New tools needed to protect pesticides' effectiveness from evolution of weed and insect resistance

To slow the evolutionary progression of weeds and insect pests gaining resistance to herbicides and pesticides, policymakers should provide resources for large-scale, landscape-level studies of a number of promising but untested approaches for slowing pest evolution. Such landscape studies are now more feasible because of new genomic and technological innovations that could be used to compare the efficacy of strategies for preventing weed and insect resistance.

That's the takeaway recommendation from a North Carolina State University review paper addressing pesticide resistance published today in the journal *Science*.

Pesticide resistance exacts a tremendous toll on the U.S. agricultural sector, costing some \$10 billion yearly. Costs could also increasingly accrue on human lives. If insecticide-coated bed nets and complementary insecticide spraying failed to slow the transmission of malaria by pesticide-resistant mosquitoes, for example, the human health costs in places like Africa could be catastrophic.

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"We're working down the list of available tools to fight weeds and insect pests," said Zachary Brown, assistant professor of agricultural and resource economics at NC State and a co-author of the paper. "It hasn't been economically feasible to develop new herbicides to replace glyphosate, for example, so what's old is becoming new again. But the current incentives don't seem to be right for getting us off this treadmill."

Editor's note: Read the *full study* (behind paywall)

Read full, original post: <u>What Happens If We Run Out? Pesticide Resistance Needs Attention, Large-Scale Study</u>