# *Acanthoscelides obtectus* (Say)

# (Bean weevil)

Fam. Chrysomelidae (Subfam. Bruchinae)

General information: Primary pest of fresh and dried beans and seeds of other legumes (lentils, peas, soya); occurs worldwide in stocks, but also outdoors; adults feed on bean foliage, seed pods and flower pollen; up to 5 generations per year at warm temperatures (heated storages).

Infested products: Pulses (i.a. *Phaseolus* beans)

Related species: *Bruchus pisorum* (Common pea weevil), but no reproduction under storage conditions as they cannot re-infest stored seeds

Total development: About 34 days at 32 °C and 70 % relative humidity (100 days at 20 °C)

| **Egg** | **Larva** | **Pupa** | **Adult (beetle)** |
|---|---|---|---|
|  | | | |
| 6 to 30 days | 20 to 28 days | 9 to 29 days | 10 to 21 days |
| - 0.7 mm elliptical form<br>- white yellowish<br>- eggs are scattered in loose groups of 2 - 20 in or on bean seeds (gap at the sleeve seam or on the pods)<br>- 40 - 100 eggs per female | - whitish, hairy<br>- initially stretched with legs, then maggot-shaped, 0.6 - 4.0 mm long<br>- feed mainly within the beans (seeds)<br>- up to 30 larvae per bean<br>- 4 larval instars | - pupation occurs within the empty bean seed<br>- emergence through the circular holes called “windows” prepared by the larvae which consume the seed | - 3.0 - 4.0 mm long<br>- brown-mottled; drop shaped<br>- fine, dense yellow-brown cross bands on deck wings, abdomen not completely covered<br>- femur of hind legs with 1 big and 2 small teeth<br>- saw-toothed form antenna<br>- flight capacity |

Damage: Feeding holes (small entrance and large exit holes); hollow seeds (empty pods); reduced germination capacity; characteristic sweetish-fruity ester smell due to male pheromone; large populations reduce stored seeds to dust.

Prevention: Cleanliness; regular inspections; removal of infested seeds from the previous year; for smaller quantities, turn storage containers daily; cool and dry storage, avoid introduction of weevils from the field

Early detection: Pheromone trap (adhesive); screening for adults; inspection for typical “window frass” of pupating larvae in pulses.(see last picture)

Control: Fumigation (including pulses and empty rooms); inert dusts and gases; freezing; contact insecticides (e.g. white space); authorized plant protection products. Please refer to www.bvl.bund.de : Database and pesticides directory, part 5, stored product protection; thermal treatment; use of biological antagonists (*Lariophagus distinguendes* or *Anisopteromalus calandrae*)

Damage:


Dot-like entrance holes (small)


Round exit holes (larger) and excavated seed


Exit hole with ‘window’ (left)