**Summary of Water Modeling of Diflubenzuron BTM and the USEPA Standard Pond**

Estimated Environmental Concentrations for Diflubenzuron BTM 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 0.2% of Diflubenzuron BTM applied to the field eventually reaches the water body. The main mechanism of transport from the field to the water body is by spray drift (50.1% of the total transport), followed by runoff (31.6%) and erosion (18.3%).

In the water body, pesticide dissipates with an effective water column half-life of 50.8 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 = 51.1 days) followed by photolysis (11671.2 days) and volatilization (1.084183E+09 days).

In the benthic region, pesticide dissipates slowly (66.8 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 66.8 days). The vast majority of the pesticide in the benthic region (99.69%) is sorbed to sediment rather than in the pore water.

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

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 0.126 |
| 4-day Avg (1-in-10 yr) | 0.110 |
| 21-day Avg (1-in-10 yr) | 0.696E-01 |
| 60-day Avg (1-in-10 yr) | 0.410E-01 |
| 365-day Avg (1-in-10 yr) | 0.948E-02 |
| Entire Simulation Mean | 0.418E-02 |

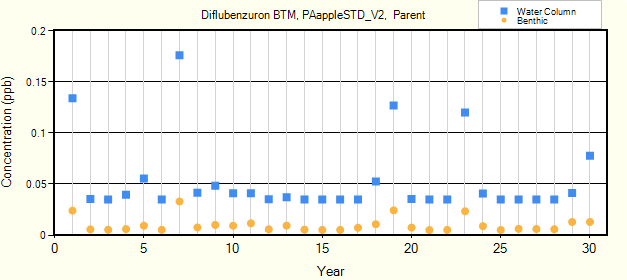
**Table 2. Summary of Model Inputs for Diflubenzuron BTM.**

|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1 |
| Koc (ml/g) | 3020 |
| Water Half-Life (days) @ 20 °C | 26 |
| Benthic Half-Life (days) @ 20 °C | 34 |
| Photolysis Half-Life (days) @ 40 °Lat | 80 |
| Hydrolysis Half-Life (days) | 0 |
| Soil Half-Life (days) @ 20 °C | 6.2 |
| Foliar Half-Life (days) | 14.2 |
| Molecular Weight | 310.7 |
| Vapor Pressure (torr) | 1.2e-4 |
| Solubility (mg/l) | 0.08 |
| Henry's Constant | 1.19e-11 |

**Table 3. Application Schedule for Diflubenzuron BTM.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.070 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



**Summary of Water Modeling of Diflubenzuron BTM and the USEPA Standard Reservoir**

Estimated Environmental Concentrations for Diflubenzuron BTM 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 0.13% of Diflubenzuron BTM applied to the field eventually reaches the water body. The main mechanism of transport from the field to the water body is by runoff (48.7% of the total transport), followed by erosion (27.9%) and spray drift (23.5%).

In the water body, pesticide dissipates with an effective water column half-life of 37.2 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 = 51.1 days) followed by washout (138.5 days), photolysis (15989.6 days), and volatilization (1.485331E+09 days).

In the benthic region, pesticide dissipates slowly (66.8 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 66.8 days). The vast majority of the pesticide in the benthic region (99.69%) is sorbed to sediment rather than in the pore water.

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

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 0.267 |
| 4-day Avg (1-in-10 yr) | 0.238 |
| 21-day Avg (1-in-10 yr) | 0.161 |
| 60-day Avg (1-in-10 yr) | 0.947E-01 |
| 365-day Avg (1-in-10 yr) | 0.207E-01 |
| Entire Simulation Mean | 0.679E-02 |

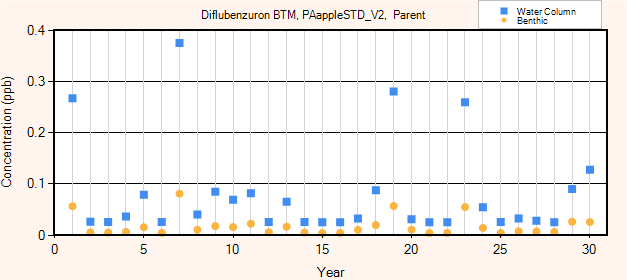
**Table 2. Summary of Model Inputs for Diflubenzuron BTM.**

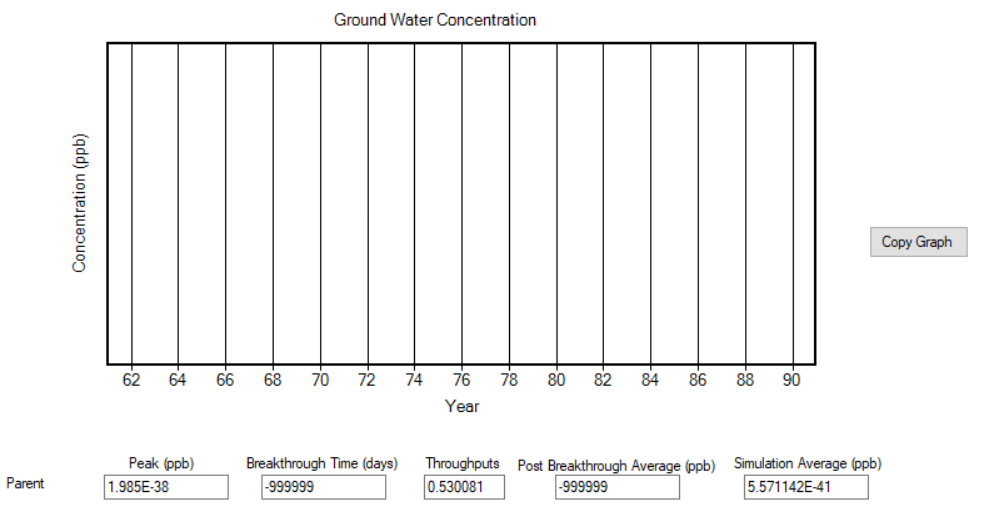
|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1.0 |
| Koc (ml/g) | 3020 |
| Water Half-Life (days) @ 20 °C | 26 |
| Benthic Half-Life (days) @ 20 °C | 34 |
| Photolysis Half-Life (days) @ 40 °Lat | 80 |
| Hydrolysis Half-Life (days) | 0 |
| Soil Half-Life (days) @ 20 °C | 6.2 |
| Foliar Half-Life (days) | 14.2 |
| Molecular Weight | 310.7 |
| Vapor Pressure (torr) | 1.2e-4 |
| Solubility (mg/l) | 0.08 |
| Henry's Constant | 1.19e-11 |

**Table 3. Application Schedule for Diflubenzuron BTM.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.070 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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