

# 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.

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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.



Agrisure Viptera® trait stacks deliver excellent control of European corn borer as part of the most comprehensive above-ground pest control package. This helps give every corn seed the chance to mature and reach its full genetic potential. Trait stacks featuring the Agrisure Viptera trait offer above-ground insect control, including European corn borer, for:

- 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

Agrisure Viptera 3330 is one of the most complete European corn borer trait stacks, offering three different modes of action to protect against this insect pest.



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, such as Agrisure 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).

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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.

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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: <http://www.omafra.gov.on.ca/english/crops/pub811/pub811.pdf>

## Foliar chemical options for European corn borer

The foliar insecticides Matador® 120EC, containing lambda-cyhalothrin (IRAC group 3A) and Voliam® Xpress®, containing a combination of lambda-cyhalothrin (IRAC group 3A) and chlorantraniliprole (IRAC group 28), are useful as foliar 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 fields where multiple generations of European corn borer are present, consider peak damage from the pest as a consideration of spray timing(s) and be aware of the number of allowed applications of the product(s) being used per season.

For consideration on the necessity and timing of an insecticidal spray for European corn borer, please see Syngenta Canada's economic threshold calculator:

<https://www.syngenta.ca/SFGrowerTools/ECBCalculator1.aspx>.

Additionally, the Ontario Ministry of Agriculture Food and Rural Affairs Pub 811, Appendix H, has a European corn borer economic threshold calculator: <http://www.omafra.gov.on.ca/english/crops/pub811/pub811.pdf>.

## Avoiding resistance

For European corn borer control, plant an Agrisure Bt hybrid containing at least one trait effective against this pest, along with the corresponding refuge. For optimum pest protection, and avoidance of resistance development of European corn borer 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.

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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.

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