

# Exirel<sup>®</sup>

## insecticide



### Technical Information

**Active Constituent:**

100 g/L CYANTRANILIPROLE

**Pack Sizes:**

10 L

GROUP **28** INSECTICIDE**CAUTION****KEEP OUT OF REACH OF CHILDREN****READ SAFETY DIRECTIONS BEFORE OPENING OR USING**

For the control of certain insect pests in Citrus and Cotton, and suppression of Fuller's rose weevil in Citrus as per the Directions for Use

**SAFETY DIRECTIONS**

May irritate the eyes. Will irritate the skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin. When opening the container and preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Wash hands after use. After each day's use wash gloves and contaminated clothing.

**FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.

**SAFETY DATA SHEET**

Additional information is listed in the Safety Data Sheet that can be obtained from [www.cropprotection.dupont.com.au](http://www.cropprotection.dupont.com.au)

**GENERAL INSTRUCTIONS**

Exirel<sup>®</sup> insecticide is an anthranilic diamide insecticide in the form of an oil in water emulsion, and is to be mixed with water and applied as a foliar spray. Exirel<sup>®</sup> is particularly active on both sucking and chewing (Lepidopteran and Coleopteran) insect pests.

Before application monitor insect populations to determine whether or not there is a need for application of Exirel<sup>®</sup> insecticide based on locally determined economic thresholds. More than one treatment of Exirel<sup>®</sup> insecticide may be required to control a population of pests.

For *Helicoverpa* species, spray applications should be timed with egg hatching and before larvae are entrenched in protected feeding sites.

Exirel<sup>®</sup> insecticide primarily intoxicates insect pests via ingestion, but may also have some minimal contact activity. Exposure of the pest species typically results in rapid feeding cessation within a few hours of exposure. However, the time to death and economic levels of

population control may be 3 to 6 days depending upon the species.

**INTEGRATED PEST MANAGEMENT****Citrus**

Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.

**Cotton**

Application of DuPont<sup>®</sup> Exirel<sup>®</sup> according to this label is expected to be safe to predatory mites, spiders and lacewings, but may have adverse effects on parasitoid wasps, ladybird beetles and rove beetles in the treated field and parasitoid wasps in downwind areas reached by spray drift.

## INSECTICIDE RESISTANCE WARNING

GROUP **28** INSECTICIDE

For insecticide resistance management Exirel® insecticide is a Group 28 insecticide.

Some naturally occurring insect biotypes resistant to Exirel® and other Group 28 insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Exirel® and other Group 28 insecticides are used repeatedly. The effectiveness of Exirel® on resistant individuals could be significantly reduced. Since the occurrence of resistant individuals is difficult to detect prior to use DuPont accepts no liability for any losses that may result from the failure of Exirel® to control resistant insects.

Exirel® may be subject to specific resistance management strategies. To help prevent the development of resistance to Exirel® observe the following instructions:

- Use Exirel® insecticide in accordance with the current Insecticide Resistance Management (IRM) strategy for your region.
- Apply Exirel® insecticide or other Group 28 insecticides using a “window” approach to avoid exposure of consecutive insect pest generations to the same mode of action. Multiple successive applications of Exirel® insecticide or other Group 28 insecticides are acceptable if they are used to treat a single insect generation.
- Following a “window” of Exirel® insecticide or other Group 28 insecticides, rotate to a “window” of applications of effective insecticides with a different mode of action.
- The total exposure period of all “Group 28-active windows” applied throughout the crop cycle (from seedling to harvest) should not exceed 50% of the crop cycle.
- Incorporate IPM techniques into the overall pest management program.
- Monitor insect populations for loss of field efficacy.
- Cultivate all cotton fields as soon as possible after picking to destroy over-wintering pupae of *Helicoverpa armigera*.

For further information contact your farm chemical supplier, consultant, local Department of Agriculture or Primary Industries, or local DuPont Representative.

