



Leek Moth 2010 Update

(*Acrolepiopsis assectella*)

Host Plants and History

Leek moth is a serious pest of members of the *Allium* family which includes onions, garlic, leeks, chives and shallots. There are about 600 cultivated and wild species of *Allium* in the United States as potential hosts.

The first confirmed sighting of leek moth in the continental United States was in Plattsburgh, NY during the summer of 2009. It is native to Europe and is now found in Russia, Japan, Algeria and in Ontario and Quebec, Canada. It was first found in Ontario in 1993.

In 2010 leek moth was found in the same sites as well as additional sites north of Plattsburgh but none to the south. It was confirmed for the first time in the Canton/Ogdensburg area of NY in 2010. There is speculation from growers there that it may have occurred in years prior, but was not confirmed.

In 2011 the same sites were infested again as well as a few new sites. It seems to be spreading slowly at this point.

Description

The adult moth (*figure 1*) is speckled brown, white and black with a distinctive white spot halfway down its outer pair of wings. It is about 3/8" long and is nocturnal so it will be rarely seen unless trapped.

The larva (*figure 2*) is a creamy yellow, slender caterpillar, less than a half inch long when fully grown. The pupa (*figure 3*) has a net-like structure over the cocoon and is attached to dying foliage or other nearby structures. The eggs are tiny and translucent. They are laid on the undersides of leaves and are very difficult to see.

Damage

The leek moth larva is a small, leaf-mining caterpillar. The first generation (May-June) feeds on the leaves. The worst damage is done by the second generation (July-August) as it continues to damage emerging leaves (*figure 4*) and moves towards the bulb. Feeding damage stunts plant growth, introduces rot and can compromise the storage life of onions and garlic.

Where to Look for Damage

On crops with hollow leaves (onions and chives), the larvae feed on the inside tissue, leaving characteristic 'windowpane' damage to the leaves (*figure 5*). Split open damaged leaves and look for frass (excrement) and debris (*figure 6*). Even after the larvae have left to pupate, the telltale debris remains visible.



Fig. 1 Adult leek moth



Fig. 2 Larva (caterpillar) on garlic leaf



Fig. 3 Pupa (cocoon)



Fig. 4 Characteristic damage to leeks

On garlic and leeks, larvae feed on the leaf surfaces and sometimes tunnel through the leaves. They are often found in the protection of the folded leaves on leeks and garlic. In June in hardneck garlic, damage will be the most noticeable on the garlic scapes (*figures 7,8*). On both crops check the newest leaves as well.



Fig. 5 'Windowpane' damage on onion leaves



Fig. 6 Onion leaf split open to reveal debris, frass and a larva



Fig. 7 Scape on a hardneck garlic



Fig. 8 Damage to garlic scape and leaf

Life Cycle

There are two to three generations a year in Ontario. It overwinters as an adult in plant debris. The female lays about 100 eggs, singly, at the base of the host plant. Eggs hatch in about a week. Larvae (caterpillars) grow in size over the next two weeks then pupate on dead leaves or nearby structures. Adults emerge about 10 days later.

Control

As of June 2011 there are no pesticides specifically labeled for use on leek moth in New York, but there is a 2 ee permit . Efficacy trials are underway in the lab; more field testing is needed. Existing populations in Europe are being studied to find naturally occurring bio-control options.

Cultural control methods include:

- Using row cover immediately after planting as a barrier to prevent adults from laying eggs on desirable host crop (moths are nocturnal so cover can be removed during the day for weeding)
- Crushing any larvae or pupae found
- Rotating crops, planting in a different location each year
- Raking up and removing host plant debris at the end of the season where adults overwinter

Look-alike Pests

There are a few other pests that damage onions and leeks that may be confused with leek moth



Thrips, a tiny insect ~1/8" long, are a common pest of onions. They feed on the outside of the leaf, leaving speckled dead spots.



Salt marsh caterpillars are an occasional pest that feed on the outside of leaves and are larger and hairy.



Botrytis leaf blight causes white patches on leaves. Split leaf open and no debris will be visible

If you suspect leek moth damage on your onions, garlic, leeks or chives please contact your local Cornell Cooperative Extension office.

Prepared by Amy Ivy, revised July 2011