

PEANUT INSECTS



>>Ground Nut Bruchid:



The adult is a brown beetle. Small translucent milky-white eggs can be seen attached to the pod wall. The larva burrows through the pod wall, and starts eating the seed. Fully grown larvae often leave the storage sack and pupate in large numbers at the bottom of the pile of sacks.

>> *Caryedon serratus* (Olivier):



The adult is a brown beetle, about 4-7 mm long and 5 mm wide with prominent large hind legs . A single gravid female lays 20- 30 creamy white eggs (1 mm long), which are glued to the surface of groundnut shell or kernels. The incubation period varies from 4 to 6 days.. The first sign of attack is the appearance of 'windows' (approximately 3 mm in diameter) made on the pod wall by the grub to allow the adult to leave the pod. Each larva feeds solely within a single kernel . Larval development is completed in 40 to 45 days, and the pupal stage lasts for about 15 days . Sometimes, the grown-up larvae leave the pod and pupate at the bottom of the sacks. By this stage, the groundnut seeds are badly damaged and are unfit for human consumption, seed use or oil expulsion. Under optimum conditions (30-33°C and 70-90% relative humidity), the life cycle of *C. serratus* is completed in about 60 days.

PEANUT INSECTS



>>Red flour beetle, *Tribolium castaneum*:



Red flour beetles attack stored groundnuts and other grain products such as flour, cereals, meal, crackers, beans, spices, pasta, cake mix, dried pet food, dried flowers, chocolate, nuts, seeds and even dried museum specimens. The adults are 3-4 mm long and brown in color. The female lays eggs in cracks of the testa or on the damaged portions of the kernel to enable the young grub to feed on the kernel directly. A female lays up to 450 individual eggs, distributed among the pods or seed. Eggs hatch in 3-4 days. The grubs are cylindrical in shape with prominent projections on the last abdominal segment. The pupal period lasts for 7-10 days, and the adults can live up to 18 months.

>>Rice moth, *Corcyra cephalonica*:



The rice moth has a wingspan of 12-15 mm, with grayish brown forewings. The female lays up to 150 eggs within a few days of emergence. The adults live for 1-2 weeks and drop their eggs in the produce. The creamy white larvae start feeding on the seed immediately after hatching. At maturity, they construct white silken cocoons for pupation. The larvae are capable of damaging sound kernels, and can feed both on the surface and within the seed. They spin a tough silken fibre, webbing the kernel and frass. This type of damage can easily be distinguished from the fine dust that results from beetle damage. Pupation takes place in the galleries developed by the larvae or in the crevices in storage structures. Development from egg to adult requires 30-35 days under optimum (30°C and 90% RH) storage conditions. The males emerge 1-2 days before females.

PEANUT INSECTS



>>Elasmolomus sordidus:



The adult is dark brown, approximately 10 mm long and 2 mm wide. Each female lays about 100 eggs in its lifespan of about 30-40 days. In the field, the females lay their eggs in the soil or on groundnut haulms, but under storage conditions, eggs are laid loosely among the groundnuts or on sacks. The first instar nymphs have a bright red abdomen; later instars become progressively darker. All stages of the pest feed on seeds, perforating the pod with their rostrum. On groundnut, the initial infestation starts when the harvested plants are placed for drying in the field. The infested pods are discolored and show oily spots on the outside. In case of severe infestation, the produce is unfit for seed as well as human consumption.

>>BORROW BUG:



Adults are black, roughly 1/4 inch long, and superficially resemble small stink bugs. However, they are more oval and have spines on their leg segments (tibiae). The front wings are clear and membranous (hemelytron) at the tips beyond a black thickened basal part (corium and clavus), and can be seen at the rear end of the body when the wings are held at rest. Burrower bugs are difficult to monitor because they live below ground, and their damage often goes unseen until it's too late. If a farmer has irrigation and/or deep-tills his peanuts, the risk of burrower bugs decreases dramatically. Nevertheless, burrower bugs can and do sometimes cause damage in conventionally tilled, irrigated fields. Burrowing bugs occur in high numbers around lights at night during periods in the fall.

PEANUT INSECTS



>> *Cadra cautella*:



The larvae of moths and the grubs and adult beetles bore into and damage seeds. Moths cause extensive webbing. The bruchid beetle is the major pest of groundnut in pod shell. A good post harvest pest management programme based on good storage practices is very important.

>> **White fringed weevil:**



Larvae damage peanut crops by chewing the tap root of the developing peanuts and by attacking pods. However, if a susceptible winter crop such as chickpeas is planted following peanuts, these larvae will continue to grow and can cause major tap root damage (resulting in plant death) to the crop. Conversely, peanuts following lucerne (a major host) would be at greater risk. No long-term control is available except to grow crops other than legumes. Larvae are up to 12 mm long, are white to grey with a brown head, legless, have a slightly curved body and are soil dwelling. Adult weevils are 12 mm long, are grey-brown with a white band along the side of their body and have a short snout. Adult weevils cannot fly and emerge from the soil in summer. Pulse crops attacked - peanuts and chickpeas. Other crops include lucerne and maize. Major damage occurs in autumn-winter.



PEANUT INSECTS

>>Wireworms:



Wireworms are the immature stages of click beetles belonging to the family Elateridae. Wireworms are cylindrical in shape and have a dark brown body (figure 8). These are univoltine insects (one generation per year). Wireworms can have life cycles ranging from 3 months to 2 years; some species can live up to 9 years in soil. Wireworms overwinter many inches below the ground, which makes insecticidal control very difficult.

>>Etiella behrii:



Etiella behrii is a species of moth of the Pyralidae family. The adult is brown or grey, each forewing having two orange bands at the base, and also a white line along the leading edge. The hind wings have a satin sheen, and are pale brown with brown veins and a brown edge. The moth has a wingspan of about 1 cm.

>>White grubs, cane:



Young larvae feed on soil humus and small plant roots. Older larvae attack major roots, killing some plants and reducing the vigor of others. This can provide an entry point for CBR. The developing nuts can also be attacked.

PEANUT INSECTS



>>Lesser Cornstalk Borer:



The Lesser Cornstalk Borer is a species of snout moth. The eggs are oval, measuring about 0.6 mm in length and 0.4 mm in width. When first deposited, they are greenish, soon turning pinkish, and eventually reddish. The female deposits nearly all her eggs below the soil surface adjacent to plants. A few, however, are placed on the surface or on leaves and stems. Duration of the egg stage is two to three days.

>>Termite:



Termites are white translucent ant like insects. They enter the root system and burrow inside the root and stem; this usually kills the plant. They bore holes in the pods and damage the seed. They remove the soft corky tissue from between the veins of the pods (scarified). They do not usually damage the seed. But scarified pods are more susceptible to infestation by *Aspergillus* fungus, which produces health hazard aflatoxins.

PEANUT INSECTS



>>Ephestia cautella:



This pest is common throughout the tropics but is less prevalent in arid areas. It commonly infests stored shelled groundnut. It is a dull greyish brown moth. The forewings have obscure markings, with an outer pale band and broad dark band with a broad pale band on the inner edge. The adult avoids strong light and rests in dark places during daylight. The female lays up to 300 eggs in the groundnut produce often by simply dropping the eggs through holes between the fibres in jute bags or by laying eggs liberally on the surface of the kernels. The larvae move freely through the produce contaminating it with webbing and frass. They feed on the kernels until they are mature. In optimum conditions at 28 °C and 70 percent RH, the eggs hatch in three days, develop from egg to adult in about 24 days and complete their life cycle within 40 to 50 days.