



MOVENTO®



Cotton Crop Guide

New registration for cotton mealybug

Movento® 240 SC Insecticide is the only product available registered for the control of the emerging pest, cotton mealybug (*Phenacoccus solenopsis*). Cotton mealybug limits yield potential by causing plant stunting and can reduce lint quality. In addition, Movento is registered for the control of cotton aphid and silverleaf whitefly.

Movento can be applied early in the season while beneficial insect numbers are building and it also can be applied later in the season to protect lint yield and quality. For the new registration on cotton mealybug, Movento should be applied when adults are first observed and numbers are expected to increase.

Movento works by interfering with fat reserves which are required for insects to grow. Therefore, Movento should be targeted primarily at juveniles i.e. when pest numbers are building and the majority of the population is made up of juveniles rather than significant populations of adults.

KEY BENEFITS

- **2-way systemic** – Movento controls hidden pests other insecticides don't reach, because it is transported in both the xylem and phloem; good coverage is recommended.
- **Ground and aerial application** – Movento is registered for aerial and ground application in cotton.
- **IPM fit** – Soft on most beneficials, with minimal impact compared to broad spectrum alternatives when used as directed. Movento preserves ladybird beetles, which are natural predators of mealybugs.
- **Compatibility** – Movento is compatible with a broad range of products and it can be tank mixed to control other pests such as mirids.

PRODUCT AT A GLANCE

Active ingredient	Spirotetramat 240 g/L
Formulation	Suspension concentrate
Activity group	Group 23 - Tetramic acids
Mode of action	Interferes with lipid biosynthesis causing the insect to stop growing which in most cases leads to death
Target pests	Cotton aphid (<i>Aphis gossypii</i>) Silverleaf whitefly (<i>Bemisia tabaci</i> Biotype B) Cotton mealybug (<i>Phenacoccus solenopsis</i>)
Withholding period	Harvest 21 days
Adjuvant	Penetrant-type adjuvants are recommended e.g. Hasten® at 1.0 L/ha
Pack sizes	3, 10 & 20 L

Applying Movento to cotton

CONTROLLING COTTON APHID

- **Longevity of control** – For high pest population situations, use the higher rate (400 mL/ha) for longer control.
- **Knockdown activity** – Aphid populations are generally well controlled within 5-7 days after an application of Movento.
- **Apply when approaching thresholds** – Movento has a fit for early control of cotton aphid and late in the season for residual control.



CONTROLLING COTTON MEALYBUG

- **Adults present** – Movento should be applied when low numbers of adult cotton mealybugs are first observed in the crop and numbers are expected to increase.
- **Two applications** – Two applications of Movento, 14 days apart, are recommended to break the mealybug lifecycle and provide longer term control. The second application is crucial to control the juvenile cotton mealybugs which were in the egg phase during the initial application.
- **Same rate** – Apply each application at 400 mL/ha with Hasten applied at 1.0 L/ha.
- **High water volumes** – Ground application volumes at 300 L/ha have shown increased efficacy compared to lower volumes. Using droppers before row closure is recommended for uniform coverage.
- **Resistance management** – Follow CRDC's latest Cotton Pest Management Guide at www.crdc.com.au/publications/cotton-pest-management-guide.

