

'Soyscreen': Sunscreen for fungus to expand biological control of crop pests

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Farmers would use the same method of spraying they use for insecticides to protect insect-fighting fungi with a newly developed sunscreen. Credit: Mike Dabell

Scientists today at the 240th American Chemical Society (ACS) National Meeting & Exposition described development and successful initial tests on a substance that acts as a sunscreen for the microscopic spores of a fungus, brightening prospects for wider use of the fungus as a means of wiping out insect pests that attack food crops.

"Our finding is especially important for the environment because improving the effectiveness of biological control treatments like this will help to reduce dependence on chemical pesticides," said team leader Robert W. Behle, Ph.D.

Behle explained that the [fungus](#) -- *Beauveria bassiana* -- shows great

promise as a [biological control](#) agent, one that does not use conventional pesticides and poses little threat to people, animals, beneficial insects, or the environment. He is with the U.S. Department of Agriculture's Agricultural Research Service.

The problem, however, is that *B. bassiana*'s [spores](#) are vulnerable to sunlight. Insecticides based on the fungus contain the spores in a liquid that can be sprayed onto crops. The spores germinate into the actual fungus, which infects and kills a range of destructive insect pests.

"To protect the fungus, we used soyscreen oil, bio-based UV-absorbing molecules made by combining molecules of soybean oil with ferulic acid," Behle explained. "The spores survive quite well in oil-based formulations. We found that soyscreen had no harmful effects on the fungus spores stored in the oil for 28 weeks. Most important, the 'soyscreen' successfully protected the spores from degrading when exposed to sunlight."

The study was among nearly 8,000 scientific reports scheduled for presentation at the meeting, one of the largest scientific gatherings of 2010.

Provided by American Chemical Society

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