



## The Beech Blight Aphid (*Grylloprociphilus imbricator* (Fitch))

A somewhat uncommon pest for Massachusetts has become quite common this fall. It is a woolly aphid species known as the Beech Blight Aphid (*Grylloprociphilus imbricator* (Fitch)). Despite its natural range being from Maine to Florida, it is seldom seen here. When it does appear, however, it is usually in dramatic fashion. The aphid itself is a light bluish color but it amasses by the thousands on the twigs, small branches, and the undersides of foliage primarily of the American beech, *Fagus grandifolia*. Populations can become quite obvious as early as July but by September and October, they can be spectacular. Infested beech trees can appear to have their smaller branches and twigs covered with snow. In this regard, they look remarkably similar to colonies of the woolly alder aphid, which, as the name implies, is a pest of certain alders.

In addition to being occasionally abundant and showy, this species is capable of producing vast amounts of honeydew. This aphid excrement is plant sap that has gone through the insect's body where certain amino acids and other nutrients having been extracted. The rest is then expelled as waste onto the branches, foliage, understory plants, and the ground below. Certain fungi known as the sooty molds then colonize this honeydew and turn the substrate black. Oftentimes, given large populations of aphids, this sooty mold can be very thick and almost tar-like. Sooty mold fungi do not penetrate the epidermis of plants; they only derive nutrient value from the sugars in the honeydew that is on the surface of the plants. However, because of the copious amounts of honeydew produced by this aphid, the production of sooty mold can become severe and spectacular in its own right.

Another characteristic of this aphid is that it will raise the posterior end of its body and sway when it is disturbed. This action produces a dance-like effect that occurs throughout the colony. This phenomenon has led some to refer to this species as the Boogie-Woogie Aphid. It is a unique experience to see hundreds, if not thousands, of these perform this defensive, yet highly entertaining, behavior.

There is a lack of consensus as to the overall importance of this insect and its short or long-term effects on the health of the host plant. It has been speculated that heavy populations may kill smaller limbs of beech trees. Others suggest that smaller and/or distorted foliage may result from the feeding pressure imposed by this insect. Ultimately, there is no indication that this aphid causes any real serious harm beyond that of the vast amounts of aesthetically displeasing sooty mold. However, many of our trees have been experiencing drought stress and this may act as a compounding factor when coupled with exceedingly large populations of this aphid. Many different insects that have a piercing-sucking mouth type commonly attack American beech, which is a thin-barked tree. Other problem insects, such as oystershell scale and/or the beech tree scale may also be present, contributing more stress than individual trees may be able to withstand.

Effective treatments, if deemed necessary, include certain pyrethroid insecticides that have a quick "knockdown" effect, horticultural oil sprays (weather permitting), and insecticidal soap. Imidacloprid\*, utilized as a systemic compound, is generally very effective against aphid species but now is not the time to administer this compound. Imidacloprid\* requires many weeks from the time of application to the point where it is up into the stems and foliage where it can be ingested by feeding aphids. If chosen as a means for management next year, this product can be soil applied next spring once the soil temperatures are at or above 50 degrees F. and the soil is not water-saturated from spring rains and/or snow-melt.

It is known that several natural controls, in the form of parasites, do exist and will ultimately reduce population sizes. In general, Beech Blight Aphid (BBA) populations remain high for 2-3 years. By looking closely within the tightly packed colonies of this aphid, one may actually see the limited presence of these parasites now. Research has shown, however, that BBA at a certain stage of development will actually attack and attempt to kill beneficial insects within their colony. Eventually, though, the natural controls will be effective in greatly reducing the population numbers of this aphid species.

Ants are often associated with densely packed aphid colonies such as these. They are interested in obtaining the sugar-rich honeydew as a food source. In other aphid colonies, ants will actually protect aphids by working to drive away parasites and predators that want to feed on or parasitize the aphids. In the case of the BBA however, ants are usually not found intermingling within colonies of these densely packed aphids. The ants are able to harvest as much honeydew from the ground or other substrates due to the copious nature of BBA honeydew production.

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