



Product Use Guide

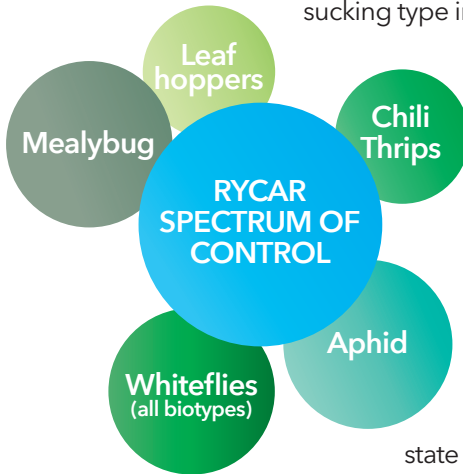


RYCAR[®]
Insecticide



The Next Generation

Rycar Insecticide is a truly unique chemistry. So unique, the Insecticide Resistance Action Committee (IRAC) has yet to determine a new chemical group for Rycar and has classified it as UN (unknown). Through extensive university and IR-4 testing, Rycar has shown to be extremely safe to the numerous plant species tested and just as devastating to piercing-sucking type insects such as; whiteflies (all biotypes), aphids, leafhoppers and mealybugs.



One of the biggest features of Rycar's unique chemistry comes as a completely new alternative to the ever growing resistant chemistries. In fact, Rycar has shown great activity to pests that are resistant to pyrethroids, carbamates, organophosphates and neonicotinoids. Consequently, Rycar provides the basis for a strong, sound IPM program.

How Rycar Works

Target pests exposed to Rycar via contact or ingestion, stop feeding within 2 hours. Rycar's behavior modifying effect immediately sends the insects into a disoriented state (ataxia) where they are unable to eat and struggle to fly and crawl normally.

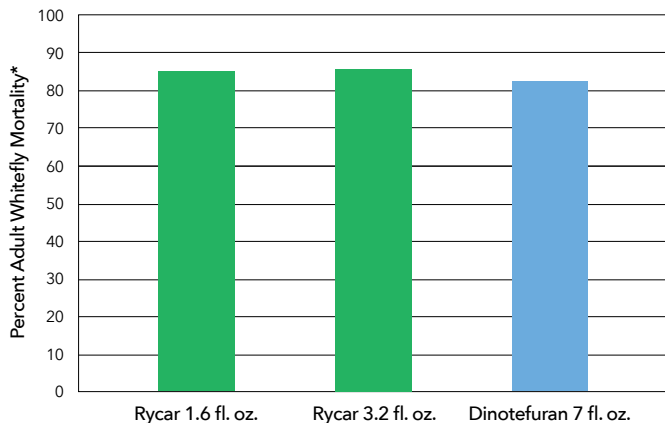
Mortality of the target insect follows within 48 hours. You can sleep at ease, knowing those critters are no longer eating away at your profits!

Rycar's fast acting behavior modification not only prevents further crop damage due to the stop-feed, but the immediate impact also stops the pests from traveling from plant to plant which significantly reduces vector-virus transmission. As vector-virus transmission continues to trouble more and more growers, Rycar becomes an irreplaceable tool.

Rycar Facts

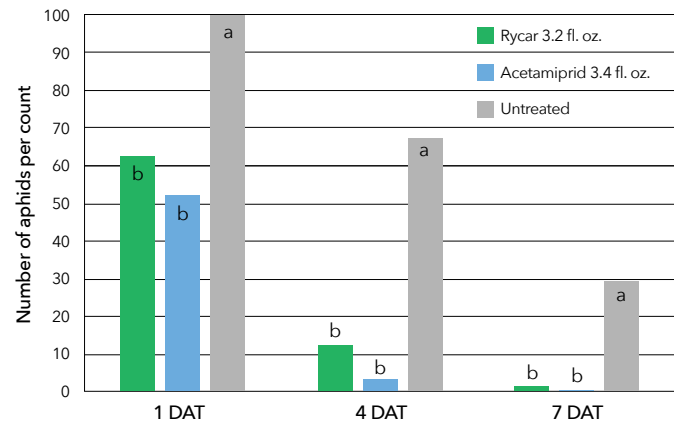
Use Sites	Greenhouses
Formulation	20% Suspension Concentrate
Active Ingredient	Pyrifluquinazon
Mode of Action (IRAC Code)	Unknown (UN)
Restricted-Entry Interval (REI)	12 hours
Signal Word	Caution
Packaging	8 fl. oz. container

