Pest Monitoring Requirements: IPM and Pollinator Practice for Wild Blueberry Growers (595)

Adapted from the University of Maine Extension's Fact Sheet 209 – Insect Monitoring Guide for Wild Blueberries

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Purpose: To describe monitoring action thresholds for implementing Wild Blueberry Integrated Pest Management for Pollinators (595). These monitoring action thresholds are a requirement for implementing the conservation practice.

Crop Pests: Monitoring action thresholds apply to blueberry spanworm, blueberry flea beetle, blueberry maggot fly, and spotted-wing drosophila. There are no additional pest monitoring action thresholds for other crop pests. Once monitoring action thresholds are met, pesticides can be used for treating the target pest species. For pesticide recommendations, contact UMaine Cooperative Extension or visit the following website to download or view pesticide charts: https://extension.umaine.edu/blueberries/wild-blueberry-pesticide-charts/. If conservation measure three is being applied (see Implementation Requirement, page 6), then only the pesticides listed on the UMaine pesticide charts may be used.

Blueberry Spanworm

Figure 1: Young larvae are about 1/8" long and dark gray to black with a series of white bands circling body. Fully grown larvae are ¾" long and yellowish-orange with rows of black spots. Photo taken with permission from UMaine Fact Sheet No. 197.

Begin monitoring for spanworm larvae in early spring as the buds break and plants emerge. In the crop year, monitoring can be terminated once flowers develop. Use a 12-inch diameter sweep net to complete spanworm monitoring. Sweep the net across the body when walking through the field. Take one sweep for every step. Make sure that each sweep goes through the foliage. After taking ten sweeps (one sample) empty the contents into a container and identify any larvae. Repeat this process 10 times in fields less than 10 acres in size, 20 in fields 10-50 acres in size, and 30 in fields larger than 50 acres. Write down the results.

- *In crop year fields*: spraying with an insecticide may occur when insect counts on fruit-bearing plants average over 10 spanworm larvae per sample.
- *In prune year fields*: spraying with an insecticide may occur when an average of 3 or more spanworm larvae are found per sample. Repeat treatment, if necessary.

See University of Maine (UMaine) Extension Fact Sheet No. 197, Blueberry Spanworm for additional information on blueberry spanworm.

https://extension.umaine.edu/blueberries/factsheets/insects/197-blueberry-spanworm/

Blueberry Flea Beetle

Examine fields in early spring for larvae and from mid-June to early July for foliar feeding by adults. To monitor for blueberry flea beetle, follow the same methods described above for blueberry spanworm. Spraying with an insecticide may occur when an average of 50 blueberry flea beetles or more are found per 10 samples.

Blueberry Maggot Fly

Baited yellow sticky traps (*e.g.,* Pherocon AM Baited Trap), should be suspended 4 to 6 inches above the crop canopy (see left photo in Figure 2). Traps should be placed in the field by June 15th, or at the predicted emergence date determined by the UMaine Extension's degree day model (see Fact Sheet 201). Traps should be placed about 25 feet from the field perimeter, near weedy areas, and at least one trap in the field interior. The total number of traps is based on the recommendations in Table 1.

Traps should be replaced every 2 to 3 weeks, except during very hot weather or after heavy rains, when traps should be replaced more frequently.

Placed traps should be checked every 3 or 4 days. After each check, remove blueberry maggot flies from the trap and record the number of maggot flies found. Use the following thresholds to justify spray application.

- If six or more blueberry maggot flies (BMFs) per trap are found in a field during a single day of trap monitoring, pesticides can be used.
- When 10 or more BMFs per trap have been found in a field (cumulative of all trap monitoring for the season), pesticides can be used.

Additional information can be found here:
https://extension.umaine.edu/blueberries/factsheets/insects/201-%20monitoring-for-the-blueberry-maggot/

Figure 2: Yellow sticky trap deployed over canopy (left). Adult BMF (right). Photos from UMaine Fact Sheet 201.

Table 1. Minimum number of traps required for monitoring SWD and BMF.

Acres	Number of SWD traps	Number of BMF traps
1 to 10	3	3
11 to 30	6	6
31 to 50	9	9
51 to 70	12	12
71 to 90	15	15

Spotted-Wing Drosophila

Follow the instructions provided in the UMaine Extension video to create cup traps -

https://extension.umaine.edu/blueberries/factsheets/insects/spotted-wing-drosophila-traps/

Monitoring traps for Spotted-Wing Drosophila (SWD) should be placed in sets of 3 traps, the total number of traps is based on the recommendations in Table 1. Traps need to be a minimum of 15 feet apart. Traps should be visited at least once per week, but preferably twice per week. During each visit, fly samples should be collected from the traps, and the traps should be emptied and refilled with fresh bait. Hang traps on stakes 4 to 6 feet high. Keep records from each monitoring visit of the number of male flies captured. Once the total capture (across all traps and all visits) meets or exceeds an average of 0.5 male flies per trap (or 1 male fly for every 2 traps), pesticides can be used. Using this threshold, the risk of fruit infestation 7 days later is 0.5%. This is a very conservative threshold.

Figure 3: Spotted-wing drosophila cup traps placed on stake for monitoring. Photos from UMaine SWD Fact Sheet.