille, Computer Graphics Technician, CRAAQ, Québec

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