



OAK LEAF ITCH MITE

Pyemotes herfsi
Acari: Pyemotidae

The oak leaf itch mite, thought to have originated in Europe, has been recorded from Australia, India, Egypt, Chile and most recently, the United States. The first recognition of this mite in the U. S. occurred in Kansas in the autumn of 2004 where it was estimated to have affected around 19,000 people. Since then it has been reported from Illinois, Nebraska, Ohio, Oklahoma, Missouri, Tennessee, Texas and in 2007, Pennsylvania (Lancaster County).

This mite can produce a pruritic (itchy) rash that is often erythematous (a redness of the skin) and papular (with small, raised, pimple-like bumps). Although they have been reported to feed upon many different insects, it is when they have become very numerous, eliminating their current food source, that they will search for alternative hosts and inadvertently bite humans.

DESCRIPTION

Pyemotes herfsi, a close relative of the straw itch mite, *Pyemotes tritici*, is nearly invisible to the naked eye (0.2 mm in length). They are elongated, reddish tan in color and have a shiny exoskeleton. The four pairs of legs are situated two to the anterior portion of the mite and the other two pairs are located posteriorly. Females, full of offspring (Fig. 1), are relatively large because of an extended abdomen in which the offspring, which can number up to 250, grow to adulthood.

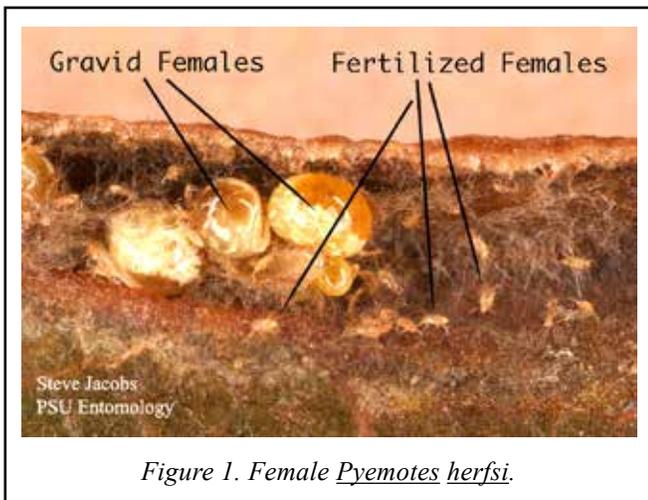


Figure 1. Female *Pyemotes herfsi*.



Figure 2. Marginal leaf roll galls.

LIFE HISTORY

The adult males emerge from the abdomen of their mother in advance of the females and mate with the adult females as they then emerge. The ratio of males to females is estimated to be 1:10 to 1:20. After mating, the males die, having never fed. The mated females then find a gall, and enter (probably) through the small openings at the ends of the folded margin of the gall (Fig. 2). Marginal leaf fold gall (a fly midge in the family Cecidomyiidae) typically attacks pin oaks but may also attack other of the ‘red oak’ group of trees. The leaf gall itch mite has also been reported from stored products and grains where they feed on various stored products pests, and from the galleries of wood boring beetles in the families Scolytidae and Anobiidae. They may overwinter in these protected areas or within the leaves or leaf litter on the ground.

The fertilized female mites attack the larvae of the gall, paralyzing it with venom that can paralyze a prey that is 166,000 times the mite’s size. The mite (a fertilized female) then feeds on the prey and remains attached until her offspring emerge. The generational time span is as little as 1 week, enabling the mites to become extremely numerous in a short period of time. Leaves sampled from infested pin oaks had up to 84% of the galls infested with mites.

MANAGEMENT

Most of the bites from *Pyemotes herfsi* tend to occur in the late summer into fall when the mite has built up large populations. Studies have shown that the mites can fall from trees in numbers of up to 370,000 per day. They are also easily carried by the wind and can potentially enter through window screens and thereby

bite people who do not often go outdoors. Most bites, however, occur to individuals gardening, especially those raking infested pin oak leaves in the fall.

Control of the oak leaf itch mite is not easily accomplished. Tree sprays do not penetrate the galls and therefore the mites are protected. There are mixed results from the use of DEET (a mosquito and tick repellent). People can best protect themselves by limiting their time from under infested trees and by immediately removing and laundering clothing and then showering.

Physicians suggest the use of calamine lotions and other itch creams to reduce the itching - that at times can be intense. Scratching of the bite locations is discouraged as it can result in secondary bacterial infections.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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