



Bean bruchid

Acanthoscelides obtectus



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Adult bean bruchid on bean with exit hole.



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Adult, 3-4.5 mm long. Body grey, brown and reddish-brown, without any distinctive patterns.

SUMMARY: The bean bruchid is a major post-harvest pest of most bean species. The infestation begins in the field, but becomes a major problem after harvest, when the holes left in the beans reduce the value of the crop. To prevent a major infestation it is important to harvest the beans as soon as they reach maturity. Storing the beans in a clean facility is the most important measure. Remove old beans from the store and use a disinfectant to clean the storage room if necessary. Use an air-tight storage container if possible.

KEY SIGNS

While the bean bruchid is primarily known as a storage pest of grain legumes, it starts attacking the pod while the crop is still in the field. However, it is during storage that it causes the most damage and can multiply. Signs include the eating away of the internal parts of the bean, holes in the bean and adults on the stored crop.

The eggs are milky white, dome shaped and oval. The larvae of bean bruchids are white and can be found in tunnels in the bean. The adults are 3-4.5 mm in length and grey and reddish-brown. The wings are short and have patches of yellowish and black hairs. Adults lay eggs on the outside of ripening pods and the larvae bore into the seeds and feed. Before pupating, the larvae cut a hole to exit through but remain inside the bean. When they reach the adult stage, the adults push their way out leaving a hole about 2 mm in diameter. When threatened, adults will pretend to be dead and fall from the plant.

MANAGEMENT

Prevention – what to do before signs are seen

Cultural approaches: Use clean certified seed.

Consider intercropping maize with beans.

Harvest beans as soon as they are mature to reduce the risk of heavy infestation. Remove and destroy all infested crop residues immediately after harvest.

Air-dry the beans to a moisture level of 12% or lower before storage.

A clean storage facility is one of the most important practices. Clean the storage facility prior to storage, using a disinfectant if necessary. Do not store old beans with newly harvested beans. Store beans in air-tight containers if possible, such as in plastic sealable bags, drums, or clay pots.

Chemical approaches: Mixing beans with vegetable oils, neem seed powder, wood ash or *Beauveria bassiana* (a fungus) can protect the stored beans and reduce losses. Add 1g of *Beauveria bassiana* or wood ash to 1 kg of the stored beans.

Control – what to do after signs are seen

Chemical approaches: The insecticide phosphine is also an effective fumigant for storage facilities, but is toxic, expensive and not widely available. For smallholders, the use of insecticides is not recommended since the beans are usually stored for short periods of time and intended for consumption.

CAUSE

The bean bruchid (*Acanthoscelides obtectus*), also known as the dry bean weevil, is a major pest of common bean and lima bean, and also cowpea. While the bean bruchid is primarily known as a storage pest of grain legumes, it starts attacking the pod while the crop is still in the field.

IMPACT

The bean bruchid is a major pest of stored beans. The damage caused has a negative impact on the value and marketability of the crop and can even change some quality characteristics of the crop, including the taste. The holes made by the larvae often make the crop unmarketable. Losses of up to 40% of the harvested crop have been reported in Tanzania.

DISTRIBUTION

The bean bruchid is native to South America, but has spread to most other warm regions of the world. In Africa, the pest has caused widespread damage in Kenya, Lesotho, Malawi and Nigeria, and is also present in Angola, Burundi, DRC, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe.

FURTHER READING

Kasambala, S. and H.Mziray. Avoiding bruchid infestation in stored beans. LEISA Magazine, 20.3, September 2004

Josephine M. Songa & Wilson Rono (1998). Indigenous methods for bruchid beetle (Coleoptera: Bruchidae) control in stored beans (*Phaseolus vulgaris* L.) International Journal of Pest Management, Volume 44, Issue 1, page 1-4.

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