**Summary of Water Modeling of Acephate BTM Foliar and the USEPA Standard Pond**

Estimated Environmental Concentrations for Acephate BTM Foliar are presented in Table 1 for the USEPA standard pond with the PAappleSTD\_V2 field scenario. A graphical presentation of the year-to-year peaks is presented in Figure 1. These values were generated with the Pesticide Water Calculator (PWC), Version 1.52. Critical input values for the model are summarized in Tables 2 and 3.

This model estimates that about 0.5% of Acephate BTM Foliar applied to the field eventually reaches the water body. The main mechanism of transport from the field to the water body is by runoff (79.8% of the total transport), followed by spray drift (20.2%) and erosion (0.01%).

In the water body, pesticide dissipates with an effective water column half-life of 7.5 days. (This value does not include dissipation by transport to the benthic region; it includes only processes that result in removal of pesticide from the complete system.) The main source of dissipation in the water column is metabolism (effective average half-life = 7.9 days) followed by hydrolysis (169 days) and volatilization (1.927963E+10 days).

In the benthic region, pesticide dissipates (12.3 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 13 days) followed by hydrolysis (235.3 days). Most of the pesticide in the benthic region (about 72%) is in the pore water rather than sorbed to sediment.

**Table 1. Estimated Environmental Concentrations (ppb) for Acephate BTM Foliar.**

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 18.7 |
| 4-day Avg (1-in-10 yr) | 16.7 |
| 21-day Avg (1-in-10 yr) | 10.5 |
| 60-day Avg (1-in-10 yr) | 4.76 |
| 365-day Avg (1-in-10 yr) | 0.787 |
| Entire Simulation Mean | 0.294 |

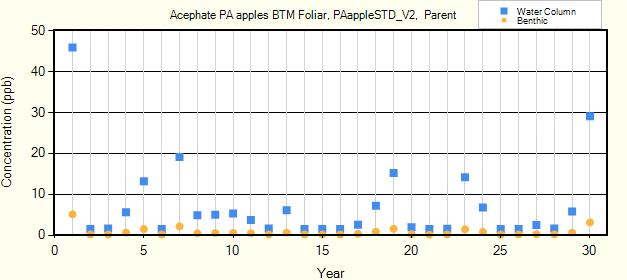
**Table 2. Summary of Model Inputs for Acephate BTM Foliar.**

|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1 |
| Koc (ml/g) | 3.63 |
| Water Half-Life (days) @ 20 °C | 4 |
| Benthic Half-Life (days) @ 20 °C | 6.6 |
| Photolysis Half-Life (days) @ 40 °Lat | 0 |
| Hydrolysis Half-Life (days) | 169 |
| Soil Half-Life (days) @ 20 °C | 11.2 |
| Foliar Half-Life (days) | 8.2 |
| Molecular Weight | 183.16 |
| Vapor Pressure (torr) | 1.7e-6 |
| Solubility (mg/l) | 835000 |
| Henry's Constant | 5.1e-13 |

**Table 3. Application Schedule for Acephate BTM Foliar.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 3.042 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



**Summary of Water Modeling of Acephate BTM Foliar and the USEPA Standard Reservoir**

Estimated Environmental Concentrations for Acephate BTM Foliar are presented in Table 1 for the USEPA standard reservoir with the PAappleSTD\_V2 field scenario. A graphical presentation of the year-to-year peaks is presented in Figure 1. These values were generated with the Pesticide Water Calculator (PWC), Version 1.52. Critical input values for the model are summarized in Tables 2 and 3.

This model estimates that about 0.43% of Acephate BTM Foliar applied to the field eventually reaches the water body. The main mechanism of transport from the field to the water body is by runoff (92.9% of the total transport), followed by spray drift (7.13%) and erosion (0.01%).

