

Identifying the European corn borer may become easier with new technique

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Farmers who need to control the destructive European corn borer (*Ostrinia nubilalis*) may soon be able to distinguish it from look-alike species by simply scanning an image of its wing into a computer and pecking a few keys. A technique developed by Polish scientists marks the first time that measurements of key structural features in the wing have been used to identify the borer, potentially a major advance in controlling the pest.

The method was developed by Lukasz Przybylowicz, Michal Pniak, and Adam Tofilski, and it is described in an article in the *Journal of Economic Entomology*.

The European corn borer is a prime pest on corn but also impacts more than 200 other crops, by some estimates causing up to \$2 billion in damage annually in the United States alone. Most farmers are not able to identify adult [corn](#) borers or distinguish it from other species.

The identification method developed by the scientists focuses on the arrangement of veins in the wings of the moths, applying a technique known as geometric morphometry. Essentially, it examines and compares the geometry of an organism's structures—in other words, where its parts are positioned in relation to one another. Computerized statistical analysis is key to attaining results.

The researchers selected nine points—called "landmarks"—at junctions of veins in the central part of the wing. Landmarks, such as where veins

join, are a common feature among species. A mass of geometrical information based on coordinates of the landmarks was then entered into software used for identification, and when the shape of wing venation was compared, significant differences were seen between species. The accuracy of the test was 97 percent.

Before farmers can be sure of results, the scientists note, the results "should be confirmed by further studies." Once they are done, the researchers say "this method can be used by [farmers](#) to identify this pest and apply control measures at optimal time."

More information: Łukasz Przybyłowicz et al. Semiautomated Identification of European Corn Borer (Lepidoptera: Crambidae), *Journal of Economic Entomology* (2015). [DOI: 10.1093/jee/tov300](https://doi.org/10.1093/jee/tov300)

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