For additional information on insect resistance, modes of action and monitoring visit the Insecticide Resistance Action Committee (IRAC) on the web at [www.irac-online.org](http://www.irac-online.org)

### MIXING

Fill spray tank to ¼ to ½ full of water. Measure the amount of Exirel® insecticide required for the area to be sprayed. Add Exirel® insecticide directly to the spray tank with the agitation engaged. Mix thoroughly to disperse

the insecticide. Once dispersed, the material must be kept in suspension at all times by continuous agitation. Use mechanical or hydraulic means, **DO NOT** use air agitation, premix or slurry.

If spray solution is left standing, ensure thorough re-agitation of the spray mix until fully resuspended. **DO NOT** allow spray mix to sit overnight, as resuspension may be difficult.

### SURFACTANT/WETTING AGENT

Use an ethylated seed oil at 0.5% v/v, (e.g. Hasten® @ 500 mL/100 L).

**DO NOT** add a non-ionic surfactant/wetting agent if:

- mixing with another product which already contains a surfactant and/or the product label advises not to add a surfactant.
- mixing with a liquid fertiliser

### ACIDIFICATION OF THE SPRAY TANK

If the pH of the spray tank after all products have been added and mixed is above pH 8, adjust to pH 8 or less using a registered acidifying agent. If the spray tank pH is 8 or less no adjustment of the spray tank pH is necessary. Spray tanks of pH 8 or less can be held for up to 8 hours before spraying. **DO NOT** store the spray mixture overnight in the spray tank.

### COMPATIBILITY

Exirel® insecticide is compatible with many commonly used fungicides, liquid fertilisers, herbicides, insecticides, and biological control products. However, since the formulations of products are always changing, it is advisable to test the physical compatibility of desired tank mixes and check for adverse effects like settling out or flocculation. To determine the physical compatibility, add the recommended proportions of the tank mix products to water, mix thoroughly and allow to stand for 20 minutes. If the combination remains mixed, or can be re-mixed readily, it is considered physically compatible. Avoid complex tank mixtures of several products or very concentrated spray mixtures.

The crop safety of all potential tank-mixes, including additives and other pesticides, on all crops has not been tested. Before applying any tank-mixture not specifically recommended on this label or other DuPont supplemental labelling, the safety to the target crop must be confirmed. To test for crop safety, apply the combination to a small area of the target crop in accordance with the label instructions to ensure that a phytotoxic response will not occur.

**The mixing sequence recommended is:** water soluble bags, dry flowable or water-dispersible granules, wettable powders, water-based suspension concentrates, water-soluble concentrates, suspo-emulsions (Exirel® insecticide), oil-based suspension concentrates, emulsifiable concentrates, adjuvants and surfactants, soluble fertilisers and drift retardants.

## APPLICATION

Use enough water to ensure thorough coverage of the crop. Adjust water volumes to crop stage. Droplet VMD should be of MEDIUM spray quality according to ASAE S572 Standard or the BCPC Guideline.

### Cotton:

#### Ground application

Apply as a *blanket* spray or as a *banded* spray (cotton only). Use a boom sprayer fitted with high flow rate fan nozzles to apply the highest practical spray volume. Apply in a minimum spray volume of 100 L/ha. Nozzles with higher rated flows produce larger droplets. Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size, DOES NOT improve canopy penetration and may increase drift potential. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE. A minimum spray pressure of 275 kPa (40 psi) should be used with fan nozzles applying insecticides. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. When applying Exirel® by ground application, keep the boom low to avoid spray drift.

#### Aerial application

DuPont™ Exirel® must only be applied with aircraft fitted with accurately calibrated equipment. Apply a minimum total spray volume of 30 L/ha with nozzles (eg. Micronaire rotary atomisers, CP nozzles or conventional hydraulic nozzles) set to medium spray quality according to ASAE S572 definition for standard nozzles. A spray drift minimisation strategy should be employed at all times when applying this product. **DO NOT apply Exirel® using Ultra Low Volume (ULV) methods.**

### Tree crops:

#### Dilute spraying

- Use a sprayer designed to apply high volumes of water up to the point of run-off and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy. Apply sufficient water to cover the crop to the point of run-off. Avoid excessive run-off.
- The required volume may be determined by applying different test volumes, using different settings on the sprayer, from industry guidelines or expert advice.
- Add the amount of product specified in the Directions for Use table for each 100 L of water. Spray to the point of run-off.
- The required dilute spray volume will change and the sprayer set up and operation may also need to be changed, as the crop grows.

