

Pilot Study

The purpose of the pilot study was to estimate the rate of herbicide exposure in Benton, Polk and Lincoln Counties as a measure of exposure in western Oregon. These three counties are primarily forested and Lincoln and Benton counties are where the initial concerns about birth defects were raised. For the pilot study, a random sample of 72 births was selected from each county using vital records. An equal number of birth certificates (12) were chosen for each year, 1973-1977, and one was randomly selected from each month. The residences of the 72 births were determined, and for those with rural addresses, the owners of tracts of land within two miles of the residence of the case were sought. Identified landowners were contacted and asked to give spray history occurring from 1 month before conception of the case to 3 months after conception.

Results of Pilot

Thirty rural cases were identified. The original approach to identify exposures was not feasible. There were too many owners within 2.0 miles and the owners had no, or few written records, so they had to depend upon recollection of any spraying, when it occurred, or what was sprayed. It was obvious, from this pilot study, that we could not reliably document herbicide usage by questioning individuals or land owners.

Extension of Pilot

The only definition of herbicide exposure that appeared to be workable was for aerial herbicide spraying near a residence that is documented in some official form. With this definition in mind, we plotted all the sample births on county maps. We plotted the 30 rural births as before, and all the remaining births listed with a city address were plotted as residents within the city limits. We also used computer printouts, generated for the pilot study by the Department of Forestry, to identify any forest land that was sprayed between Jan. 1974 and Jan. 1980. Under Oregon law, all land owners (excluding the U.S. Forest Service and the Bureau of Land Management have to file a proposed spraying plan with the State Department of Forestry. The majority of the births plotted were not near U.S. Forest Service land so the state clearinghouse was a good source of information. We assumed the U.S. Forest Service would furnish data if requested.

We next reviewed the spray data to identify any aerial herbicide spraying that occurred within two miles of any sample birth. Using this admittedly crude estimate, we identified 8 births that had aerial herbicide spraying within 2 miles of their residence during the critical period around conception. There were 2 additional babies that had possible spraying within two miles of their residence. The exact location of spraying was unknown, but spraying occurred in the area. Thus, we identified a maximum of 10 "exposed" infants, for a rate of 4.6%. This "exposure" rate should be applicable to the western areas of Oregon where the vast majority of births occur.

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