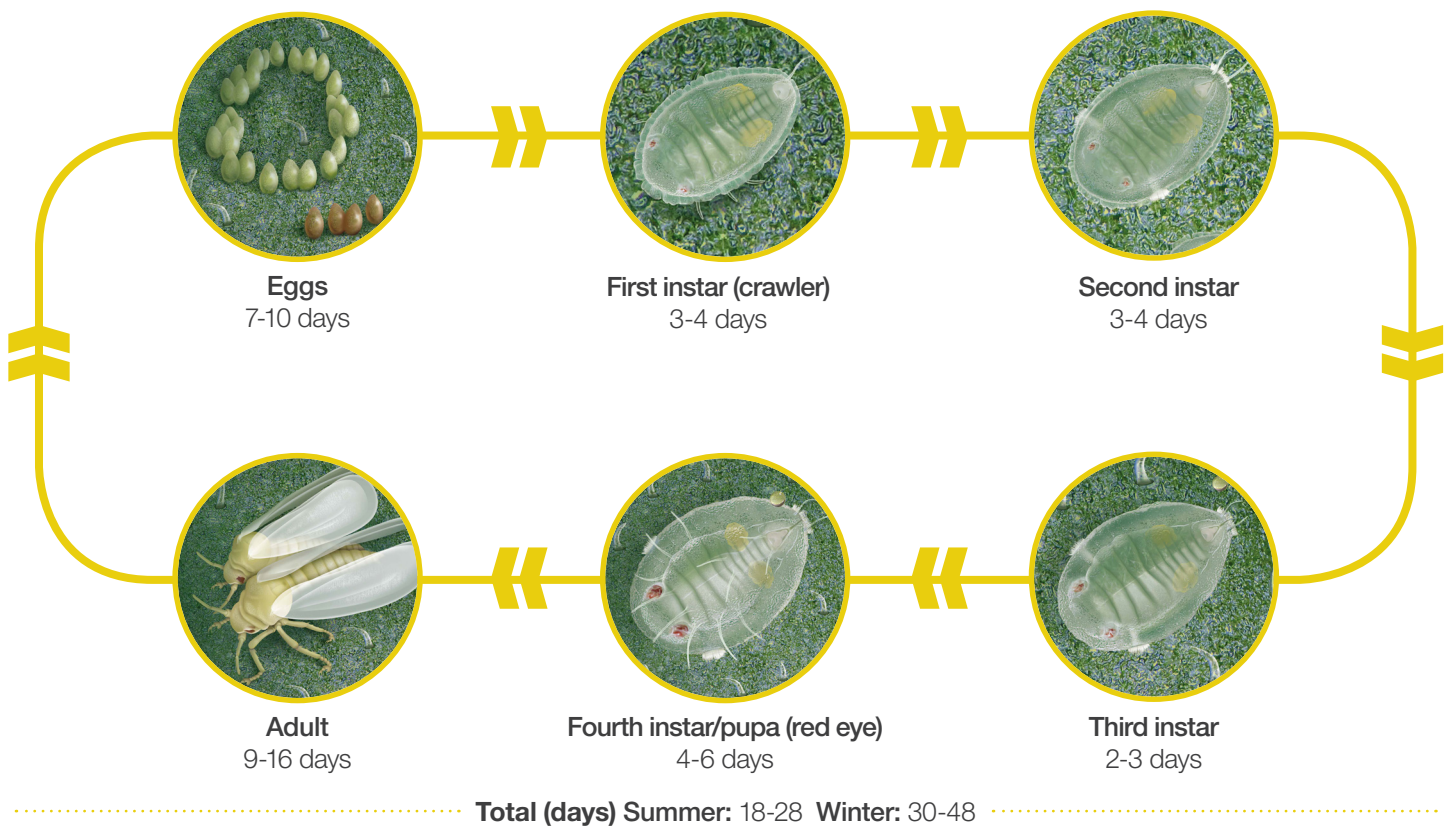


CONTROLLING SILVERLEAF WHITEFLY

- **Controls instars not adults** – Due to its long residual control, Movento controls the progeny of silverleaf whitefly fly-ins.
- **Flexibility throughout the season** – Movento has a good fit early in the season when beneficials are building. Its long residual also offers a good fit at the end of the season prior to picking, protecting the cotton against honeydew produced by silverleaf whitefly, a pest which is more damaging than cotton aphid.
- **Thorough coverage** – Selecting the correct water volumes is very important to obtain good coverage, especially in big crops with thick canopies.



