Testing the Fungus Beauveria on Corn Borer: Three Cooperators Perspectives

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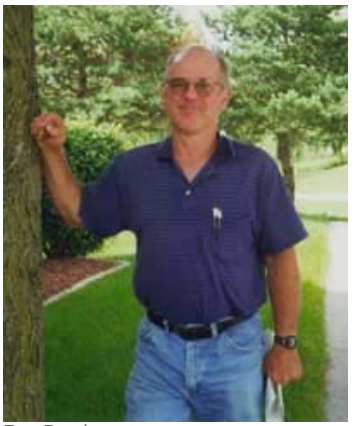
Ron Brunk

We are interested in the possibility of controlling corn borers in field corn without chemical insecticides. An insecticide program is costly, takes accurate timing, and includes the inherent problems of chemical residues and human exposure in the field. The plan to infect a field with a perennial fungal disease fatal to European corn borer seems feasible and would certainly be of practical and economic value. When the opportunity arose to cooperate with PFI and the Iowa State Entomology Department in an experiment with an endophytic fungus, we were interested and willing. We hope this experiment will add to knowledge on the degree of control this fungus could provide and its persistence in a treated field.

Doug Alert & Margaret Smith, Hampton

Margaret and I have been cooperating with Les Lewis and associates of the Agricultural Research Service on a project evaluating the fungus Beauveria bassiana for long term suppression of European Corn Borer (ECB). Our role in the project included normal crop production tasks with some additional assistance to facilitate efficient plot harvest. We also politely deactivated electric fences when researchers doing plot work and collecting data!

After seeing the early data showing the naturally occurring fungus had already killed a significant percentage of ECB larvae, we were curious why most of our neighbors' fields were treated for corn borer this season. We are hopeful that the additional application of the fungus (seeding the field) will increase the percentage of larvae killed. This seems to us a promising area of research that would give us another tool for the pest management "toolbox".

Dennis and Kate McLaughlin, Cumming

Strip intercropping on the McLaughlin farm at a PFI Field Day

In 1996 ISU researchers Les Lewis and Bob Gunnarson came to our farm to evaluate in-field applications of a naturally occurring fungus known as Beauveria that infects the corn borer in the larval (worm) stage. As I understand it, the basic strategy is to increase the prevalence of this "good guy" fungus.

Resistance is a term we hear in connection with pests like weeds and insects. Nature is creative and pests tend to evolve ways around our defenses. The classic examples are those insecticides and herbicides whose effectiveness has declined due to their widespread use (and misuse). Even a safe product like Bt corn may well have a very limited "shelf life," leaving us with an "evolved" corn borer and a prematurely obsolete tool. Assuming Nature "bats last" in the game of resistance, Beauveria, being a living organism itself, should evolve right along with the corn borer.

At this point there are more questions than answers from the trial. Corn yield seems almost secondary to issues like application methods, timing, infection rates, and winter survival of the fungus. Time will tell how the Bt story turns out, but Beauveria may provide a way to keep Nature "at bat" for us long term in our struggle with the number one economic pest of corn.