Connecting the Dots: Is There a Link Between Parkinson's Disease and Pesticides?

By Michael Blankinship

Recent news has suggested that there is a link between pesticides and Parkinson's Disease (PD). Specifically, the herbicide paraquat and the piscicide (fish killer) rotenone have been implicated. PD is a degenerative disorder characterized by the death of neurons in the brain. This disease is common among the elderly with symptoms of shaking, rigidity, slowness of movement, difficulty walking, and cognitive and behavioral problems. Although PD is the most common neurodegenerative disorder after Alzheimer's disease, the cause of PD remains unknown. As research into the origin of this disease increases, scientists have investigated the potential that pesticide exposure may play a role.

Much of what is known about the mode of action of Parkinson's disease is based on an accidental exposure of the chemical MPTP 1983 by a group of young drug addicts who developed PD overnight after self-administration of this narcotic drug.

It turns out that paraquat and rotenone illicit similar effects in humans as does MPTP. These two pesticides resemble MPTP in either structure or mechanism of action and both induce the death of brain cells that ultimately cause behavioral changes similar to those associated with PD. Yet, scientists are unconvinced that these pesticides alone are to blame. For example, analysis to date that suggests a link between PD and pesticide exposure is based on studies that contain significant sampling bias.

Establishing a potential connection between rotenone, paraquat and PD is on-going. What about paraquat's cousin, diquat? Diquat provides the rapid "burn" to vegetation that paraquat does, but instead carries a Caution label and is labeled for aquatic use. Remember, regardless of your choice of pesticide, always, carefully read and follow the label directions.