# GORSE COLONIAL HARD SHOOT MOTH

*Pempelia genistella*

## The history of gorse hard shoot moths in New Zealand

The gorse colonial hard shoot moth is native to western Europe and was first imported from Portugal by Landcare Research in 1995. The moth was not released in the field until 3 years later at a limited number of sites, due to difficulties experienced with mass-rearing this agent indoors. An additional shipment of moths was imported in 1999 to boost rearing stocks and allow widespread releases to begin. The moth has established at two sites in Canterbury so far. It has also been released as a biological control agent in Hawai'i but it is not thought to have established there yet.

Another hard shoot moth (*Scythris grandipennis*) was imported by the DSIR in 1992 and released at a field site near Burnham in 1994, but is not believed to have established. Because this moth is almost impossible to mass-rear and the colonial hard shoot moth appears to be a more promising biocontrol agent, no further effort has been made to establish it.

Gorse colonial hard shoot moth

Larvae inside a web

## How would I find gorse colonial hard shoot moths?

You are unlikely to see the moths as they are nocturnal and inactive during the day. However, if you look closely you may see the moths sitting upside down on or close to old larval webs around December/January. The moths are light brown in colour with darker black, brown and white markings on the wings and are about 10–15 mm long. The males have a small tuft at the base of the antennae, which gives rise to its common name in the UK, the gorse knothorn moth.

The females lay their tiny bright red eggs during the summer months. They prefer to lay them inside old webs, but you may also see the eggs on maturing green foliage. The eggs develop slowly for 1–2 months before the caterpillars hatch out. Several caterpillars aggregate to spin a coarse creamy-grey web with many tunnels, often at the base of current growth. The caterpillars use this communal web as a base from which to forage on surrounding foliage briefly in the autumn before hiding away inside the web during the winter. In the spring the

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caterpillars become active again and enlarge the web to incorporate young buds, shoots, and flowers. Late spring (just before new growth starts to appear) is the best time to look for these webs, when they will be at their largest (up to 20 cm across with usually 2–9 caterpillars inside, but sometimes as many as 30) and feeding damage will also be most obvious. If you look closely you may be able to see the green- and brown-striped caterpillars inside — they wriggle rapidly when disturbed.

The caterpillars feed and grow throughout the spring, reaching about 2.5 cm long before they finally pupate. You may see the dark reddish-brown pupae tucked away in the web. After about 2–3 weeks new adult moths emerge and begin to lay eggs. There is only one generation per year.

## How do gorse colonial hard shoot moths damage gorse?

The caterpillars are the damaging stage, and they feed on the spines, leaves, buds, shoots and flowers. This feeding causes the foliage around the web to brown off and die. When the caterpillars are small, the area damaged around the web is usually only a few centimetres in diameter; but when the caterpillars grow large in the spring, the area damaged becomes much larger, commonly 20–40 cm around the web.

## Will gorse colonial hard shoot moth attack other plants?

No, it is extremely unlikely that gorse colonial hard shoot moths will attack any plants other than gorse. Overseas it also attacks *Ulex minor*, which we do not have in New Zealand.


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