

The use of glyphosate

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Glyphosate is an active ingredient, which is used in most commercial herbicides. It is a white crystalline powder in its initial state. It poisons plants, animals and humans.

Most herbicides, used in agriculture and farms, as well as for the treatment of railways, city sidewalks and roadsides, contain the active ingredient – glyphosate. Glyphosate is one of the most effective herbicides, and that led to its widespread popularity. It can be used as a selective herbicide and herbicide of continuous action. It is especially effective against perennial weeds. It is effective against more than 300 types of weeds (Krieger 2001, p. 1667). Glyphosate was invented in Switzerland in 1950. It entered a global market in 70-s due to the American company “Monsanto” (Krieger 2001, p. 1667). In 2000 the patent on Monsanto’s glyphosate molecule expired.

Since then there are many other preparations with glyphosate. Some other agro-chemical companies like Syngenta, Bayer, Nufarm and Dow AgroScience used herbicides containing glyphosate for the manufacture and sale. To date, the world’s annual production of glyphosate is about 800, 000 tonnes. China produces about half of this amount (Nandula 2010, p. 3).

Glyphosate enters leaves and shoots that are not covered with hardwood bark, through the stomata and pores in the cuticle. The rate of absorption depends on the number of stomata, the density of the wax layer and the thickness of the cuticle (Whitaker 2009, p. 5). Glyphosate is used as a selective and solid herbicide to control annual and perennial weeds. It is active against couch grass, bindweed, mousetrap and other weeds when applied in the growing season.

It has a systemic action and can move through the plant, getting from aerial parts to the roots. It is applied on fields intended for planting corn, vegetable crops, sunflower, canola, castor, soybean, cotton, and perennial grasses for seed, annual flower crops, watermelons, after harvesting on plantations of mint and lavender. It is possible to use glyphosate in the planting of fruit, citrus and vineyard spraying vegetative weed plants in spring or summer (Nandula 2010, 9. 3-9. 6).