

## Are pesticides responsible for farmer depression, suicides?

On his farm in Iowa, Matt Peters worked from dawn to dusk planting his 1,500 acres of fields with pesticide-treated seeds. “Every spring I worried about him,” said his wife, Ginnie. “Every spring I was glad when we were done.”

In the spring of 2011, Ginnie Peters’ “calm, rational, loving” husband suddenly became depressed and agitated. “He told me ‘I feel paralyzed’,” she said. “He couldn’t sleep or think. Out of nowhere he was depressed.”

A clinical psychologist spoke to him on the phone and urged him to get medical help. “He said he had work to do, and I told him if it’s too wet in the morning to plant beans come see me,” Mike Rossman said. “And the next day I got the call.” Peters took his own life. He was 55 years old.

No one knows what triggered Peters’ sudden shift in mood and behavior. But since her husband’s death, Ginnie Peters has been on a mission to not only raise suicide awareness in farm families but also draw attention to the growing evidence that pesticides may alter farmers’ mental health. “These chemicals that farmers use, look what they do to an insect. It ruins their nervous system,” Peters said. “What is it doing to the farmer?”

Some research suggests that the chemicals that farmers and their workers spread on fields may alter some of these brain chemicals.

Peters and his wife were among 89,000 farmers and other pesticide applicators in Iowa and North Carolina who have participated in the Agricultural Health Study led by the National Institute of Environmental Health Sciences.

Last month, epidemiologist Freya Kamel and her colleagues reported that among 19,000 studied, those who used two classes of pesticides and seven individual pesticides were more likely to have been diagnosed with depression. Those who used organochlorine insecticides were up to 90 percent more likely to have been diagnosed with depression than those who hadn’t used them. For fumigants, the increased risk was up to 80 percent.

“Our study supports a positive association between depression and occupational pesticide use among applicators... and suggests several specific pesticides that deserve further investigation in animal studies and other human populations,” the authors wrote in the journal *Environmental Health Perspectives*.

The major strengths of the research are its large number of participants and its detailed pesticide exposure data, said Stallones, who was not involved in the study.

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