

## New Zealand Kiwifruit Would Not Meet Export Standards without Insecticide Sprays

*International Pesticide Benefits Case Study No. 6, August 2011*

*Leonard Gianessi and Ashley Williams*

New Zealand accounts for 33% of the world's trade in kiwifruit, exporting approximately \$650 million (\$450 million U.S.) annually. Kiwifruit production in New Zealand is entirely oriented toward the export market, producing 500 million pounds of fruit each year. New Zealand's domestic kiwifruit market is small relative to their production and is flooded with fruit that do not meet the size and appearance standards necessary for export [1].

New Zealand's kiwifruit are assaulted by two major pest groups: armored scales and leaf roller caterpillars. Armored scales cause little or no damage; their pest status is largely due to quarantine regulations. The presence of armored scales in a kiwifruit shipment can cause rejection of an orchard's entire crop. Leaf rollers physically damage kiwifruit through feeding. In unsprayed orchards the portions of fruit with caterpillar chewing can exceed 50% [2]. New Zealand growers are advised to make 3 to 4 dormant season insecticide treatments if armored scales are present prior to the growing season. During the growing season, it is recommended that growers spray microbial insecticides to kill leaf rollers and oils to smother scales. In addition to their insecticide use, New Zealand kiwifruit growers spray hydrogen cyanamide, a plant growth regulator, on dormant vines to induce uniform flowering and increase the percentage of fruit that will grow large enough to meet export standards.

In the early days when it was only a minor fruit crop supplying the New Zealand market, no sprays were applied. There are still a few small growers who do not spray at all, but their fruit is seriously damaged by leaf rollers. Such growers are not able to export kiwifruit as fresh fruit [4].

### References

1. Steven, D. 1999. Integrated and Organic production of kiwifruit. *Proceedings of the 4<sup>th</sup> International Kiwifruit Symposium*. Retamales, J., et al., (Eds). Acta Horticulturae 498, ISHS.
2. McKenna, C.E., P.S. Stevens, and D. Stevens, 1995. A new *bacillus thuringiensis* product for use on kiwifruit. *Proceedings of the 48<sup>th</sup> New Zealand Plant Protection Conference*. p. 135.
3. Sale, P.R. 1980. The history of pest and disease control in kiwifruit. *Proceedings of the 33<sup>rd</sup> New Zealand Weed and Pest Control Conference*. p. 110.



Kiwifruit from New Zealand



New Zealand Kiwifruit Orchard



Leafroller Damage to Kiwifruit



Scale Colony on Kiwifruit Cane