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a24. Some Common Plant Toxins and Antinutrients

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Chemical families of naturally-occurring plant-made toxins found at low levels in many foods that we eat. Effect on humans and animals is based on laboratory tests using toxin concentrations much higher than the concentrations normally found in food.		
Toxin Family	Examples of Occurrence in Plants	Effect on human
Cyanogenic glycosides	Sweet potatoes, stone fruits, lima beans	Gastrointestinal inflammation; inhibition of cellular respiration
Glucosinolates	Rape (canola), mustard, radish, cabbage, peanut, soybean, onion	Goiter; impaired metabolism; reduced iodine uptake; decreased protein digestion
Glycoalkaloids	Potato, tomato	Depressed central nervous system; kidney inflammation; carcinogenic; birth defects; reduced iron uptake
Gossypol	Cottonseed	Reduced iron uptake; spermicidal; carcinogenic
Lectins	Most cereals, soybeans, other beans, potatoes	Intestinal inflammation; decreased nutrient uptake/absorption
Oxalate	Spinach, rhubarb, tomato	Reduces solubility of calcium, iron, and zinc
Phenols	Most fruits and vegetables, cereals, soybean, potato, tea, coffee	Destroys thiamin; raises cholesterol; estrogen-mimic
Coumarins	Celery, parsley, parsnips, figs	Light-activated carcinogens; skin irritation

Antinutrients, although not necessarily toxic per se, are plant compounds which decrease the nutritional value of a plant food, usually by making an essential nutrient unavailable or indigestible when consumed by humans/animals. For example, phytate, a common component of most seeds and cereals, forms a complex with many important minerals, making less of the minerals available.

From the web site: <http://www.geo-pie.cornell.edu/issues/toxins.html>, Genetically Engineered Organisms, Public issues Education Project

This article demonstrates why the key tip in the Pain Relief Diet about consuming a variety of foods is so important. A wide variety of foods helps dilute any natural toxins in the meal.

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