

Will benefits of nanopesticides outweigh costs?

Stacey Harper is doggedly researching tiny, human-made substances called nanoparticles. The scientist at Oregon State University in Corvallis hopes to be able to identify which particle will be a boon and which a bane for farmers, consumers and the environment.

Nanoparticles, which are the size of molecules, are already used in numerous items from sunscreen to biomedical devices. Their minuscule size makes them efficient, but also unpredictable. Harper said the first nano-formulations of pesticides are quietly making their way onto agricultural fields, and she wants to know what happens next.

Harper said she thinks the vast majority of nanopesticides will not be toxic, or at least no more toxic to non-target organisms than current pesticides.

By shrinking the size of individual nanopesticide droplets, there is broad consensus from industry to academia to the Environmental Protection Agency that the total amount of toxins sprayed on agricultural fields could be significantly reduced. Smaller droplets have a higher total-surface area, which offers overall greater contact with crop pests.

But, once they are sprayed on fields, will they clump on crops or slide through the soil into water bodies? Most worrisome, Harper said, is whether they will be readily taken up by organisms that aren't pests, such as bees or fish, and how long they will persist in the environment.

Read full, original article: [Nanopesticides illicit worry and hope](#)