

PROTECT YOUR HYBRIDS

FROM EUROPEAN CORN BORER

A common pest in many crops, European corn borer has been a problem in corn fields for years. While there are multiple Bt traits available on the market to protect your corn from this pest, it is important to use best management practices to manage European corn borer effectively.

European corn borer

Since its introduction to North America from Europe in the early 1900s, the European corn borer has adapted to many hosts and environments. Egg masses of up to 60 pin-sized eggs mature quickly over a few days and will appear ready to hatch once they turn from white to light green with a black center.

Young larvae have dark brown heads and light brown bodies with rows of small brown spots. As they mature, they become lighter in body colour. European corn borer have three pairs of true legs behind the head and five pairs of prolegs on their abdomen.

Adult moths have an alternation of yellow-brown and medium brown lines across their wings where the patterning of the male wings is darker than the female wing pattern.

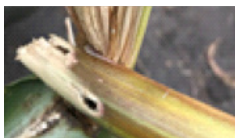
Plant damage

European corn borer can have up to three generations each year, meaning they are around much of a plant's life cycle. They feed on, and tunnel into, leaf mid-ribs. Larger larvae will tunnel into the lower stalk. More economically important, if borers are around after tassel emergence, they feed in sheath areas, silk channels, in stalk, ears or ear shanks.

Young larvae have dark brown heads and light brown bodies with rows of small brown spots.



Larger larvae will tunnel into the lower stalk.



After tassel emergence, larger larvae will feed in sheath areas, silk channels, in stalk, ears or ear shanks.



Syngenta offers multiple trait stack options to deliver excellent control of European corn borer, including Agrisure Viptera® 3110, Agrisure Viptera® 3111, Viptera™, Duracade™, and DuracadeViptera™, which help give every corn seed the chance to mature and reach its full genetic potential while offering the additional benefits of:

- Fewer broken stalks
- Yield and test weight protection
- Noticeably healthier plants with less insect damage
- Reduced risk of mold and mycotoxin development for high-quality grain

syngenta®

Scouting for European corn borer

In Canada, there are two strains of European corn borer – a multigenerational strain (typically two generations; bivoltine), and a single-generation strain in more northern areas (univoltine). With widespread use of European corn borer Bt traits populations of this pest have been reduced in corn. Areas of main concern are those where there is overlap of the univoltine and bivoltine strains of European corn borer, regions with high acreage of corn growing, fields with non-Bt corn (especially if they are no-till).

Scouting should be done by examination of a minimum of 5 sets of 20 plants, giving 100 plants examined per field. For first generation European corn borer, damage is primarily on the leaves, with a preference to taller, early-planted corn. Young larvae can be found hiding in the whorls of damaged leaves and older larvae in the stalks. Ensure that damage ratings are recorded, including number and size of larvae.

Second generation European corn borer females tend to lay eggs in late-planted fields. Egg masses can be found by examining the three leaves above and below the ear, looking at the underside, near the midrib. Egg mass counts should be recorded at each scouting (every five to seven days) until peak moth flights have subsided. This could take up to one month.

For more information on scouting techniques, visit the Ontario Ministry of Agriculture Food and Rural Affairs Pub 811 document at: <https://www.ontario.ca/page/agronomy-guide-field-crops>

Foliar chemical options for European corn borer

Foliar insecticides containing chlorantraniliprole (IRAC group 28; Coragen(r)) and deltamethrin (IRAC group 5; Delegate(r)) are useful as treatment options for European corn borer. It is important to refer to product labels for proper use rates and spray timings for European corn borer, and to consider these timings when scouting corn fields. For high pest pressure fields where more than one application of an insecticide for European corn borer is required, it is important to rotate modes of action of insecticides within the same field season so as to delay pest resistance to these active ingredients.

For consideration on the necessity of an insecticidal spray for European corn borer, please use the European Corn Borer Economic Threshold Calculations in Appendix H of OMAFRA Pub 811: <https://www.ontario.ca/page/agronomy-guide-field-crops>

For more information on the European corn borer, please visit the Canadian Corn Pest Coalition website at: <https://cornpest.ca/corn-pests/european-corn-borer/>

Avoiding resistance

For optimum pest protection of European corn borer, and avoidance of resistance development of the pest to the Bt traits, plant a hybrid with multiple modes of action against European corn borer. Be sure to apply Best Management Practices such as scouting and proper crop rotation. It is best to rotate crops in the fields year after year. If crops cannot be rotated, consider a rotation of traits to ensure pest populations are not experiencing the same traits year after year and building resistance.

To aid in resistance management, and population reduction, of European corn borer, allow natural enemies to attack immature stages of the insect. Additionally, if possible, shred corn debris after harvest in order to destroy populations of European corn borer that are overwintering in the stalks and field stubble.
