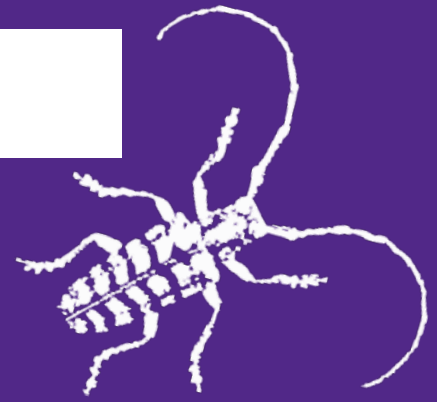


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## Nantucket Pine Tip Moth

The Nantucket pine tip moth, *Rhyacionia frustrana*, is an insect pest of Austrian and Scots pines in Christmas tree plantations, hedgerows, and landscapes. Nantucket pine tip moth is native to the eastern and southern portions of the USA. Adult moths are 1/4 inches (6.3 mm) long with the head and body covered with gray scales. The forewings are covered with brick-red to copper-colored patches that are separated by irregular bands of gray and white scales (Figure 1). Adult moths are active from early evening until dusk and can be found in the canopy of pine trees during the day. Adult females lay white to opaque eggs on shoots, needles, or buds (terminal growth) in spring. Young larvae (caterpillars) that hatch from eggs are 1/16 inches (1.6 mm) long, and cream-colored with a black head. Older or mature larvae are yellow to orange, and 3/8 inches (9.5 mm) in length.



Fig 1. Nantucket Pine Tip Moth Adult  
(Author--BugGuide.Net)

First instar larvae create mines in needles resulting in necrotic spotting. Later, the larvae exit the needles and then tunnel into and feed within the inner tissues of shoots, and buds (Figure 2), resulting in branches

or shoots turning brown and dying (Figure 3). Damage associated with Nantucket pine tip moth larvae results in deformed growth (stem crooking) (Figure 4) or a reduction in growth (bushy or stunted growth), which reduces the aesthetic quality and degrades the value of Christmas trees and pine trees in landscapes. Trees can be killed when exposed to repeated Nantucket pine tip moth larval infestations. An indication of a Nantucket pine tip moth infestation is the presence of silken tent-like webbing on shoot tips covered with masses of accumulated plant resin. In addition, fecal deposits may be present in the webbing on the outside of infested shoots. Larvae feed for up to four weeks before pupating. Nantucket pine tip moths overwinter as pupae that are dark-brown and 1/4 to 1/2 inches (6.3 to 12.7 mm) long. The pupae are located in cavities created by larvae within damaged shoots or terminals. Adults emerge (eclose) in about 10 days. There are three generations per year in Kansas.

Management of Nantucket pine tip moth involves implementing proper watering, fertilization, and mulching practices to keep pine trees healthy, which encourages the development of new growth. For minor infestations, you can hand prune infested shoots if branches are reachable. In addition, Christmas trees can be sheared to remove infested shoots.

It is important to monitor adult populations in April using pheromone traps containing a lure that attracts males. Pheromone traps should be placed among susceptible pine trees and inspected weekly. Seven to 10 days after males are captured in the pheromone traps (Figure 5), insecticide applications should be initiated. The benefit of monitoring is that it helps time applications of insecticides. Applications of contact pyrethroid-based insecticides (e.g. permethrin or lambda-cyhalothrin) or spinosad must be made weekly for each generation until adult males are not captured in pheromone traps. Insecticide sprays should target young larvae that feed on the outside of shoots. This increases exposure to spray residues before the larvae enter shoots.

Fig 2. Nantucket Pine Tip Moth Larva (Auth--Raymond Cloyd, KSU)



Fig 3. Brown Branch Tips and Shoots on Pine Tree (Auth--Raymond Cloyd, KSU)

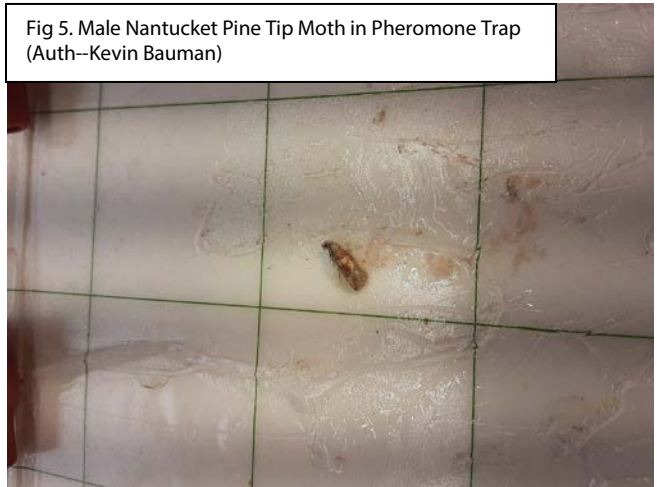


Fig 4. Deformed Growth or Stem Crooking On Pine Tree (Auth--Raymond Cloyd, KSU)



Consequently, thorough coverage of all plant parts is important to ensure effectiveness of applications. Once larvae are located inside plant tissues, insecticide applications will not be effective because larvae will not be exposed to insecticide residues.

