

Low level herbicide use can damage potato reproduction

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Currently, plant testing in the United States to determine potential ecological risks from chemical pesticides to nontarget plants requires two tests, both of which use immature plants. Protection of the plant development and reproduction are not considered, unlike tests required for the protection of animals. Past research conducted by the USEPA and others have shown that plant development/reproduction is not adequately protected with the current test protocols.

The stage of plant development when exposed to a pesticide has an important impact on what plant organs are injured. Vegetation may or may not display symptoms of injury when reproductive organs are severely damaged. Yield and quality reduction can have significant economic and ecological effects. Therefore, field trials were conducted to determine if potato vegetative growth and tuber yield and quality were affected by herbicides at below recommended field rates.

Potato plants were exposed to one of seven different herbicides at various concentrations below normal field application rates. Results from this study were published in the November-December issue of the *Journal of Environmental Quality*. They demonstrated that potato tuber yield and quality can be affected by herbicide application rates below those causing a reduction in vegetative growth or injury. Potato tuber formation may be a sensitive indicator of developmental/reproductive responses of plants to chemical pesticides.

Research is continuing at the Western Ecology Division of the USEPA,

Corvallis, OR in support of pesticide registration requirements for the protection of nontarget plants from pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

View study abstract at jeq.scijournals.org/cgi/content/abstract/37/6/2070

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Source: American Society of Agronomy

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