

Break the Insecticide Resistance Cycle

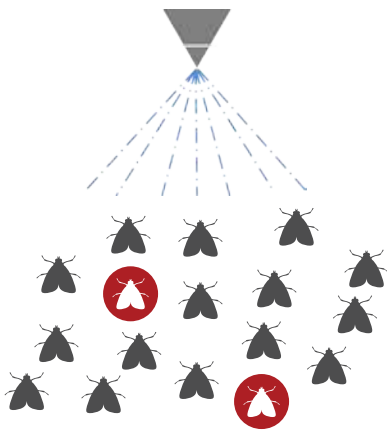
Adding DiPel® DF Biological Insecticide Dry Flowable⁺ to your Lepidopterous larvae (worm) control program breaks the resistance cycle, while also providing excellent control for greater return on investment.

Group 28 chemistries like Chlorantraniliprole are effective but can be costly and resistant populations have begun to develop (Update on DBM Diamide Resistance From Thailand: Causal Factors and Learnings¹). Rotating *DiPel* DF with other classes of chemistries promotes good resistance management practices that helps ensure other currently used modes of action continue to work efficiently.

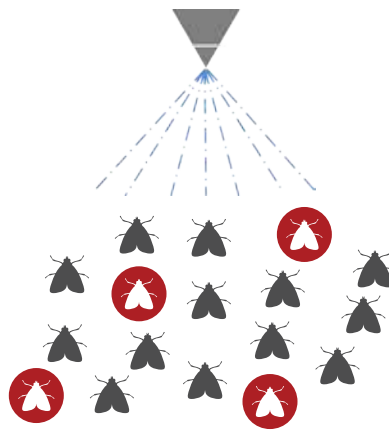
How Insects Develop Resistance

Insects can be highly susceptible to developing resistance to insecticides when one class of insecticide is used exclusively and repeatedly. Surviving insects are left to form future resistant generations. Over the course of multiple generations and sprays, the insect populations move from predominately susceptible to predominately resistant, as shown in the illustrations below.

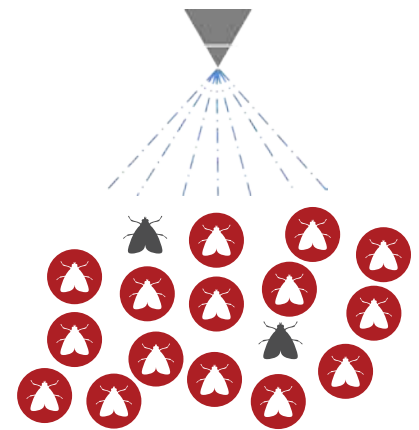
By adding *DiPel* DF to your Lepidoptera control program the cycle is broken so that not only are the Lepidoptera controlled, but the effectiveness of conventional insecticides is maintained.



Initial insecticide application with minimal resistant pests



After initial application, surviving pests multiply and pass on the resistance trait to their offspring and applications of the same insecticide are less effective



If the same class of insecticide is used repeatedly and exclusively, the majority of the population can become resistant



Controlled Pests



Resistant Pests

DiPel DF—Excellent Choice for Lepidoptera Control Programs

- ▶ Economical control of Lepidopteran pests
- ▶ No harvest residue or MRL concerns because *DiPel* DF is exempt from tolerance
- ▶ Great rotational partner to reduce the potential of Lepidoptera developing resistance to insecticides with other modes of action

1. Sukonthabhirom, S. “Update on DBM Diamide Resistance from Thailand: Causal Factors and Learnings.” *Proceedings of The Sixth International Workshop on Management of the Diamondback Moth and Other Crucifer Insect Pests*. Srinivasan, R.; Shelton A.M.; Collins H.L. AVRDC – The World Vegetable Center, 2011, pp. 202–212.



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***DiPel® DF Biological Insecticide Dry Flowable is NOP compliant and OMRI Listed for organic production.**



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