

## **Timing of Fungicides for Common Diseases of Blueberry**

P.D. Hildebrand and W.E. Renderos (Agriculture and Agri-Food Canada)  
and R.W. Delbridge (Delbridge Disease Management)

### **General Considerations**

- The yield potential of individual fields should be assessed before an investment in fungicide is made.
- Individual diseases should be monitored:
  - disease loss potential should be assessed. Some diseases pose a greater threat than others, i.e. *Monilinia*, *Botrytis* and *Valdensinia*.
  - past field history can give a good indication of current season disease threat, i.e. *Monilinia*, *Botrytis*, *Valdensinia* and *Septoria*.
  - canopy height and density can be a significant factor for some diseases, i.e. *Botrytis* and *Valdensinia*.
- Monitor weather forecasts carefully.
- Fungicide selection and cost.
- Thorough burn pruning can reduce diseases such as *Monilinia* blight, *Valdensinia* leaf spot and *Septoria* leaf spot.

### **Monilinia blight**

- If good control has been achieved in the last few years, then risk is reduced, but this is difficult to quantify.
- Monitor fields for bud development and listen to the Blight Line. Determine if a field has had a long enough wet period for infection to occur once the buds are at the susceptible stage (40-50% F2 or above). Spray within 72 h from the start of the wet period. (This is the only blueberry disease where we can wait to spray until after infection has occurred, provided Topas, Mission or Funginex are used)
- However, if Environment Canada is predicting several days of wet weather and spraying operations will be hampered, then spray before the wet weather begins.
- In some years, the first application will control most of the infections. However, this is dependent on when the first application is made in relation to how far the buds have advanced.
- Refer to the temperature and wetness graph in the *Monilinia* factsheet in the Blueberry Dispatch Newsletter.
- Topas or Mission are the least expensive of several available products and are very effective.

### **Botrytis blight**

- Past history of the disease in a given field or region must be considered.
- Monitor fields; once 50% of the flowers are open, the fields become very susceptible.
- Disease risk increases quickly when multiple wet periods occur after this stage of crop development.
- Disease risk becomes less once flowers are pollinated and corollas drop.
- The disease may persist well beyond the bloom period in fields with tall dense canopies. Damage to leaves and stems occurs deep in the canopy which impacts yield. The disease is impossible to control in these types of canopies.
- The need to spray will depend on past history and Environment Canada's long range forecast for temperature and wetness (this can be difficult to predict accurately).

- Refer to the *Botrytis* infection severity chart in the *Botrytis* factsheet in the Dispatch Newsletter.
- One or two applications of captan control this disease. Possibly more effective, but also more costly options include Pristine, Lance, Elevate and Switch.
- When Pristine is applied at early bloom (approximately 1-10%) for *Septoria* control, an added benefit of *Botrytis* and *Valdensinia* control may also occur.

### **Septoria leaf spot and stem canker (fruiting fields)**

- *Septoria* may cause significant loss in severely infected fruiting fields in some years.
- The presence of large numbers of stem lesions is an indicator of potential threat of disease.
- Pristine effectively controls *Septoria* when applied at 1-10% bloom. An added benefit of *Botrytis* and *Valdensinia* control may also occur.
- Bravo and Pristine are registered as a June application in sprout fields, but this does not appear to be cost effective.

### **Valdensinia leaf spot**

- Past history of this disease in both sprout and crop fields is very important to consider.
- This disease can begin any time in June and can continue into August, but most of the damage occurs in June and July.
- Severity is based on the number of infection periods that occur throughout the season.
- Listen to the Blight Line for reports on first occurrence of this disease and monitor fields for symptoms (look deep in the canopy). *Valdensinia* can be confused with another unidentified, but less important disease (“False *Valdensinia*”) that occurs later in July and August. It is important to have this disease correctly identified.
- Remember not to spread the disease on equipment. See the *Valdensinia* leaf spot factsheet at <http://www.agrapoint.ca/eng/>
- Yields can be substantially reduced by this disease. When considering control, evaluate yield potential of the field and past disease severity. If the disease is localized in a few areas of the field, spot spraying may be cost effective. Burn pruning affected areas may also be effective, but the burn must be thorough enough to consume all of the leaf litter.
- Pristine is effective, but costly. Bravo is less effective.
- Pristine should provide 14 days of protection. It is important to direct the spray deep into the canopy as much as possible since this is where the disease first begins.
- The number of applications will depend on the frequency of wet weather and disease severity.

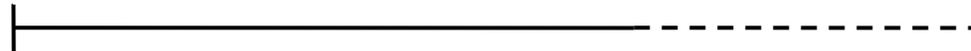
### **Leaf rust**

- This disease is of importance in sprout fields and occasionally in late harvested fruiting fields.
- Disease level varies from year to year so the effect on yield is also variable.
- The disease begins in late July and intensifies during August and September.
- One application of Bravo is effective for this disease, but the cost/benefit varies from field to field and year to year.
- There are no available registered fungicides for leaf rust in the fruiting year.

## Periods of infection risk for important diseases of lowbush blueberry

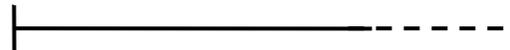
Periods of high infection risk shift with geographic region and are highly dependent on wet weather. The solid lines indicate periods of high infection risk and the dashed lines indicate periods of reduced risk.

**Main period of *Valdensinia* infection  
risk lasts  $\approx$  4-6 weeks (fruiting and sprout fields)**



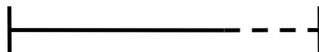
**The time of first *Valdensinia* infections can be variable, but usually occurs after the first week of June**

**Main period of *Septoria* infection  
risk lasts  $\approx$  3-4 weeks (fruiting fields)**



**Beginning of *Septoria* infection risk  
coincides with 1-10% open flowers**

**Period of primary *Monilinia*  
infection risk lasts  $\approx$  17 days  
(fruiting fields)**



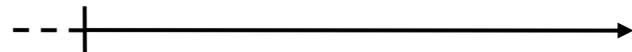
**Critical risk begins  
when 40-50% of buds  
are at the F2 stage**

**Period of *Botrytis* infection risk lasts  $\approx$  21 days (fruiting fields)** *Botrytis* may continue in tall, dense canopies



**Critical period to apply *Botrytis*  
fungicides begins when about 50% of  
the flowers are open**

**Period of leaf rust infection risk is long  
continuing into September and October  
(sprout fields)**



**Critical period to apply fungicide  
is in late July or early August**

