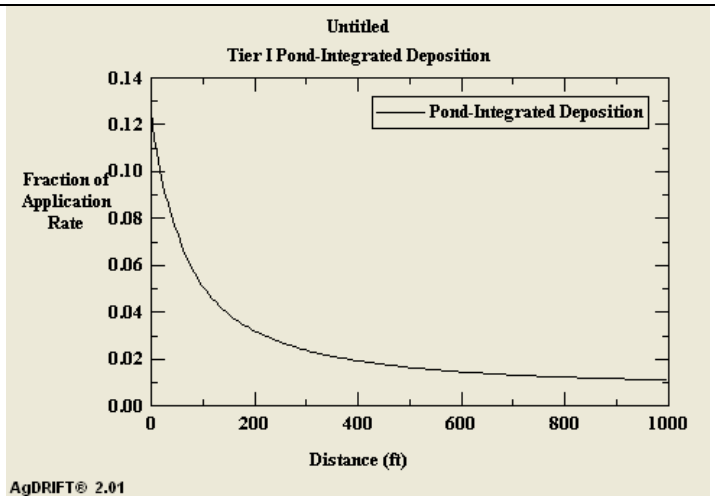
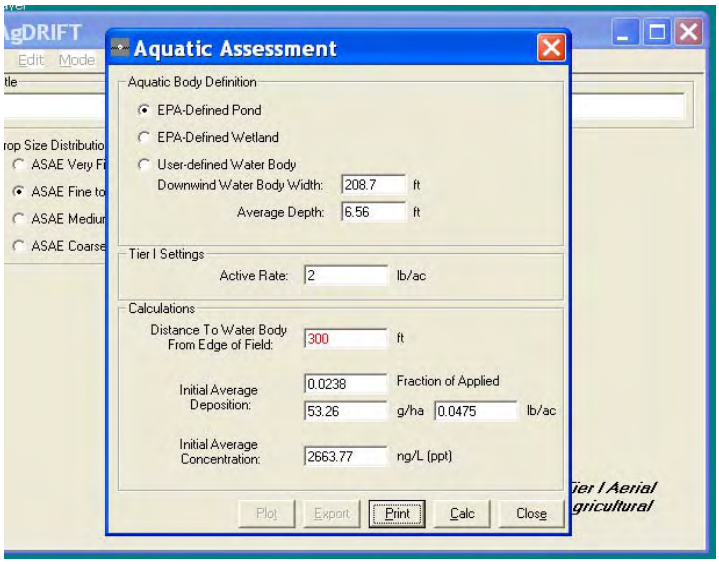
Appendix B AgDrift/AgDisp Modeling

The appendix contains supporting data for AgDrift/AgDisp modeling to obtain drift values for aquatic exposure modeling (Part A) and buffer distances for the possible extent of effected areas beyond the initial area of concern (Part B).

Parts A: AgDrift model estimates for aerial and ground applications

For **aerial application**, AgDRIFT estimated 2.38% drift beyond the 300 ft buffer



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AgDRIFT®  2.01                                                    Page 1


AgDRIFT® Aquatic Assessment

Aquatic Body: EPA-Defined Pond
  Downwind Water Body Width: 208.7 ft
  Average Depth: 6.56 ft

Active Rate:
  Active Rate: 2 lb/ac

Calculations:
  Distance To Water Body From Edge of Field: 300 ft (input)
  Initial Average Deposition: 0.0238 Fraction of Applied
  Initial Average Deposition: 53.26 g/ha
  Initial Average Concentration: 0.0475 lb/ac

Tier: I
RunID:
  AgDRIFT®  2.01
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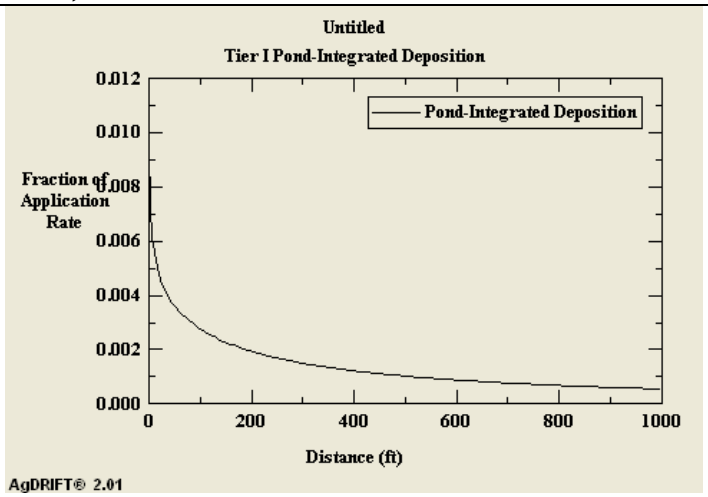
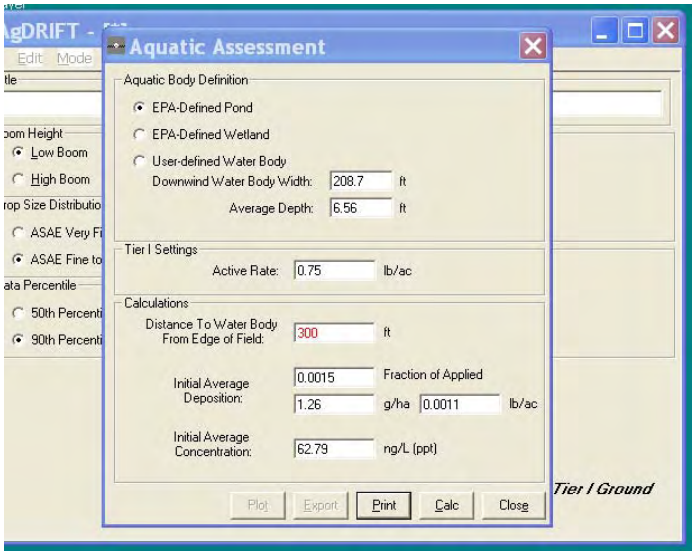
For ground application, the estimate was 0.15%