WHITEFLY LIFE CYCLE



Movento - Impact on key beneficial species

Beneficial group	Target pest/s	Description	Impact of direct application
<i>Aphidius colemani</i>	Green peach aphid and cotton aphid	Parasitic wasp. Lays eggs into the body of the aphid.	Green
<i>Trichogramma pretiosum</i>	Heliothis and cabbage moth	Parasitic wasp. Lays eggs into moth eggs.	Green
<i>Encarsia formosa</i>	Greenhouse whitefly in protected cropping situations	Parasitic wasp. Lays eggs in 2nd, 3rd & 4th nymph stages of whitefly.	Green
<i>Eretmocerus hayati</i>	Silverleaf whitefly (SLWF)	Parasitic wasp. Lays eggs under the SLWF nymphs. Larvae hatch and penetrate nymphs.	Green
<i>Phytoseiulus persimilis</i>	Two-spotted mite (TSM)	Predatory mite. Prefers warm and humid environments. Feeds on all stages of TSM.	Yellow
<i>Typhlodromus montdorensis</i>	Thrips (onion, plague, tomato and melon), greenhouse whitefly, SLWF and red spider mite	Predatory mite. Feeds on thrips. More prevalent in warm environments.	Yellow
<i>Noeseiulus cucumeris</i>	Various thrips, including Western flower thrips, some mite species	Predatory mite. Feeds on the larvae stages of thrips and some mites. Suited to humid areas.	Yellow
<i>Orius armatus</i>	Various thrips, including Western flower thrips, generalist predator	Predatory bug. Kills thrips by sucking body fluid. Suits crops that produce flowers and pollen.	Green
<i>Aenaisus bambawalei</i>	Solenopsis mealybug	A parasitic wasp.	Green
<i>Cryptolaemus montrouzieri</i>	Solenopsis mealybug	Predatory beetle. Adult and larvae chew soft scale insects and mealybugs.	Yellow
<i>Dicranolaius bellulus</i> (Red & Blue beetle)	Aphid, Heliothis eggs and small larvae and SLWF	Predatory beetle. Adults are partly carnivorous.	Green
Various lady beetle	Aphid, mealybug, mites, jassids and thrips	Predatory beetle. Feed on both eggs and small larvae.	Yellow
<i>Nabis kinbergii</i> (Damsel bugs)	Heliothis, aphids, mites and mirids	Predatory bug. Pierce eggs and larvae.	Green
<i>Geocoris lubra</i> (Big-eyed bugs)	Heliothis, aphids, mites, mirids and SLWF	Predatory bug. Pierce larvae.	Green
<i>Mallada signatus</i> & <i>Micromus</i> spp. (Lacewing adults)	Aphid, heliothis, mealybugs, mites and SLWF	Predatory bug. Pierce eggs and larvae.	Red
Spiders	Heliothis, mites, SLWF, mirids and jassids	Generalist predator.	Yellow

The information in the table is based on tests using a single application at registered label rates.

Impact rating (% reduction in beneficials following application, based on scores for the major beneficial groups): Low = <20%, Moderate = 20-40%, High = >40%.

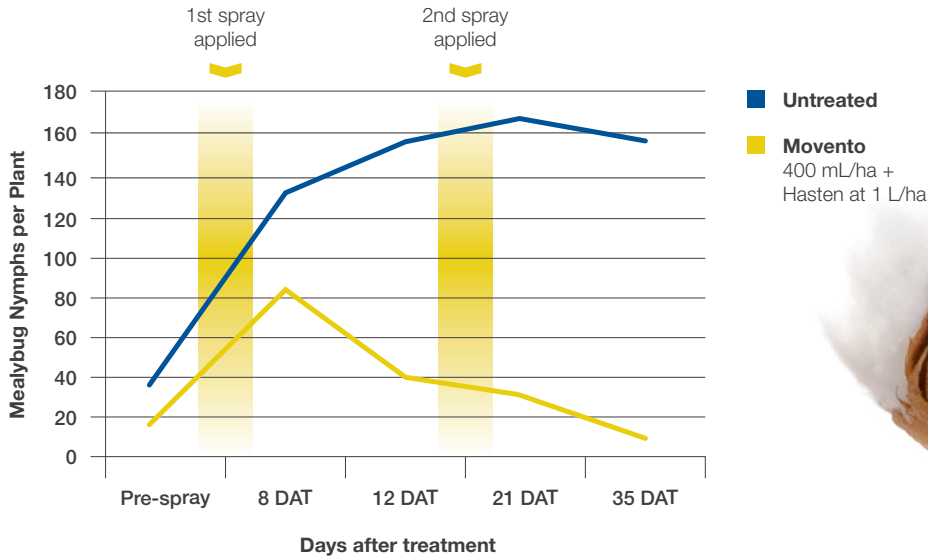
Low Impact
 Moderate impact
 High impact

Data is sourced from IPM Technologies and Table 3: Impact of insecticides and miticides on predators, parasitoids and bees in cotton, from the Cotton Research and Development Corporation (CRDC) and CottonInfo 2018-19 Cotton Pest Management Guide available from www.crdc.com.au/publications/cotton-pest-management-guide. 2018-19 Table Authors: Simone Heimoana (CSIRO); Originally created by Lewis Wilson (CSIRO).

