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

Estimated Environmental Concentrations for Clothianidin 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 0.61% of Clothianidin 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 (83.5% of the total transport), followed by spray drift (16.4%) and erosion (0.06%).

In the water body, pesticide dissipates with an effective water column half-life of 305.7 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 = 358.2 days) followed by photolysis (2085.4 days) and volatilization (3.958949E+08 days).

In the benthic region, pesticide dissipates (53.0 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 53 days). Most of the pesticide in the benthic region (65%) is sorbed to sediment rather than in the pore water.

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

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 4.49 |
| 4-day Avg (1-in-10 yr) | 4.47 |
| 21-day Avg (1-in-10 yr) | 4.38 |
| 60-day Avg (1-in-10 yr) | 4.14 |
| 365-day Avg (1-in-10 yr) | 2.40 |
| Entire Simulation Mean | 1.29 |

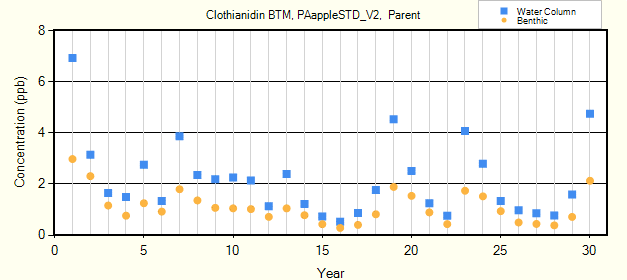
**Table 2. Summary of Model Inputs for Clothianidin BTM.**

|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1 |
| Koc (ml/g) | 17.1 |
| Water Half-Life (days) @ 20 °C | 182.4 |
| Benthic Half-Life (days) @ 20 °C | 27 |
| Photolysis Half-Life (days) @ 40 °Lat | 14.4 |
| Hydrolysis Half-Life (days) | 0 |
| Soil Half-Life (days) @ 20 °C | 1155 |
| Foliar Half-Life (days) | 16.6 |
| Molecular Weight | 249.7 |
| Vapor Pressure (torr) | 3.8e-11 |
| Solubility (mg/l) | 0.327 |
| Henry's Constant | 2.9e-11 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.453 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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

Estimated Environmental Concentrations for Clothianidin 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 0.54% of Clothianidin 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 (94.3% of the total transport), followed by spray drift (5.64%) and erosion (0.07%).

In the water body, pesticide dissipates with an effective water column half-life of 96.5 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 washout (effective average half-life = 138.5 days) followed by metabolism (358.2 days), photolysis (2856.9 days), and volatilization (5.42376E+08 days).

In the benthic region, pesticide dissipates (53.0 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 53 days). Most of the pesticide in the benthic region (65%) is sorbed to sediment rather than in the pore water.

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

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 8.96 |
| 4-day Avg (1-in-10 yr) | 8.84 |
| 21-day Avg (1-in-10 yr) | 8.32 |
| 60-day Avg (1-in-10 yr) | 7.21 |
| 365-day Avg (1-in-10 yr) | 2.71 |
| Entire Simulation Mean | 1.01 |

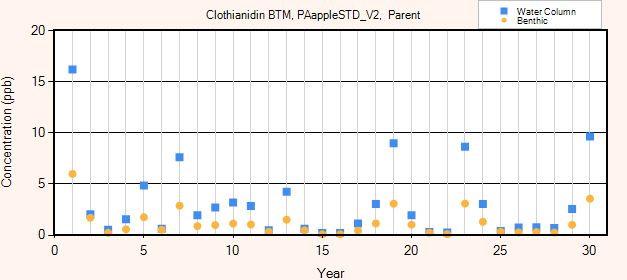
**Table 2. Summary of Model Inputs for Clothianidin BTM.**

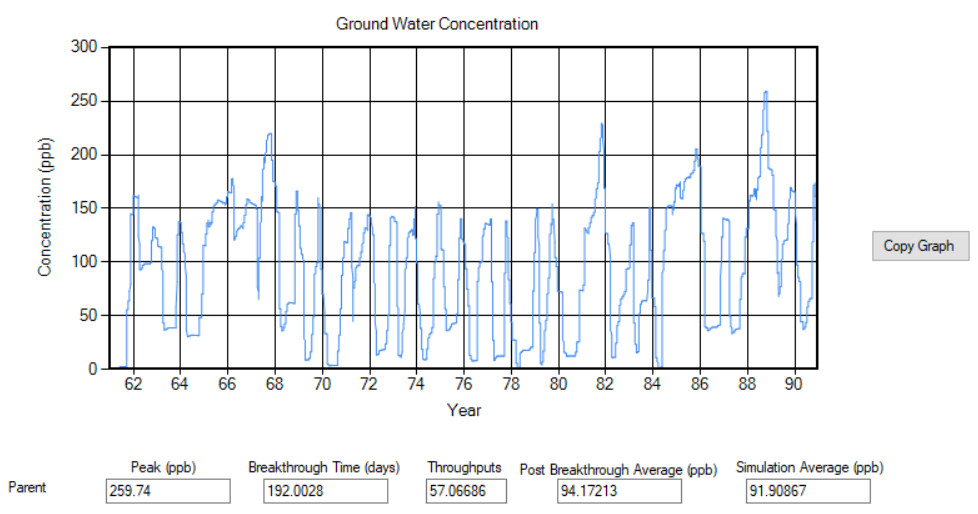
|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1.0 |
| Koc (ml/g) | 17.1 |
| Water Half-Life (days) @ 20 °C | 182.4 |
| Benthic Half-Life (days) @ 20 °C | 27 |
| Photolysis Half-Life (days) @ 40 °Lat | 14.4 |
| Hydrolysis Half-Life (days) | 0 |
| Soil Half-Life (days) @ 20 °C | 1155 |
| Foliar Half-Life (days) | 16.6 |
| Molecular Weight | 249.7 |
| Vapor Pressure (torr) | 3.8e-11 |
| Solubility (mg/l) | 0.327 |
| Henry's Constant | 2.9e-11 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.453 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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