

## Monsanto Company

A number of groups and individuals have stated that glyphosate is a leading cause of pesticide poisonings in California. This is very misleading because it implies that glyphosate is responsible for many serious illnesses each year. However, the cited statistics refer to telephone calls to the state reporting system, which rarely involve systemic (internal) poisoning or, indeed, any medical illness at all. The recorded glyphosate cases have primarily been minor and reversible skin and eye irritation.

The California Department of Pesticide Regulation put the glyphosate reports in perspective in its 1994 Pesticide Illness Surveillance Report (California EPA 1996). The report emphasized that when interpreting the reported figures, it is important to consider the number of people exposed and the type of effects observed. While the herbicide glyphosate was identified relatively frequently in the 1996 report, more than 80 percent of the people affected by glyphosate experienced only irritant effects. Of the 515 pesticide-related hospitalizations recorded over the 13 years on file, none was attributed to glyphosate. Surveillance reports for 1996 and later are available on line at the California Pesticide Illness Surveillance Program website (<http://www.cdpr.ca.gov/docs/whs/pisp.htm>).

Glyphosate is the active ingredient in Roundup<sup>1</sup> herbicides, products used by millions of people to control unwanted vegetation in agricultural, industrial and residential settings. Despite widespread use, including use by homeowners, there have been very few reported systemic ill effects relating to glyphosate. California's program for recording pesticide illnesses requires that doctors report any incident suspected of being related to pesticide exposure. Consequently, a pesticide may be listed as related to an ill effect even when there is little or no evidence that the pesticide ingredient is actually causing the effect.

The glyphosate cases reported to the California database from 1982-1997 have been analyzed and the results published in a peer-reviewed journal (Goldstein *et al.*, 2002). During the 1982 – 1997 reporting interval, 815 cases were reported. 628 of these cases involved topical irritant effects on the skin, eyes, or respiratory tract. Of the remaining 187 cases with systemic symptoms, only 47 of these cases were categorized in the database as having a probable or definite relationship to pesticides. Seventeen of these cases resulted from multiple chemical exposures, with no specific attribution to glyphosate, and five additional cases recorded no systemic symptoms. Thus, of the 815 reports, only 22 involved systemic symptoms that were classified as probably related to glyphosate exposure. None of these cases involved ingestion of glyphosate products and the symptoms reported were not specific to a pesticide related illness (nausea, dizziness, etc.). These symptoms are not unique to glyphosate exposure and no consistent pattern of effects was apparent. Based upon animal studies and human experience with use of these products, the symptoms reported for the 22 systemic cases do not appear likely to be related to glyphosate product exposure.

Herbicides containing glyphosate as the active ingredient are important tools that allow farmers to produce abundant, healthy food while stewarding the environment and enable homeowners to maintain healthy and attractive gardens. Schools and communities can also use Roundup herbicides as an important part of an environmentally responsible pest control strategy.

There is a strong consensus among credible scientific bodies that Roundup herbicides, when used according to label directions, do not pose unreasonable risks to human health.

### References:

- California EPA (1996) California Pesticide Illness Surveillance Program Report, 1994. Report HS-1733. Worker Health & Safety Branch, California Environmental Protection Agency, Department of Pesticide Regulation. Sacramento, California.
- Goldstein DA, Acquavella JF, Mannion RM, Farmer DR. (2002) An analysis of glyphosate data from the California Environmental Protection Agency Pesticide Illness Surveillance Program. *Journal of Toxicology: Clinical Toxicology* 40(7): 885-892.

<sup>1</sup> In this Backgrounder, "Roundup" refers to Monsanto's Roundup-branded products with glyphosate as the sole active ingredient.