Movento in cotton

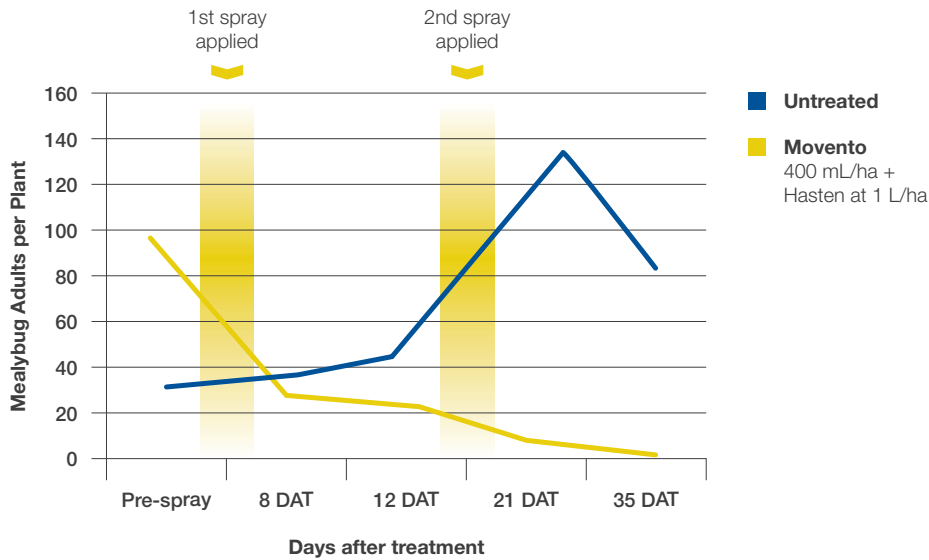
Movento is now registered for the control of cotton mealybug in addition to cotton aphid and silverleaf whitefly.

MEAN NUMBER OF COTTON MEALYBUG NYMPHS PER PLANT



Trial ID: FT3 ERS*, Application volume: 270 L/ha

MEAN NUMBER OF COTTON MEALYBUG ADULTS PER PLANT



Trial ID: FT3 ERS*, Application volume: 270 L/ha

* This research has been conducted with the support of the Cotton Research and Development Corporation.



Directions for use

CROP	PEST	RATE	WHP	CRITICAL COMMENTS
Cotton	Silverleaf Whitefly (<i>Bemisia tabaci</i>)	300 – 400 mL/ha + adjuvant*	H 3 weeks	Monitor crops and commence applications once local thresholds are reached. Use the higher rate when periods of high pest pressure or rapid crop growth are evident, when longer residual control is desired or when crops are well advanced.
	Cotton aphid (<i>Aphis gossypii</i>)	300 – 400 mL/ha + adjuvant*	G Refer to grazing WHP statement below.	Continue to monitor crops and make a subsequent application as necessary. Do not re-apply within 14 days of a previous Movento spray. Do not apply more than 2 applications per crop. Movento may not control silverleaf whitefly adults and eggs, however a decline in the total silverleaf whitefly population will occur over time as the juvenile stages are controlled. Ensure thorough coverage of the target crop – refer “Application” section in GENERAL INSTRUCTIONS. *Always add a specified spray adjuvant – refer “Adjuvant” section in GENERAL INSTRUCTIONS. Note: These uses are subject to CropLife resistance management strategies. Refer to www.croplife.org.au for more information.
	Cotton mealybug (<i>Phenacoccus solenopsis</i>)	400 mL/ha + adjuvant*		Monitor crops and commence applications. When adults are observed. Apply two applications 14 days apart. Do not re-apply within 14 days of a previous Movento spray. Do not apply more than 2 applications per crop. Ensure thorough coverage of the target crop – refer “Application” section in GENERAL INSTRUCTIONS. *Always add a specified spray adjuvant – refer “Adjuvant” section in GENERAL INSTRUCTIONS.

GRAZING WHP: DO NOT FEED COTTON FODDER, STUBBLE OR TRASH TO LIVESTOCK.

Want more information?

For more information on getting the best out of Movento, visit crop.bayer.com.au/movento or talk to your local Bayer representative.



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