



**Committee of Independent Research and  
Information on Genetic Engineering**

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### **Press Release CRIIGEN – January 2009**

#### **DIFFERENT ROUNDUP FORMULATIONS LEAD TO EMBRYONIC, UMBILICAL CORD AND PLACENTAL CELL DEATH AND ARE POORLY ASSESSED**

For the first time, the toxicity mechanisms of four different Roundup formulations were studied in human cells. They act at doses where they are not herbicides anymore. The cells were neonatal cells freshly isolated from the umbilical cord, or less sensitive cell lines specially used to measure pollutant toxicity. The various components of these major herbicides were tested because they are among the most common in the world. Their residues are among the major pollutants, and moreover they are authorized as residues contaminating GM foods and feed at the tested levels. As a matter of fact, Roundup formulations are the most common herbicides used with cultivated GMOs. Roundup Ready soya, the main GMO imported in Europe for food and feed, contains Roundup residues. In this research, the formulations were diluted at minimal doses (up to 100 000 times or more) and they programmed cell death in a few hours in a cumulative manner. We also noted membrane and DNA damages, and found that the formulations inhibit cell respiration. In addition, it was shown that the mixture of the components used as Roundup adjuvants amplified the action of the active principle called glyphosate; one of its metabolites may be even more toxic. These effects are greatly underestimated by the legislation, which does not take these phenomena into account, but instead simply sets arbitrary contaminant thresholds in food or feed. The rules apply to glyphosate whatever its formulation may be, this is wrong. The authorizations for using these Roundup herbicides must now clearly be revised, since their toxic effects depend on, and are multiplied by, other compounds used in the mixtures placed on the market; and glyphosate is only one of them. The detailed blood analyses of each mammal which has received this herbicide during regulatory tests before commercial release must be published immediately, since our research points to undesirable effects which are currently masked or hidden from scientific scrutiny.

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“Glyphosate Formulations Induce Apoptosis and Necrosis in Human Umbilical, Embryonic and Placental Cells” by Nora Benachour and Gilles-Eric Séralini.

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