



CONDUCT AND OVERSIGHT OF THE FARM FAMILY EXPOSURE STUDY

The Farm Family Exposure Study was conducted during 2000 and 2001 under the direction of Dr. Jack Mandel, professor of epidemiology at the University of Minnesota. Dr. Mandel is currently the Chair of the Epidemiology Department at the Rollins School of Public Health at Emory University in Atlanta. Dr. Mandel's co-investigator was Dr. Bruce Alexander, an associate professor of epidemiology at the University of Minnesota. The Institutional Review Board (IRB) at the University of Minnesota, which is accredited by the National Institutes of Health, reviewed the study to ensure that best practices for human subjects research were observed.

The protocol was designed with input from industry scientists and an independent advisory committee. The Advisory Committee was chaired by Dr. Harris Pastides, Dean of the University of South Carolina Norman J. Arnold School of Public Health. Other members were Dr. Mark Cullen, professor of medicine at Yale University Medical School; Dr. Richard Fenske, professor of environmental health at the University of Washington; Dr. Keith Solomon, professor of toxicology at the University of Guelph in Canada; Dr. Linda Sheldon, senior scientist at the U.S. Environmental Protection Agency; and Curt Lunchick, an expert in agricultural exposure assessment with Bayer CropSciences.

The University of Minnesota sub-contracted the field data collection to established firms that specialize in data collection for agricultural biomonitoring studies according to Good Laboratory Practices. These firms provided trained personnel to observe and record the activities of the 95 farm families involved in the study and to collect, document, and process their urine samples. These personnel typically had degrees in fields such as agronomy, biology or chemistry and the field directors from these firms had PhDs in chemistry. Urine specimens collected from study participants were composited and shipped to qualified analytic laboratories for analyses. All analyses had a detection limit of 1 part per billion. Blind quality control exchanges were arranged with EPA scientists to verify the analyses of 2,4-D and chlorpyrifos data. The Centers for Disease Control have been asked to verify the glyphosate analysis.

Before the study began, the investigators committed to presenting the results widely at scientific meetings and to publishing the results in peer-reviewed scientific journals. The results of this study have been presented at numerous meetings worldwide, including recent meetings in Washington DC, Vancouver, Barcelona, and Budapest. A number of papers will be submitted for publication over the next few months.

In addition, the investigators have planned collaborative work with investigators from Health Canada, U.S. EPA and National Cancer Institute to augment the research being done by these institutions.

The \$2 million research was funded at the direction of a study task force comprised of epidemiologists, exposure assessors and toxicologists from Bayer, Dow, DuPont, FMC, Monsanto and Syngenta.