Hawthorn Mealybug

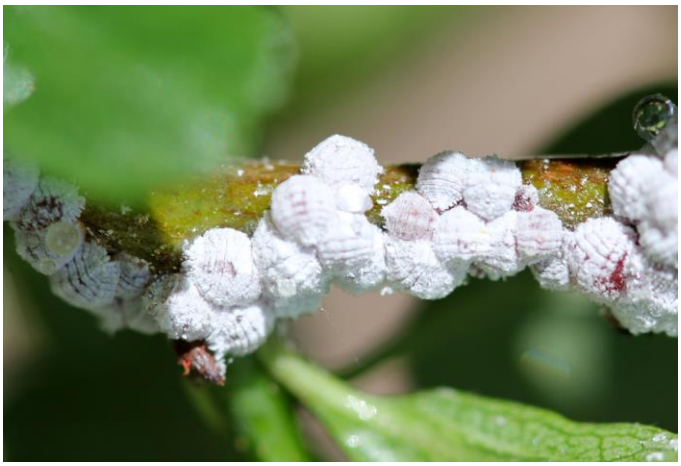

Figure 1. Hawthorn mealybug, mature females on twig.

Scientific Name: *Phenacoccus dearnessi* King

Order: Hemiptera (True Bugs, Aphids, Scale Insects, Hoppers, Cicadas, etc.)
Family: Pseudococcidae (Mealybugs)

Identification and Descriptive Features:
The hawthorn mealybug primarily feeds on the sap of twigs and small branches and heavy infestations weaken the plant and can cause twig dieback. The most common problems are associated with the large amounts of honeydew it excretes during feeding. Sooty mold and honeydew are often conspicuous and can greatly detract from plant appearance.

Later stages of the insects are conspicuous on the twigs, globular in form and covered with a red body that is finely covered with white wax. Small, but more elongate pale reddish-brown immature forms can be found on the bark of the trunk and larger branches during winter. Adult males are small, gnat-like winged insects present during the period of migration from branches to twigs in spring.

Figure 2. Overwintering stages of hawthorn mealybug on branch.

Distribution in Colorado:
Hawthorn mealybug is an introduced species with limited ability to spread on its own. It is found in some, but by no means all, landscape plantings of susceptible hawthorn. It has not been observed infesting native hawthorn stands.

The hawthorn mealybug spends the winter, usually as a late stage nymph, on the trunk and larger branches, packed within cracks on the bark. In spring, females move to twigs and continue to develop, becoming full grown in May or early June. Adult males remain on the trunk until they subsequently transform to a winged adult stage which mates with the females.

Figure 3 (top). Hawthorn mealybug male.
Figure 4 (bottom). Hawthorn mealybugs nymphs on foliage.

After mating, the females swell greatly with hundreds of maturing eggs. The eggs hatch within the mother and crawlers emerge, although dispersal of the young nymphs is suspended during wet, cool weather. Peak production of nymphs occurs during late May and June, although it may extend into late summer. Only a single generation is thought to be produced. However, a few egg producing females and egg hatch have been observed in late September suggesting either a small second generation or very extended period of egg production.

Newly emerged nymphs feed on leaves for a brief period, but later move to protected areas on twigs where they may remain through much of the summer. Populations often are again found in high numbers on leaves during late summer, where they often are found aggregating in leaf folds (domatia). Migration to overwintering areas on the trunk generally occurs during September and October.

Several rosaceous plants, including hawthorn, mountain-ash and serviceberry, are reported hosts but serious injury has only been associated with certain hawthorn cultivars. Among hawthorn cultivars a range in susceptibility to hawthorn mealybug has been observed. English hawthorn, Arnold hawthorn, and Thornless cockspur hawthorn appear particularly susceptible. Snowbird hawthorn, Russian hawthorn, and Macracantha hawthorn are less susceptible and Cordata Washington hawthorn appears resistant.

Management: Hawthorn mealybug has proven fairly difficult to control with foliar treatments, due to its waxy body covering and habit of living under loose bark and in other protected sites. Insect growth regulator insecticides, such as pyriproxifen (Distance) or buprofezin (Talus) should be effective for this species - and have selective effects that limit adverse impacts on other, desirable species (e.g., natural enemies, pollinators). Spring treatments applied to coincide with the return of overwintered stages to the twigs appear to be most effective and the addition of a horticultural oil is useful in providing penetration and coverage of the waxy body of these insects. Alternatively, applications made in late summer or early fall against nymphs on branches and limbs should provide some control. If dormant season applications of oils are made they should be applied to the trunks and under surfaces of branches where hawthorn

mealybug overwinters.

Systemic neonicotinoid insecticides applied as soil drenches (imidacloprid, thiamethoxam) or trunk drench (dinotefuran) sprays also can provide control. However, these types of insecticides are capable of moving into pollen and nectar, posing risks to visiting pollinators. Furthermore, hawthorn is one of the landscape plants that is particularly heavily used by honey bees in Colorado, further increasing risks. Therefore these insecticides should not be used until after bloom.