Adult whiteflies are easily controlled for up to 3 weeks with Rycar, even when compared with a systemic neonicotinoid insecticide.



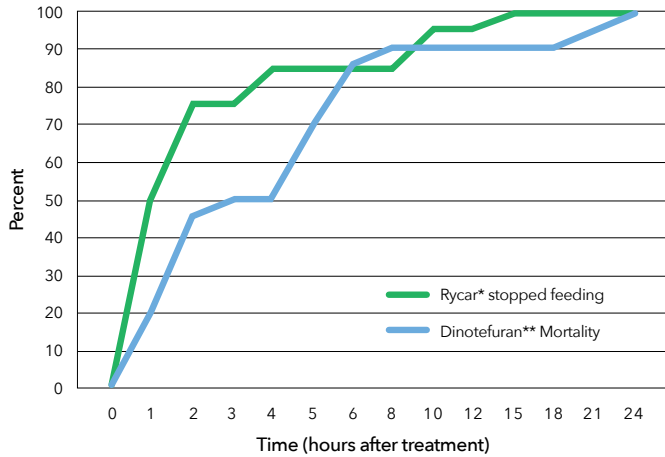
*Adult silverleaf whiteflies on cantelope under field conditions. Mortality reported was evaluated 19 days after treatment.
Nichino America, 2013

Rycar provides similar efficacy as acetamiprid for aphid control 7 Days After Treatment (DAT) with some reduction in population as early as 1 DAT



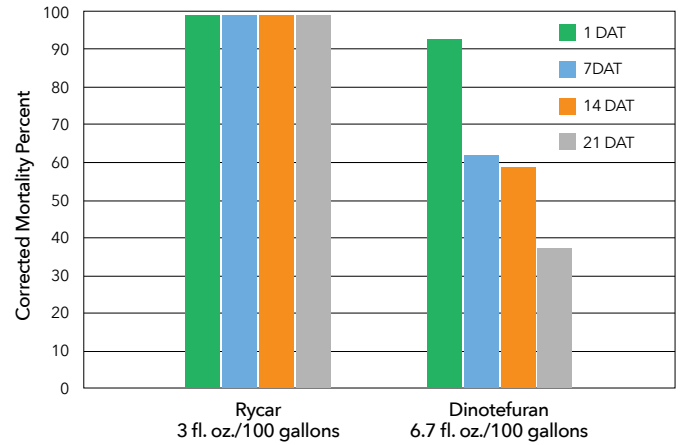
Aphid species in this test was Rosy Apple Aphid, *Dysaphis plantaginea*. Rycar and acetamiprid are not statistically different in this study.
Nichino America, 2013

Damage to plants from whiteflies stops quickly with Rycar, even when compared to neonicotinoids.



* Rycar was applied at 3.2 fl. oz./100 gallons
 ** Dinotefuran was applied at 8 fl. oz./100 gallons
 Nihon Nohyaku Co.

Residual activity on Q-biotype whitefly (*Bemisia tabaci*).