#### Concentrate spraying

- Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies water

volumes less than those required to reach the point of run off) and matched to the crop being sprayed.

- Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen water volume.
- Determine an appropriate dilute spray volume (See Dilute Spraying above) for the crop canopy. This is needed to calculate the concentrate mixing rate.
- The mixing rate for concentrate spraying can then be calculated in the following way:

#### EXAMPLE ONLY

1. Dilute spray volume as determined above: For example 1500 L/ha
  2. Your chosen concentrate spray volume: For example 500 L/ha
  3. The concentration factor in this example is 3X (i.e.  $1500 \text{ L} \div 500 \text{ L} = 3$ )
  4. If the dilute label rate is 75 mL/100 L, then the concentrate rate becomes  $3 \times 75$ , that is 225 mL/100 L of concentrate spray.
- \* The chosen spray volume, amount of product per 100 L of water, and the sprayer set up and operation may need to be changed as the crop grows.

For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

#### Minimising Spray Drift

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator must consider all these factors when making application decisions. The most effective way to reduce drift potential and maintain efficacy is to apply a volume mean diameter (VMD) 285-300 microns. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT MINIMISE DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVOURABLE ENVIRONMENTAL CONDITIONS. When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

**DO NOT** apply when wind speed is less than 3 or more than 20 kilometres per hour at the application site.

#### Spray Equipment Cleanout

Prior to application, start with clean, well-maintained application equipment. Immediately following application, thoroughly clean all spray equipment to reduce the risk of forming hardened deposits which might become difficult to remove. Drain spray equipment. Thoroughly rinse sprayer and flush hoses, boom, and nozzles with clean water.

Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. **DO NOT** clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

#### **PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**

**DO NOT** apply under weather conditions, or from spraying equipment, that may cause spray to drift onto near-by non-target plants/crops, cropping lands or pastures.

**IMPORTANT:** Not all crops within a crop group, and not all varieties, cultivars or hybrids of crops, have been individually tested for crop safety. To test for crop safety, apply the product in accordance with the label instructions to a small area of the target crop to ensure that a phytotoxic response will not occur, especially where the application is a new use of the product by the applicator.

#### **PROTECTION OF HONEY BEES AND OTHER INSECT POLLINATORS**

Highly toxic to bees. In order to protect insect pollinators, refer to "Directions for Use" for crop specific application restrictions. **DO NOT** spray where bees from managed hives are known to be foraging. **DO NOT** allow spray drift to flowering weeds or flowering crops in the vicinity of the treatment area. Before spraying notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift. Risk to bees is reduced by spraying early morning and late evening while bees are not foraging.

#### **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

Very toxic to aquatic life. **DO NOT** contaminate wetlands or watercourses with the product or used containers.

#### **STORAGE AND DISPOSAL**

Store in the closed, original container in a dry, well-ventilated area, as cool as possible out of direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. **DO NOT** dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging for appropriate disposal at an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or

Territory government regulations. **DO NOT** burn empty containers or product.

#### **RE-ENTRY**

**DO NOT** allow entry into treated areas until the product has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

#### **PRECAUTION**

**DO NOT** use human flaggers/markers unless they are protected by engineering controls such as vehicles with enclosed cabs.

**IN A MEDICAL EMERGENCY CALL  
1800 674 415 All hours**

#### **NOTICE TO BUYER**

To the extent permitted by the Competition and Consumer Act (2010) or any relevant legislation of any State or Territory (the "Legislation") all conditions and warranties and statutory or other rights of action, whether arising in contract or tort or whether due to the negligence of DuPont or Seller, which buyer or any other user may have against DuPont or Seller are hereby excluded provided however that any rights of the buyer pursuant to non-excludable conditions or warranties of the Legislation are expressly preserved. DuPont hereby gives notice to buyer and other users that to the extent permitted by the Legislation it will not accept responsibility for any indirect or consequential loss of whatsoever nature arising from the storage, handling or use of this Product. Where permitted by the Legislation DuPont's liability shall in all circumstances be limited to the replacement of the product, or a refund of the purchase price paid therefor.

