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ESTIMATED AO EXPOSURE FROM "RE-ENTRY" CONSIDERATIONS

One of the scenarios for potential exposure of ground troops to AO in Vietnam involves men walking through vegetation which has recently been sprayed. This situation can be assessed using techniques developed by the Environmental Protection Agency for estimating the exposure of farm workers who re-enter pesticide-treated fields.

Over the years, EPA has developed approaches to this "re-entry" problem, based upon data gathered in the field, supplemented by empirical correlations. The most relevant data base has been generated in connection with workers in orchards as they harvest citrus fruit and apples. Using an approach originally published by Dr W. Pependorf of the School of Public Health at the University of California in Berkley, EPA has adapted the "Popendorf correlation" to relate (in a non-linear fashion) the application rate of the pesticide (lbs/acre) and the worker's dermal contact with the "dislogable residues" of the pesticide on the crop.

This general approach was used to estimate the worst case dermal contact of a foot soldier with 2,3,7,8-TCDD residues, using the following assumptions:

- Application rate of AO.....4 lbs/acre
- Contamination level of 2,3,7,8-TCDD.....1 ppm
- No dissipation of residues with time
- Citrus foliage results are applicable
- Popendorf correlation applicable
- 80 kg person, clothed au naturale

The resulting estimated dermal contact (not dermal absorption) is 1 pg/kg-hr.