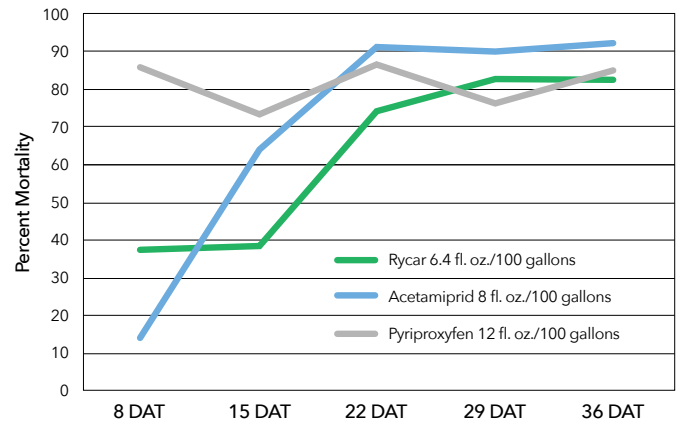


Nihon Nohyaku Co., 2009

Rycar in the Plant

Rycar is effective via contact on the leaf surface and is also translaminarily active. Rycar's translaminar movement allows it to penetrate the waxy leaf cuticle and move inside the plant leaf. When piercing-sucking pests feed on treated leaves, the target pests ingest Rycar and are subject to its affects. This provides a huge benefit when controlling those hard-to-reach pests that feed from the lower leaf surface (abaxial). Bottom line, Rycar provides complete leaf protection. After application, Rycar can provide 21 days or more of control.

Medeira mealybug control with Rycar is similar to the competition.



Two applications were made for each treatment in 14 day intervals

Beneficial Safety

As aggressive as Rycar is against insect pests, it is just as gentle on beneficial mites and insects. Beneficial insects play an important and growing role in a complete IPM program. University and IR-4 research has shown Rycar to have no effect on *Hypoaspis miles*, *Amblyseius* species, *Orius* species and pollinators among others.

Beneficial species		Life stage	Effect of Rycar	
Lady bug	<i>Harmonia axyridis</i>	Adult	No effect	■
Predatory bug	<i>Orius insidiosus</i>	Adult	No effect	■
	<i>Orius sauteri</i>	Adult	No effect	■
	<i>Orius strigicollis</i>	Nymph	No effect	■
Parasitic wasp	<i>Encarsia formosa</i>	Pupa	Some effect	●
Aphid midge	<i>Aphidoletes aphidimyza</i>	Larva	No effect	■
Predatory mite	<i>Hypoaspis miles</i>	Adult	No effect	■
	<i>Amblyseius cucumeris</i>	Adult	No effect	■
	<i>Amblyseius californicus</i>	Adult	No effect	■
	<i>Amblyseius swirskii</i>	Adult	No effect	■
	<i>Phytoseiulus oersimilis</i>	Adult	No effect	■
Wolf spider	<i>Pardosa pseudoannulata</i>	Adult	No effect	■
Silkworm	<i>Bombyx mori</i>	Larva	No effect	■
Bumblebee	<i>Bombus ignitus</i>	Adult	No effect	■

■ No effect ● Some Effect ✗ Lethal

Ornamental Rates

Rycar Rates		
Pest Controlled	Dilution Rate (fl. oz./100 gallons)	Dilution Rate (mL/gallon)
Whiteflies	1.6 to 3.2 fl. oz.	0.47 to 0.95 mL
Aphids		
Leafhoppers	2.4 to 3.2 fl. oz.	0.71 to 0.95 mL
Chili Thrips		
Mealybugs	6.4 fl. oz.	1.89 mL

Using Rycar

Angelonia	Holly	Petunia
Begonia	Holly, Blue	Pine
Chrysanthemum	Holly, Chinese	Pittosporum
Coleus	Impatiens	Privet
Cosmos	Impatiens, New Guinea	Privet, New Mexican
Dahlia	Madwort	Rose
Daisy, Transvaal	Magnolia, Southern	Snapdragon
Dianthus	Maple	Verbena
Euonymus	Marigolds	Wax Myrtle
Geranium, Zonal	Nandina	Zinnia
Gladiolus	Pansy	

Local conditions can influence crop tolerance and may not match those under which these species were tested. Before using Rycar insecticide, test the product on a small sample of the crop to be treated.



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