Fig 5. Male Nantucket Pine Tip Moth in Pheromone Trap (Auth--Kevin Bauman)



Raymond Cloyd

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## Pine Tortoise Scale

The pine tortoise scale, *Toumeyella parvicornis*, is a major insect pest of pine trees grown as Christmas trees. Pine tortoise scale feeds on many different types of pines, including Scots, Austrian, and red. Females are 1/6 to 1/4 inches (4.2 to 6.3 mm) in diameter, hemispherical, and red to brown, with dark-brown to black markings (Figure 1). Pine tortoise scales overwinter as fertilized females on branches (Figure 2). Eggs are laid underneath the body of adult females. Females can produce up to 500 eggs within a generation. Eggs hatch and red nymphs (crawlers) are active from late spring through mid-summer (Figure 3). After finding suitable locations, nymphs will settle down and start feeding. Nymphs can spread to other pines via wind currents or by attaching to birds. Males, like most scale species, develop into winged individuals that fly and mate with females. Males do not feed and eventually die. There is typically one generation of pine tortoise scale per year in Kansas.



Fig 1. Pine Tortoise Scale on branch of pine tree (Auth--Raymond Cloyd, KSU)

Pine tortoise scale feeding results in yellowing of needles, stunted needle growth, and even death of pines under extensive populations. In general, young pine trees are more susceptible to pine tortoise scale than older (mature) trees. In addition, foliage closer to the ground tends to support higher populations of pine tortoise scale than foliage higher in the tree canopy. Pine tortoise scale produces copious amounts of honeydew, a clear sticky liquid that serves as a growing medium for black sooty mold. Entire pine trees may appear blackened from black sooty mold as a consequence of heavy infestations of pine tortoise scale.

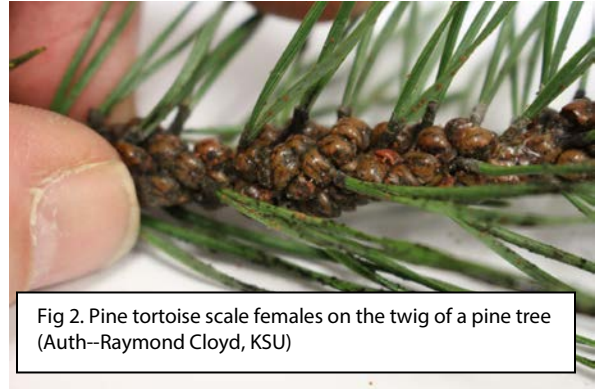


Fig 2. Pine tortoise scale females on the twig of a pine tree (Auth--Raymond Cloyd, KSU)



Fig 3. Pine tortoise scale crawlers emerging from eggs of females (Auth--Raymond Cloyd, KSU)

A forceful water spray applied twice per week will quickly dislodge/remove the nymphs and mature females from infested pine trees. Insecticides that can be used to suppress populations of pine tortoise scale nymphs include: acephate (Orthene), acetamiprid (TriStar), bifenthrin (Talstar), cyfluthrin (Tempo), dinotefuran (Safari), imidacloprid (Merit), insecticidal soap (potassium salts of fatty acids), and horticultural oils (petroleum, mineral or neem-based). These insecticides must be applied when nymphs are present to obtain maximum suppression of pine tortoise scale populations and subsequently alleviate future problems.

# Kansas Insect Newsletter

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## New Extension Publication

### **Insect and Mite Pests of Vegetable Gardens (MF3480 February 2020)**

This publication explains how to detect potential problems and how to identify pests in vegetable gardens based on the type of plant damage. A discussion of pest life cycles provides information that can be used to select appropriate plant protection strategies.

<https://bookstore.ksre.ksu.edu/Item.aspx?catId=524&pubId=22539>

Raymond Cloyd

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## ID to last week's bug

**Harlequin Bug** - This is an image of a Harlequin Bug. It feeds on cabbage, broccoli, cauliflower and kale. They injure the plants by sucking the plant juices causing white stipples on the leaves. In small plantings, one good way to control them may be by hand picking the adults and crushing the egg masses. If you want to find out more information about their life cycle or controls consult the Harlequin Bug publication at:

<https://bookstore.ksre.ksu.edu/pubs/MF3135.pdf>

Frannie Miller

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## Identify This Insect

"Each newsletter will feature an image with an identification related question (spiders, insects and maybe a few plants). The answer will be featured in the next newsletter, so check back to see if you were correct and learn something along the way."

Can you identify this spider and comment one fact you found about it?



## Alfalfa Weevil

Alfalfa weevils have been, and are still, very active throughout south central and north central Kansas during the last few days, even through the cold weather. However, just as the alfalfa plants have been variously affected by the recent cold weather, so have the alfalfa weevil larvae. The plants shown towards the middle of this picture (Fig. 1), had the upper part of the foliage killed by the recent cold temperatures, as were the larvae in that foliage (Fig. 2). The adjacent plants were not as seriously affected and thus, neither were the larvae in those plants.



Figure 1 Alfalfa freeze damage (picture by Cayden Wyckoff)



Figure 2 Dead and live AW larvae (KSU Extension Entomology)

Thus, each field needs to be monitored at least weekly, even those fields already treated. Nevertheless, please -- always remember, to follow all label directions for whatever product applied, especially as far as reentry, PHI, etc.

Jeff Whitworth

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## Pea Aphids/Cowpea Aphids

The recent cold weather also played havoc with these aphids (Fig. 3). However, many aphids, in untreated fields, were just "knocked off" or left the plants and are still alive, but in the leaf litter or residue under the foliage. There are also lady beetle larvae feeding on these aphids so, hopefully, these aphid populations won't come back as dense as they were previous to the cold weather.



Figure 3. Pea and Cowpea aphids (picture by Cayden Wyckoff)

# Kansas Insect Newsletter

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