



Simply The Best Balanced Attack Against Your Lepidopteran Pests

What makes DiPel® DF Biological Insecticide and XenTari® DF Biological Insecticide superior products?

- The right MIX of toxins
- Superior LEVELS of the most effective *Bt* toxin proteins



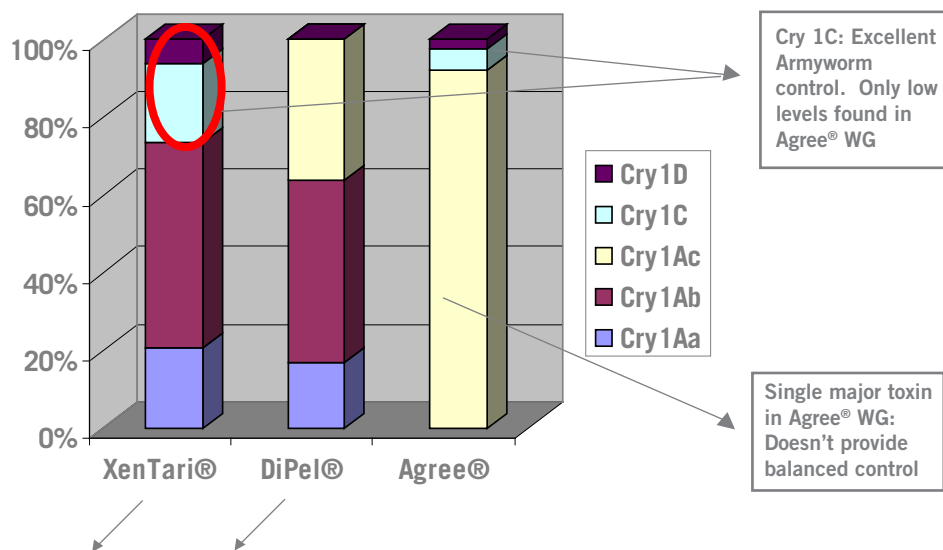
Pest sensitivity to Cry toxin proteins varies significantly.

Pest	Cry1Aa	Cry1Ab	Cry1Ac	Cry1C	Cry1D	Cry2A
Armyworm species <i>Spodoptera</i> spp.	+	+	-	++	+	+
Diamondback moth <i>Plutella</i> spp.	++	++	++	++	++	-
Cotton Bollworm <i>Helicoverpa zea</i>	-	+	++	-	-	+
Cabbage Looper <i>Trichoplusia ni</i>	+	+	++	+	+	++

++ Highly active + Active - Low activity

A good toxin blend is important for activity

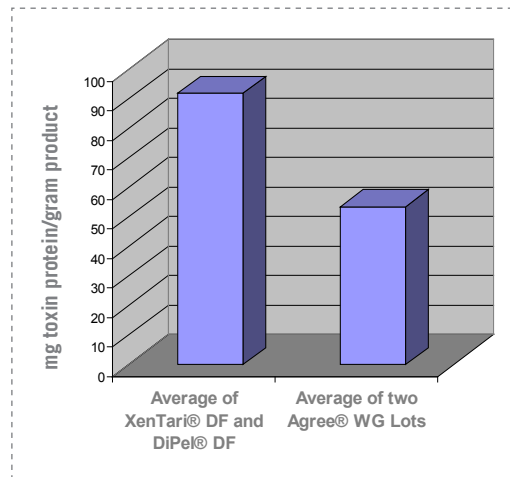
- Two main *Bt* toxin families affect lepidopteran pests: Cry1 and Cry2.
- The patented *Bt aizawai* strain found in XenTari® DF has a balanced mix of Cry1 toxin proteins.
- The *Bt kurstaki* strain found in DiPel® DF has a balanced mix of Cry1 and Cry2 toxin proteins.
- Products like the Agree® WG Biological Insecticide transconjugant depend on a single Cry1Ac protein. The Agree® WG transconjugant contains very low levels of other toxins needed to control tough armyworm pests.
- Pest resistance can develop more quickly when depending on a single toxin protein from a single product applied continuously.



XenTari® DF and DiPel® DF insecticides provide highly varied Cry1 toxin profiles.



DiPel® DF and XenTari® DF Biological Insecticides deliver more *Bt* toxin proteins.



DiPel® DF and XenTari® DF deliver more *Bt* toxins and a greater range of toxin proteins.

					Toxin delivered to the field (1 kg product/Ha)		
Sensitive Species	Diamondback Moth	Cotton Bollworm	Army worms	Cabbage looper	DiPel® DF (oz toxin protein/Ac)	XenTari® DF (oz toxin protein/Ac)	Agree® WG (oz toxin protein/Ac)
Cry1Aa					0.19	0.23	–
Cry1Ab					0.53	0.59	–
Cry1Ac					0.41	–	0.70
Cry1C					–	0.22	0.04
Cry1D					–	0.07	0.02
Cry2A					0.36	–	–

**DiPel® DF and XenTari® DF:
Excellent Biocontrol Choices for Lepidopteran Pests.**

- * DiPel® DF and XenTari® DF have a balanced toxin profile for broader pest control.
- * Agree® WG has a single major toxin protein (Cry1Ac) with more restrictive insect control and higher potential for resistance.
- * DiPel® DF and XenTari® DF are better products for IPM programs that incorporate resistance management and maintenance of beneficial predators and parasites.
- * Cry1Ac does not work well on hard to control armyworm (*Spodoptera*) pests.
- * *Bt* found in DiPel® DF and XenTari® DF are natural strains, Agree® WG is based on a transconjugant strain formed in the lab.
- * DiPel® DF and XenTari® DF provide more toxins per gram of product.
- * DiPel® DF and XenTari® DF are excellent in a rotation program to reduce potential of resistance.

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