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

Estimated Environmental Concentrations for Cyantraniliprole 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 0.52% of Cyantraniliprole 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 (79.5% of the total transport), followed by spray drift (19.3%) and erosion (1.2%).

In the water body, pesticide dissipates with an effective water column half-life of 13.6 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 hydrolysis (effective average half-life = 31 days) followed by photolysis (47.8 days), metabolism (49.3 days), and volatilization (9.310203E+15 days).

In the benthic region, pesticide dissipates (23.1 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 23.6 days) followed by hydrolysis (1249.7 days). The vast majority of the pesticide in the benthic region (97.52%) is sorbed to sediment rather than in the pore water.

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

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 3.03 |
| 4-day Avg (1-in-10 yr) | 2.70 |
| 21-day Avg (1-in-10 yr) | 1.75 |
| 60-day Avg (1-in-10 yr) | 0.863 |
| 365-day Avg (1-in-10 yr) | 0.149 |
| Entire Simulation Mean | 0.525E-01 |

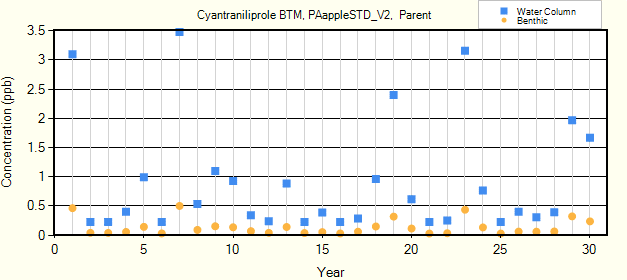
**Table 2. Summary of Model Inputs for Cyantraniliprole BTM.**

|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1 |
| Koc (ml/g) | 364 |
| Water Half-Life (days) @ 20 °C | 25.1 |
| Benthic Half-Life (days) @ 20 °C | 12 |
| Photolysis Half-Life (days) @ 40 °Lat | 0.33 |
| Hydrolysis Half-Life (days) | 31 |
| Soil Half-Life (days) @ 20 °C | 89.4 |
| Foliar Half-Life (days) | 3.9 |
| Molecular Weight | 473.72 |
| Vapor Pressure (torr) | 3.85e-17 |
| Solubility (mg/l) | 14.2 |
| Henry's Constant | 1.7e-18 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.448 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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

Estimated Environmental Concentrations for Cyantraniliprole 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 0.45% of Cyantraniliprole 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 (91.9% of the total transport), followed by spray drift (6.78%) and erosion (1.37%).

In the water body, pesticide dissipates with an effective water column half-life of 13.3 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 hydrolysis (effective average half-life = 31 days) followed by metabolism (49.3 days), photolysis (65.5 days), washout (138.5 days), and volatilization (1.275498E+16 days).

In the benthic region, pesticide dissipates (23.1 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 23.6 days) followed by hydrolysis (1249.7 days). The vast majority of the pesticide in the benthic region (97.52%) is sorbed to sediment rather than in the pore water.

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

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 6.94 |
| 4-day Avg (1-in-10 yr) | 6.22 |
| 21-day Avg (1-in-10 yr) | 4.09 |
| 60-day Avg (1-in-10 yr) | 2.03 |
| 365-day Avg (1-in-10 yr) | 0.350 |
| Entire Simulation Mean | 0.112 |

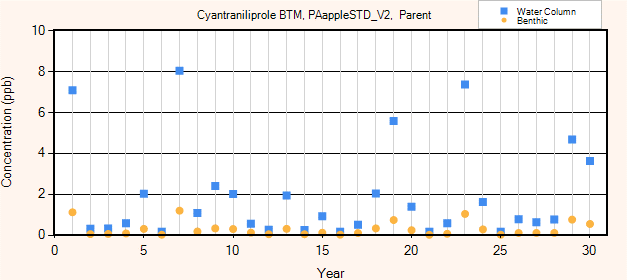
**Table 2. Summary of Model Inputs for Cyantraniliprole BTM.**

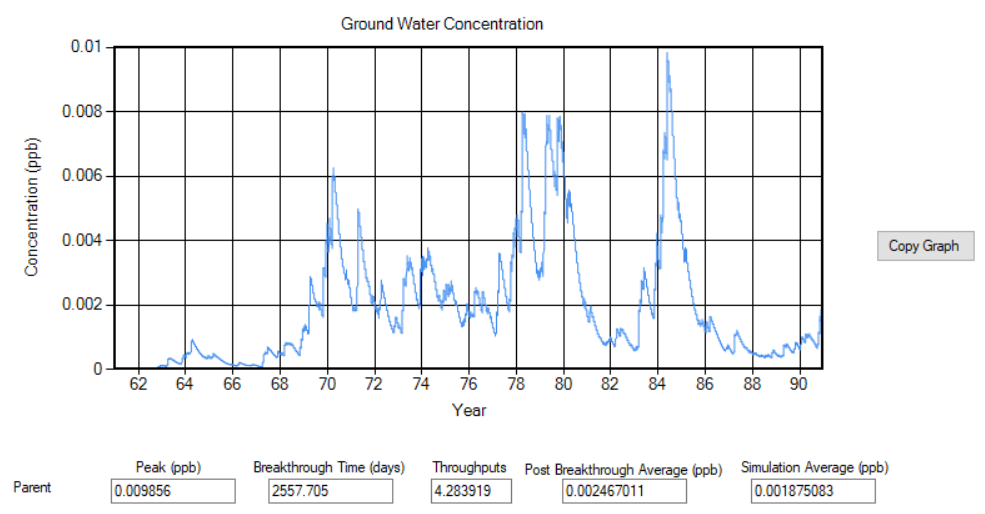
|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1.0 |
| Koc (ml/g) | 364 |
| Water Half-Life (days) @ 20 °C | 25.1 |
| Benthic Half-Life (days) @ 20 °C | 12 |
| Photolysis Half-Life (days) @ 40 °Lat | 0.33 |
| Hydrolysis Half-Life (days) | 31 |
| Soil Half-Life (days) @ 20 °C | 89.4 |
| Foliar Half-Life (days) | 3.9 |
| Molecular Weight | 473.72 |
| Vapor Pressure (torr) | 3.85e-17 |
| Solubility (mg/l) | 14.2 |
| Henry's Constant | 1.7e-18 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.448 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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