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AgDRIFT®  2.01                                                    Page 1


AgDRIFT® Aquatic Assessment

Aquatic Body: EPA-Defined Pond
  Downwind Water Body Width: 208.7 ft
  Average Depth: 6.56 ft

Active Rate:
  Active Rate: 0.75 lb/ac

Calculations:
  Distance To Water Body From Edge of Field: 300 ft (input)
  Initial Average Deposition: 0.0015 Fraction of Applied
  Initial Average Deposition: 1.26 g/ha
  Initial Average Concentration: 0.0011 lb/ac

Tier: I
RunID:
  AgDRIFT®  2.01
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Part B: Summary of Input Parameters Used in AgDISP for Estimation of Buffers.

I. Calculation of the initial average deposition (IAD)

(1) Calculation of the fraction of applied (F of A) as shown in **Table G.1**.

Table G.1 "F of A" calculation

Crop	*LOC*	*RQ*	*F of A*
Apples	0.05	2,250	0.00002222
Sweet Corn	0.05	1,350	0.00003704

(2) Using the F of A the initial average deposition (IAD) is calculated as shown in **Table G.2**.

Table G.2 "IAD" calculation

Crop	*Application Rate lb a.i/A*	*F of A*	*IAD*	
			lbm a.i/Acre	*gm a.i./Hectare*
Apples	2.5	0.00002222	**0.00005556**	0.06228
Sweet Corn	1.5	0.00003704	**0.00005556**	0.06228

II. Parameters used in AgDISP modeling:

Application Method: Aerial

Release Height: 10 feet (specified by the label)

Wind Speed: 10 mph (Maximum specified by the label)

ASAE: Medium spray (label specified medium or coarser spray).

Non-volatile Fraction (NVF): This value is calculated as follows: Volume of product applied (3⅓ quarts for apples and 2 quarts for sweet corn)/Volume of finished spray. Six simulations were executed with varied values as will be shown later. As will be shown later, VFF values were different for the different runs due to the fact that the label specified only a minimum for the finished product spray volume (20 gallons for apples and 1 gallon for sweet corn) [1]. It was necessary to explore the possibility of using volumes more than what is recommended (buffer distance is expected to increase with the increase in volume when other factors are kept the same, especially the spray droplet size distribution).

[1] Thionex ® 3EC Label: states that the minimum finished spray volume/Acre= 1 gallons for vegetables and field crops and 20 gallons/A for fruit and nut trees

Active Fraction (AF): This value is calculated as follows: "NVF values" *multiplied by* "Fraction of a.i. in the product". NVF is calculated as shown above while the "Fraction of a.i. in the product" is obtained from the same referenced label.

NVF and AF values used for the six runs are summarized in Table G.3.

Table G.3 "NVF" and "AF" parameters used for the six AgDisp runs with resultant buffers.

Parameter	*Apple*			*Sweet Corn*		
	10 G	*20 G* [1]	*25 G*	*1 G* [1]	*10 G*	*20 G*
IAD	**0.00005556 *lbm a.i/Acre***			**0.00005556 *lbm a.i/Acre***		
AF	0.028	0.014	0.011	0.169	0.017	0.011
NVF	0.083	0.042	0.033	0.500	0.050	0.033
Distance (ft)	9,557	11,266	12,775	3,383	8,284	11,279
Possible Buffer Range (ft)		12,266 to 12,775		3,383 to 11,279		

[1] Label recommended minimum finished spray volume in Gallons (G).

Specific gravity: 1.068

Toolbox selected: Deposition Assessment

Deposition Area Definition: Terrestrial Point

Result obtained: **out of range**, therefore the Gaussian Far-Field Extension was used to calculate the buffers.