Appendix P. Ultra Low Volume Spray Drift Approach

In order to estimate the spray drift and application efficiency for ultra low volume (ULV) spray applications of dicofol, two scenarios were modeled in AGDRIFT using the Tier III Aerial scenario; CA citrus (to represent orchard) and CA strawberries (representative of crop uses). The spray material was "oil" and its specific gravity was 0.92 (default in AGDRIFT). A low evaporation rate was assumed and the volatile fraction was kept at a minimum (set to 4%). The spray volume was 5 gal/A (obtained from the label). Surface roughness values were derived from the range of values available in AGDRIFT for orchards and crops. The remaining input parameters in AGDRIFT were kept at their default values (unless otherwise specified in the table below). In order to obtain the level of drift, the toolbox "Deposition Assessment" was utilized. The dimensions of the standard pond were entered in the toolbox, and the Fraction of Applied was obtained. Viewing the Numerical Values screen, the Application Efficiency was obtained. This is the input value utilized in PRZM/EXAMS. **Table P.1** shows the input parameters utilized in AGDRIFT runs.

Table P.1. Input Parameters for AGDDRIFT for Dicofol

Parameter	Value
Aircraft type	Air tractor AT-401, fixed wing
Swath width	60 ft
Wing semispan	24.5 ft
Swath displacement	0 ft
Propeller rpm	2000, propeller rad. 4.5 ft
Fixed wing	1 engine
Flight lines	20
Flight speed	120 mph
Boom height	15 ft
Number of nozzles	42
Vortex decay rate	1.25 mph
Aircraft drag coefficient	0.1
Propeller efficiency	0.8
Ambient pressure	29.91 in Hg
Planform area	294 ft^2
Nozzle spacing (even)	0.78 ft
Wind speed	10 mph
Wind direction	90°, perpendicular to flight path
Surface roughness	0.75 ft (orchard), 0.12 ft (row crop)
Relative humidity	50%
Temperature	86°F
Droplet type	ASE Very Fine
Spray material	Oil
Specific gravity	0.92
Active rate	3 lbs ai/A (orchard), 2 lbs ai/A (row crop)
Nonvolatile rate	4.4 lbs/A (5 gal/A x 0.92 lbs/gal x 0.96)
Spray volume	5 gal/A
Evaporation rate	1 μm^2/°C/sec
Buffer zone	450 ft
Downwind water body width	208.7
Average depth	6.6 ft ~ 2 m

Results of the AGDRIFT runs generated a spray drift fraction of 0.109 and 0.117 for orchards and row crops, respectively. The application efficiency was 0.727 and 0.72 for orchards and row crops, respectively.