The Indian meal moth (*Plodia interpunctella*) is a common pest of stored foods. The larvae (grubs or caterpillars) feed on a wide variety of dried food products but are most frequently found on cereals, nuts, seeds, and dried fruit.

**Identification**

These small moths, with a wingspan of 10-15 mm, are quite distinctive in appearance. The forewings are purplish brown with pale yellowish buff bases while the hindwings are greyish white. The larvae are white to yellow in colour with reddish brown or yellowish brown heads. Presence of silken webbing produced by the larvae is usually the first sign of an infestation. Some adults are very dark, and in some lighting conditions many live specimens may appear black.

**Life cycle**

Females can each lay up to 400 minute, greyish white eggs in cracks and crevices on or near the foodstuff. The yellowish white or pinkish larvae (grubs or caterpillars) are about 12mm long when fully grown. They go through 4-7 instars (moulting stages) during their development. As they feed, they cover the foodstuff with webbing. It is often the presence of this webbing that gives the first indication of an infestation. The fully grown larvae wander away from the foodstuff to spin white silken cocoons within which the pupae are formed. At this stage, larvae are often noticed climbing walls or wandering across ceilings. The adult moths are quite small (wingspan about 18mm) and have purplish-red forewings with distinctive pale yellowish or brownish bases.

The duration of the life-cycle of this moth is quite variable, according to the conditions under which it is living. The following figures are derived from experimental rearing of moths under laboratory conditions:

- Eggs hatch in 7-8 days at 20°C; 4-5 days at 25°C; 3-4 days at 30°C.
- Larvae become fully grown in c35 days at 20°C; c16 days at 25°C; c14 days at 30°C.
- Pupae - moths emerge after 15-20 days at 20°C; 8-11 days at 25°C; 7-8 days at 30°C.

The time taken to complete the life cycle at 18-30°C under ideal laboratory conditions is therefore about 25-60 days. However, if conditions are unfavourable, due to changes in temperature or humidity, lack of food or overcrowding, larvae may go into a period of diapause, during which feeding and development ceases. These moths therefore produce from 2 to 8 generations a year, according to conditions. In the British Isles, Indian meal moths cannot survive the winter out of doors but continue to breed in heated buildings.
Survival of eggs
Maximum temperature for development of eggs is believed to be 35°C, but it is probable that eggs will survive for a short time at slightly higher temperatures. However, it is extremely unlikely that they would survive cooking processes.

Entrance of larvae into packages
Larvae are capable of biting their way through a wide range of packaging materials, such as paper, cellophane and polythene. Entry holes of small larvae are sometimes difficult to detect. Small larvae can also crawl between paper folds or through any small gaps (e.g. tears or pinholes) in the packaging.

Dealing with infestations
Minor outbreaks can be dealt with by removing and destroying any infested food (look for webbing and small grubs), and thoroughly cleaning food cupboards and surrounding areas. Further infestations can be avoided by keeping all stored foods in sealed tins or similar pest-proof containers. Serious outbreaks may require insecticidal treatment but this should be carried out professionally.

Prevention and Control
Remove and destroy all infested foods (look for webbing and small grubs). Clean shelves and cupboards thoroughly, paying particular attention to any cracks and crevices, which may conceal larvae and pupae. Store all vulnerable foods in sealed containers. Severe infestations may require treatment with insecticides but this must be carried out by a qualified professional.

To find out more:
Wikipedia article with images:
http://en.wikipedia.org/wiki/Plodia_interpunctella
Info sheet on the species, advice on control:
http://ento.psu.edu/extension/factsheets/indian-meal-moth