

The Grain weevil can only breed in grain with a moisture content of more than 9.5% and at temperatures within the range 13-35°C. The female lays about 200 eggs at a rate of 2-3 per day depending upon temperature and humidity, placing each one in a small hole bored in the grain and sealing it in with a mucilaginous plug of saliva. At 18-20°C the eggs hatch in 8-11 days to give small, white, legless larvae which feed on the endosperm of the grain. Only one larva develops in small grains such as wheat and rice but large grains such as maize will support the development of several. Larvae are never freeliving and develop entirely within the grain. They moult four times, finally pupating within the grain after 6-8 weeks. The adults emerge after a further 5-16 days and will live for about 9 months. If disturbed they will feign death by drawing their legs up to their bodies and remaining still. At 15°C and a grain moisture content of 11.3% the full life-cycle takes 6 months. The life-cycles of the Rice and Maize weevils follow a similar course to that of the Grain weevil.

Grain weevils are important pests of farm-stored grain. They are frequently regarded as primary pests of grain since they are able to infest otherwise undamaged grain. Grain weevils will also attack other hard cereal products, e.g. macaroni and spaghetti. Fine cereal products are unsuitable for breeding purposes unless they become caked.

The following damage may be caused:

1. Reduction in the weight and quality of grain as a result of the larvae feeding on the endosperm. The germ is not always attacked so germination may take place, producing a weak seedling which is vulnerable to attack by moulds, bacteria and other insects. Both larvae and adults will feed upon grains.
2. Tainting with white, dusty excreta which contaminate the product as well as rendering it unpalatable.
3. Heating of the grain, accelerating development of the insects and making the commodity liable to caking, moulding and even germination. Temperatures may be attained which actually kill the insects.

Weevil-damaged grain can be readily recognised by the presence of large holes which are the exit holes of the emerging adults. Some idea of the huge numbers of weevils that can be generated is provided by the results of one study in which, 5 weeks after wheat was infested with larval forms, adults were seen to be leaving the grain at a rate of 100 per kg per day.