

GREENING



Q. WILL CONSUMING IDAHO® POTATOES WITH GREEN PATCHES MAKE YOU SICK?

A. No. Green spots or patches on potatoes (known as “greening”) are a natural result of chlorophyll production in the tuber from being exposed to light.¹

FACTS

Greening and glycoalkaloids are naturally occurring in potatoes. Exposure of potatoes to light either in the field, in storage, on grocery store shelves or at home can cause green pigmentation to form on the surface of the potato. This “greening” is due to the formation of chlorophyll, a pigment that is found in many plant foods, including lettuce, spinach and broccoli.¹

Potatoes as typically consumed contain little solanine. The highest levels of glycoalkaloids are typically found in the sprouts, flowers, leaves or other actively growing areas of the tuber which are not the parts of potatoes that people typically consume. Concentrations of glycoalkaloids are higher in immature potatoes and are diluted as the tuber grows and matures.¹ It should also be noted that potato breeding programs have resulted in the commercial release of only potato lines with very low levels of solanine.²

Acceptable limits. The FDA considers the maximum acceptable glycoalkaloid content to be 20-25mg/100g fresh potato weight (or 200-250 parts per million (ppm)). For example, the mean toxicity response in humans for glycoalkaloids is 3mg/kg body weight (range 1-5mg/kg body weight). Assuming that a potato contained glycoalkaloids at the advisory level of 200 ppm, an 80kg (176 lb.) person would have to consume an entire kilogram of the affected areas of a potato in a serving to trigger a toxic response. Also note that potatoes with this high a level of glycoalkaloids would have a bitter, burning taste that would be unpleasant to consume.³

Minimizing glycoalkaloid formation. Strategies can be employed at harvesting and post-harvesting to reduce glycoalkaloid formation in potatoes.⁴

- Store in cool, dark place
- If you see a spot of green on a potato, cut it out and eat the remainder



REFERENCES

1. Woolfe JA. *The Potato in the Human Diet*. Cambridge University Press, Great Brittan. 1987. pp 162-181.
2. University of Nebraska Institute of Agriculture and Natural Resources. “Greening Potatoes: The Problem; The Solution.” Cropwatch. www.cropwatch.unl.edu/potato/greening. Accessed October 10, 2017.
3. Dolan LC, Matulka RA, Burdock GA. “Naturally Occurring Food Toxins.” *Toxins*. 2010;2:2289-2332.
4. Friedman M. “Potato Glycoalkaloids and Metabolites: Roles in the Plant and in the Diet.” *J Agric Food Chem*. 2006;54:8655-8681.