CLUTCH™ 50 WDG INSECTICIDE Always comes through.™

Tree Fruit & Grapes – Frequently Asked Questions

1. **How is Clutch™ 50 WDG Insecticide different from other neonicotinoid insecticides?**
   The active ingredient in *Clutch* is clothianidin, a 3rd generation neonicotinoid. Clothianidin has longer residual activity and less water solubility than other neonicotinoids, such as thiamethoxam. This decreases the potential and risk of leaching in the soil profile. It also means *Clutch* has superior rain-fastness. And clothianidin has faster movement within the leaf's tissue.

2. **How does *Clutch* move in the plant? How long does it take to start moving?**
   Clutch has local translaminar and systemic movement following a foliar spray. Results show translaminar movement in 30 minutes after application. *Clutch* also moves through the xylem of the plant when applied to soil. As expected, actively growing plants tend to move *Clutch* faster and more efficiently.

3. **Does *Clutch* break down in sunlight?**
   Yes, like many other insecticides, clothianidin is affected by sunlight.

4. **What is the rain fastness for *Clutch*?**
   Extremely good. Approximately 3 hours (based on U.S. experience – not on Canadian label).

5. **Can *Clutch* be tank mixed or mixed with fertilizers, insecticides or herbicides?**
   Based on available data, there is no indication of antagonism with commonly used insecticides or with fungicides. However, since it is not possible to test all possible mixtures, the user should pretest to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with *Clutch*. There have been indications of incompatibility with some fertilizer mixes and these are being further evaluated. We recommend conducting a jar test for compatibility. Caution in mixing is advised until additional information is available.

6. **What is the mixing order for a WDG formulation in a tank mix? (Does *Clutch* go like a WP or a liquid formulation?)**
   As with most pesticides, you should add ingredients for a tank mix in the following order: water, adjuvants (e.g., defoaming agents), dry products such as *Clutch* 50 WDG, liquids, then surfactants.

7. **Are there any adjuvant restrictions?**
   Clutch is not labeled for use with adjuvants. However, U.S. experience has shown that clothianidin is compatible with adjuvants used for the neonicotinoid insecticide group.

8. **Can I leave *Clutch* in the tank over night?**
   No.

9. **How does pH affect *Clutch*?**

Water pH could affect clothianidin's performance if it is less than 5.5 or higher than 8.5.

10. How long does *Clutch* control key pests when applied as a foliar treatment?

Depending on the rate used by the grower, *Clutch* can provide from 10 to 14 days of residual control.

11. How does *Clutch*'s mode of action compare with other neonicotinoids?

Clothianidin has the same mode of action of those products in the neonicotinoid group (IRAC MOA Group 4A).

12. What are the risks of cross-resistance with other neonicotinoids such as imidacloprid, thiamethoxam and acetamiprid?

Cross-resistance development among insecticides that have the same mode of action and similar sites of action should always be considered. Efforts to minimize resistance development should be used.

13. What other crops are already registered or in the process of being registered?

We are in the process of developing *Clutch* on numerous crops, including fruits and vegetables. *Clutch* is registered for use in grapes, pome fruit, and stone fruit.

14. How does *Clutch* affect bees?

Clutch is acutely toxic to bees. It is labeled to minimize harm to the environment, including beneficial insects such as bees.

15. What is a 3rd generation neonicotinoid?

Third generation neonicotinoids are the latest innovation in this important class of insecticides. New neonicotinoids have unique physical and chemical properties that are different from older neonicotinoids. Clothianidin was first developed in 2001–2002.