In the water body, pesticide dissipates with an effective water column half-life of 7.1 days. (This value does not include dissipation by transport to the benthic region; it includes only processes that result in removal of pesticide from the complete system.) The main source of dissipation in the water column is metabolism (effective average half-life = 7.9 days) followed by washout (138.5 days), hydrolysis (169 days), and volatilization (2.641309E+10 days).

In the benthic region, pesticide dissipates (12.3 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 13 days) followed by hydrolysis (235.3 days). Most of the pesticide in the benthic region (about 72%) is in the pore water rather than sorbed to sediment.

**Table 1. Estimated Environmental Concentrations (ppb) for Acephate BTM Foliar.**

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 42.7 |
| 4-day Avg (1-in-10 yr) | 37.8 |
| 21-day Avg (1-in-10 yr) | 23.0 |
| 60-day Avg (1-in-10 yr) | 10.1 |
| 365-day Avg (1-in-10 yr) | 1.67 |
| Entire Simulation Mean | 0.569 |

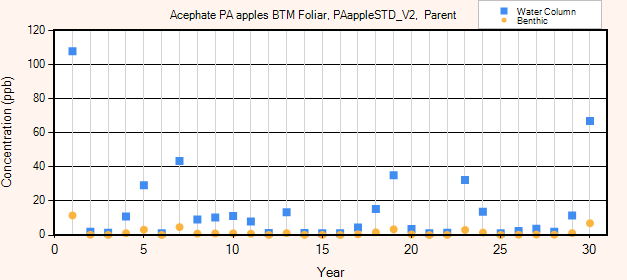
**Table 2. Summary of Model Inputs for Acephate BTM Foliar.**

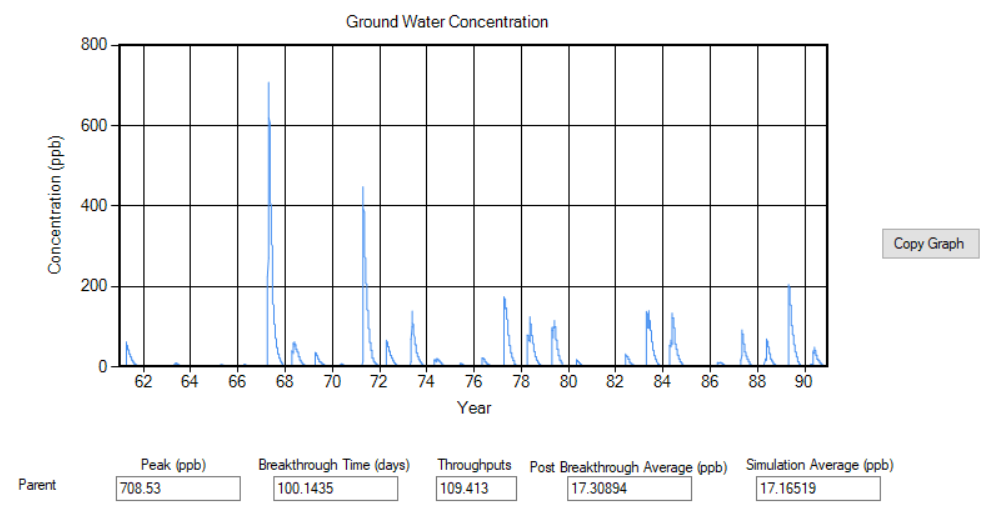
|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1.0 |
| Koc (ml/g) | 3.63 |
| Water Half-Life (days) @ 20 °C | 4 |
| Benthic Half-Life (days) @ 20 °C | 6.6 |
| Photolysis Half-Life (days) @ 40 °Lat | 0 |
| Hydrolysis Half-Life (days) | 169 |
| Soil Half-Life (days) @ 20 °C | 11.2 |
| Foliar Half-Life (days) | 8.2 |
| Molecular Weight | 183.16 |
| Vapor Pressure (torr) | 1.7e-6 |
| Solubility (mg/l) | 835000 |
| Henry's Constant | 5.1e-13 |

**Table 3. Application Schedule for Acephate BTM Foliar.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 3.042 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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