Flower Thrips in Blackberries in Florida[1]

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Blackberries in Florida

Blackberry production is a small but growing industry in the state of Florida (Figure 1). In 2024, 702 acres of blackberries and dewberries were being grown in Florida (USDA 2014). Their numerous health benefits make them a good choice for Florida growers who want to diversify from traditional crops such as strawberries. The relatively short shelf life of blackberries makes them a suitable crop for "U-pick" and fresh-market operations in densely populated areas. In Florida, blackberries are typically harvested in May and June but little data is available on yield (Andersen 2020).

Figure 1. A blackberry field in Florida.
Credits: O. E. Liburd, UF/IFAS

Blackberries grow best in deep, well-drained soils with a pH between 5.5 and 6.5. The ideal planting time is December through February, and proper irrigation and weed control are important during the first year. Blackberries are perennial deciduous bushes that require a certain number of chill hours to begin flowering (Figure 2). This limits production to more northern areas of the state of Florida. Breeders at the University of Arkansas continue to develop many cultivars that can be grown in north Florida (Andersen 2020). Examples include 'Apache', 'Arapaho', 'Chickasaw', 'Choctaw', 'Kiowa', 'Natchez', 'Navaho', 'Ouachita', and 'Shawnee'. Some cultivars have thorns, while others are thorn-less; the presumption is that thorn-less varieties are easier to manage (weeding, pruning, and harvesting). Similarly, other cultivars have been bred to grow upright, while others require a trellis system (Figure 1). For detailed information on blackberry production in Florida see Andersen (2020).

Several potential pest insects and mites have been found on blackberries in Florida (Andersen 2020). The two most likely to become key pests are stink bugs and flower thrips (O. E. Liburd personal communication). Stink bugs feed on blackberry fruits (Brennan et al. 2013) and have the potential to directly reduce yields if numbers are high enough. The purpose of this document is to provide information on the biology and management of flower thrips in blackberries to growers, extension agents, and anyone else who is interested.

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Figure 2. Blackberry a) flowers and b) fruit.
Credits: S. A. Brennan, UF/IFAS

Flower Thrips

In general, flower thrips are very small insects (~1 mm (~1/32 in) in length) with yellowish to orange coloration (Figure 3). They can be distinguished from other insect orders by their fringed wings and rasping-sucking mouthparts. The most abundant thrips species found in blackberries in north-central Florida is the Florida flower thrips, Frankliniella bispinosa (Morgan) (Figure 3). In fact, 99.8 percent of the thrips sampled from plantings were identified as *F. bispinosa* (Rhodes and Liburd 2017). Flower thrips damage the flowers by feeding on the ovaries, styles, petals, and developing fruit, which can negatively affect berry production. The thrips species Microcephalothrips abdominalis (Crawford) and *Thrips hawaiiensis* (Morgan) also have been collected from blackberry flowers in Florida. *Microcephalothrips abdominalis* is known to reproduce in flowers of host plants but is not considered a major pest of small fruits. Alternatively, *T. hawaiiensis* is considered a pest of other fruit crops, including bananas and citrus. The predatory thrips *Haplothrips graminis* Hood (Thysanoptera: Phlaeothripidae) also have been collected in low numbers in Florida and tend to feed on arthropod eggs and other small insects.


Figure 3. A female *Frankliniella bispinosa*.
Credits: Lyle Buss, UF/IFAS

VARIETAL EFFECTS

In north-central Florida, blackberry varieties flower at different times of the year and the duration of flowering depends on the variety. For example, 'Kiowa', 'Choctaw', and 'Chickasaw' begin flowering one to two weeks before 'Natchez' and two to three weeks before 'Ouachita' and 'Arapaho'. Thrips populations tend to build up to higher numbers in varieties that flower earlier (Rhodes and Liburd 2017).

Monitoring

White sticky traps can be used to monitor flower thrips populations in blackberries (Figure 4). Although blue sticky traps are just as attractive to *F. bispinosa* as are white traps, it is difficult to see the thrips against the blue background (Finn 2003). Blue traps, therefore, are not recommended. Rodriguez-Saõna et al. (2010) found that sticky trap data were useful for predicting thrips flight activity and monitoring for the timing of insecticide applications. Traps should be placed as soon as the earliest varieties begin to flower and checked at least once per week because thrips populations can build up very rapidly.


Figure 4. White sticky trap on blackberry bush.
Credits: S. A. Brennan, UF/IFAS

Management

Minute pirate bugs (*Orius* spp.) may help to reduce thrips numbers in blackberries (Figure 5). Both adults and nymphs can be found in blackberry flowers. These insects are commercially available, but more research needs to be conducted to determine if releasing *Orius* spp. into blackberries will improve thrips control.

Figure 5. *Orius* spp. adult.
Credits: E. M. Rhodes, UF/IFAS

Several insecticides are registered for use on blackberries against thrips. These include reduced-risk insecticides that should have a minimal impact on populations of *Orius* spp. and other natural enemies. Insecticides should be applied early in the morning or in the evening to minimize impacts on pollinating insects. Remember to read labels carefully, as it is a federal violation to use a pesticide in a manner not specified on the label.

References

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