

## Elm Zigzag Sawfly

Isabel Marez & Jeremy Slone, PhD, Entomologist

Elm zigzag sawfly (EZS), *Aproceros leucopoda*, is an invasive insect pest from East Asia that exclusively feeds on elms (*Ulmus*). While first detected in North America (Quebec, Canada) in 2020, EZS has since been reported in numerous states in the northeastern and mid-Atlantic areas of the U.S. Small EZS populations are generally not a significant concern, however populations can build throughout a growing season and large populations can rapidly defoliate and harm an otherwise healthy elm.

### Description

Sawflies are small insects that are closely related to wasps, bees, and ants. While wasp-like in appearance as adults, these pests do not sting. Adults do not contribute to defoliation but instead feed on pollen or nectar. Sawfly larvae resemble caterpillars, but when disturbed, they often maneuver into an upright “S” position (Figure 1). This behavior is unique and aids in sawfly identification.

“Zigzag” in the common name refers to the unique feeding patterns on foliage caused by small larvae (Figure 2). As larvae grow larger, the pattern may become less distinct as entire leaves are consumed around the veins.

EZS only feed on elms, but all elm species appear to be suitable hosts. Many of the elm species remaining in North America are non-native or disease resistant hybrids following outbreaks of Dutch Elm disease in the last century.

### Life Cycle

Populations of EZS are entirely female, so all individuals have the capacity to produce viable, unfertilized eggs. Consequently, all offspring are

Figure 1: Young larva in defensive posture



Figure 2: Characteristic larval zigzag injury



clones of the female parent. Populations can build rapidly as no energy is spent on searching for mates and females can lay eggs in the absence of other sawflies in the area. This could allow EZS to readily establish as it spreads throughout an invaded range.

Adult females lay their eggs individually along leaf edges. Pale green larvae with black markings on the head and legs soon emerge and begin feeding. Within about a month, the pest will develop through six larval stages, pupate, and emerge as an adult. Short life cycles allow multiple generations to occur each year. Approximately one to two generations per year have been reported in North America, but between four to six are typical in Europe.

When ready to pupate, the mature larvae may disperse away from the tree and form a silken, net-like cocoon on nearby surfaces. Pupae overwinter in cocoons to emerge as adults the following spring. With increasing population size, accumulations of these cocoons on houses, decks, or other human made surfaces may become a significant nuisance (Figure 3).

**Figure 3: Pupal cases on an outdoor chair**



## Damage

Small infestations and young larvae are unlikely to cause significant harm, but as larvae grow or as the population size increases, entire leaves and trees can be defoliated. In some instances, dieback of individual branches may occur. This process can occur rapidly and elms growing closely together are at risk for outbreaks of this pest.

Partial to complete crown defoliation is common when populations are unmanaged. Single defoliation events will contribute to plant stress, but repeated instances can deplete energy reserves and may result in tree mortality. It remains unclear how damaging this pest will be in the U.S.

## Management

Effective therapeutic treatments are available to manage infestations. Both soil and topically applied options are available, and management approaches will depend on the site, host condition, and pest density. Preventive treatments are not warranted unless large populations were detected previously. Please contact your Bartlett Arborist Representative to learn about management strategies.



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