Managing Leaf Rust in the Evergreen Production System

Under the evergreen production system for southern highbush blueberry (SHB), which is used extensively in the south-central and central regions of Florida, blueberry plants do not go dormant and are harvested early in the season. One of the primary management necessities in the evergreen system is to keep the foliage healthy and intact through the harvest season. A significant challenge to accomplishing this can be fungal leaf disease, in particular rust, which must be managed from late fall through harvest.

Rust symptoms initially appear as small angular yellow spots which turn red to black on the upper surfaces of leaves (Figure 1). Multiple rust lesions can occur on the same leaf, turning the leaves yellow or red over time before causing defoliation. The most characteristic symptom of rust is clusters of yellow- or rust-colored spores produced on the underside of the leaf, opposite the lesions on the upper leaf surface (Figure 2), during extended periods of humid wet weather.

Figure 1. Rust symptoms on upper side of leaf
Credits: P. Harmon, UF/IFAS

Figure 2. Rust symptoms on underside of leaf
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Plants with rust can show premature defoliation, decreased floral bud differentiation, and reduced yield. Different levels of susceptibility to this disease can be found in SHB; for example, certain cultivars, such as 'Optimus', are known to be susceptible.

In the central and southern regions of the state where the evergreen system is used, rust is usually less of a problem during summer, becoming more of an issue around the end of October. Disease pressure persists through harvest and summer postharvest pruning. The key to managing rust in this system is prevention. Once the disease becomes severe, options become fewer, less effective, and more costly. Systemic fungicides move into infected leaves and can stop rust development early in the infection cycle. However, most products will only reduce or delay the amount of sporulation once symptoms are present. Fungicides do a better job protecting leaves against new infections by maintaining a protective residue on the leaves.

In the evergreen system, Chlorothalonil (sold as Bravo™ and others) applications for rust management can be made starting late fall, before bloom. Chlorothalonil is a contact fungicide that cannot be used after bloom, and that some growers have concern about causing leaf burn in the heat of summer. Chlorothalonil has efficacy for several diseases and applications made when disease pressure is generally low but starting to increase makes sense. As the season progresses, growers should scout for rust by walking the rows, turning over leaves with spots, and looking for the orange spore clusters. As rust starts to increase on the interior lower canopy leaves, consider using Proline™ (prothioconazole), which has stood out in some published research as an excellent choice among DMI products for rust. Other products with reported excellent effectiveness include Qulit Xcel™ (azoxystrobin and propiconazole) and Propulse™ (fluopyram and prothioconazole). DMI's with longer preharvest intervals (PHI) can also be considered if rust increases before bloom (e.g., Indar™, Tilt™). They will have some efficacy, and this will leave Quash™ and Proline™ (with a 7 day PHI) as options for any flare-ups closer to harvest. Abound™ and Pristine™ both also have rust efficacy and make for good rotation partners with one of the DMI products. If applied at or after bloom, consider tank mixing a captan product with Abound™ or Pristine™, because of the widespread anthracnose ripe rot

resistance to these products. One or more of these options employed in the late fall to pre-bloom period should do a good job of keeping rust severity low through harvest.

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