

### Should you Ingest or Market Crops Injured by Pesticides (Monday 07/30/2012 12:00PM)

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Non-target injury to susceptible garden plants or agricultural crops from pesticides may occur. Some common examples could be, a 2,4-D application drifting upon broadleaf commercial crop, or pesticide contaminated manure introduced into a homeowners garden. Depending on the mode of action of the pesticide, plants may die, or more often be injured or stunted while still allowing harvest. Montana producers and homeowners commonly ask, “Can I market a food commodity if plants are contaminated with an off-label pesticide”?



*(Photo by Brent Sarchet, 2011)*

Pesticide active ingredients generally won't have an EPA tolerance for **desirable** crops which are susceptible to injury from the chemical. Tolerances set by EPA limit the amount of pesticide residues remaining on food at harvest. EPA sets a tolerance for each pesticide based on the potential risks to human health. The standard terminology is that there is a "reasonable certainty of no harm", taking into account dietary and other types of exposure. Safety buffers ensure that tolerance levels are often 100 to 1,000 times less than the amount needed to pose a health risk. You may view established tolerances (Maximum Residue Limits) at <http://www.epa.gov/pesticides/food/viewtols.htm>.

If residues exceed an established tolerance, or if a tolerance is not established, the crop is considered adulterated and can be seized by the U.S. Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), or a state enforcement agency. In other words, harvested crops contaminated by an off-label pesticide and taken to a local elevator or farmers market may be seized due to a lack of an established tolerance.

This usually precipitates the question: “Is it safe to ingest food from a contaminated commodity”? The answer depends on the exact active ingredient which contaminated an individual's crop or garden. Some active ingredients have moderate to high mammalian toxicity (Signal Word: Danger Poison, Danger, Warning), while others have very low mammalian toxicity (Signal Word: Caution). Many pesticide products used in Montana, including glyphosate, picloram, and aminopyralid have very low mammalian toxicity. It would be doubtful that the ingestion of these active ingredients at low levels in plant tissues would cause poisoning to an individual. However, the lack of an established tolerance inhibits the recommendation to ingest any plant materials contaminated with pesticides which don't

have a tolerance on that particular crop. Studies on the chemical's breakdown and synergy with that particular non-target plant are unavailable. Though it may be safe to ingest at certain levels, it is unknown what level of exposure the individual is receiving.

Poisoning is usually the result of a large dose of pesticide being ingested, however it should be noted that children, the elderly, or individuals with autoimmune disorders may be sensitive to much lower doses than the population on average. Mammalian toxicity of various chemicals can be viewed at <http://npic.orst.edu/ingred/specchem.html>.

**For Further Information:** See the MontGuide titled "[Assessing Pesticide Toxicity](#)" or see the [EPA tolerance website](#). If you have questions regarding this article contact the MSU Pesticide Education Program (406-994-5067; [ctharp@montana.edu](mailto:ctharp@montana.edu)).