



Lowbush Blueberry Fact Sheet

The Blueberry Stem Gall

Introduction

The Blueberry Stem Gall is caused by a small chalcid wasp, *Hemadas nubilipennis*, which belongs to the family Pteromalidae. In recent years, these galls have become a concern because they occasionally contaminate the finished blueberry product. The following fact sheet gives a description and life history of this insect.



Fig.1 Gall on blueberry caused by *Hemadas nubilipennis*.

Description

Blueberry stem galls are small kidney shaped to irregular spherical growths on the stems of blueberry plants (Fig 1). They range in size from 5 to 25 mm. The adult wasps are tiny, being only 2.0 - 2.5 mm in length (Fig.2). The head thorax and abdomen are black. The legs and scape of the antenna are light amber. The antennal club is black. The wings are infuscated with black. The larvae are creamy white legless grubs.

Biology

The adults are almost entirely females, and emerge from the gall in late May to early June, before the buds break. They seek out a developing blueberry shoot and lay several eggs in the stem. The majority of galls (up to 70%) are formed on stems within the leaf litter. The remainder are on stems above the surface. After laying her eggs the female then climbs to the tip of the shoot and stabs the tissue at the tip of the stem several times causing it severe damage. Egg laying





damages the plant cells near the eggs, which causes abnormal tissue growth. A chamber is formed around each egg. The eggs hatch in 12 - 14 days, and the larvae feed on tissue of the wall of the chamber (Fig.3). During larval feeding the plant cells divide and multiply into large masses of tissue which eventually form the gall. On average each gall will contain about 12 larvae. The gall continues to grow throughout the summer and reaches its maximum size by late August. The outer covering is at first soft, but becomes hard and woody by maturity. The larvae spend the winter in the gall, and pupate within the gall, in the spring.

Damage

There are two concerns about the damage caused by the stem gall wasp. The first is the effect of the gall on the blueberry plant itself. The result of the female wasp injuring the growing tip, and the utilization of plant nutrients in forming the gall, and producing nutrients for the larvae, is that no fruit buds are formed on the stem. If this occurs during the vegetative cycle of production there may be a reduction in the yield the following year. A build up of gall populations over many cropping cycles may have a more serious impact. However, the effect of blueberry stem galls on the yield has not been studied.

The second concern is that galls, especially those higher on the stem, may break off the stem during harvesting. These galls can then pass through the processing line and end up as foreign objects in the finished product.

Control

There are a number of species of wasps, including parasites, that utilizes the galls formed by the blueberry stem gall wasp. The relationship of these and their effect on blueberry stem gall wasp populations is not known. Although high parasitism levels (more than 50% of galls were parasitized in one study) are possible.

There are no chemical controls registered for this insect. Burning as a pruning method may have some effect. This has not been clearly established at this time.

References

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Fig.2 - Adult blueberry stem gall wasp.



Fig.3 - Stem gall cut open to show larval cells.





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