The Product must be used and applied strictly in accordance with the label instructions and other directions for use. It is impossible to eliminate all risks associated with the use of this product. Such risks may arise from factors such as weather conditions, soil factors, off target movement, unconventional technique, presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of DuPont or the Seller. Buyer accepts these risks.

**IF ON SKIN:** Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical advice/attention.

APVMA Approval Number: 64103/105292

## DIRECTIONS FOR USE

### RESTRAINTS:

#### Cotton

**DO NOT** apply if heavy dew is present on crops, or rainfall is expected within 2 hours of application.

#### Citrus

**DO NOT** apply if heavy rain or storms are forecast within 3 days.

**DO NOT** apply to citrus until AFTER flowering.

### SPRAY DRIFT RESTRAINTS

Except when applying with orchard/vineyard airblast equipment, **DO NOT** apply with spray droplets smaller than a MEDIUM spray droplet size category according to nozzle manufacturer specifications that refer to the ASAE S572 Standard or the British Crop Production Council guideline.

**DO NOT** apply when wind speed is less than 3 or more than 20 kilometres per hour, as measured at the application site.

**DO NOT** apply during surface temperature inversion conditions at the application site.

**DO NOT** direct the spray above trees or vines during air-blast applications. TURN OFF outward pointing nozzles at row ends and outer rows during air-blast applications.

Users of this product **MUST make an accurate written record** of the details of each spray application within 24 hours following application and **KEEP** this record for a minimum of 2 years.

The spray application details that must be recorded are:

1. date with start and finish times of application;
2. location address and paddock/s sprayed;
3. full name of this product;
4. amount of product used per hectare and number of hectares applied to;
5. crop/situation and weed/pest;
6. wind speed and direction during application;
7. air temperature and relative humidity during application;
8. nozzle brand, type, spray angle, nozzle capacity and sprays system pressure measured during application;
9. name and address of person applying this product.

(Additional record details may be required by the state or territory where this product is used).

### MANDATORY NO-SPRAY ZONES

**DO NOT** apply if there are sensitive crops, gardens, landscaping vegetation, protected native vegetation or protected animal habitat downwind from the application area and within the mandatory no-spray zones shown in the table below.

| Downwind mandatory no-spray zones for protection of terrestrial environment |   |            |            |
|---|---|------------|------------|
| Crop  | Wind speed                                    | Fixed-Wing | Helicopter |
| Cotton  | FOR AERIAL APPLICATION                        |            |            |
|   | From 3 to 20 kilometres per hour              | 0 metres   | 0 metres   |
|   | FOR GROUND APPLICATION: BOOM APPLICATIONS     |            |            |
|   | From 3 to 20 kilometres per hour              | 0 metres   |            |
| Citrus  | FOR GROUND APPLICATION: AIRBLAST APPLICATIONS |            |            |
|   | From 3 to 20 kilometres per hour              | 10 metres  |            |

**DO NOT** apply if there are aquatic or wetland areas including aquaculture ponds downwind from the application area and within the mandatory no-spray zone shown in the table below:

| Crop   | Downwind mandatory no-spray zones for Protection of the Aquatic Environment |            |            |
|--------|---|------------|------------|
| Cotton | FOR AERIAL APPLICATION  | Fixed-Wing | Helicopter |
|        | From 3 - 8 kilometres per hour  | 140 metres | 100 metres |
|        | From 8 - 20 kilometres per hour   | 160 metres |            |
|        | FOR GROUND APPLICATION: BOOM APPLICATIONS                                   |            |            |
|        | From 3 to 20 kilometres per hour  | 5 metres   |            |
| Citrus | FOR GROUND APPLICATION: AIRBLAST APPLICATIONS                               |            |            |
|        | From 3 to 20 kilometres per hour  | 50 metres  |            |

## Citrus

**DO NOT** apply if there are livestock, pasture or any land that is producing feed for livestock downwind from the application area and within the mandatory no-spray zones shown below:

| Crop   | Downwind mandatory no-Spray zones for protection of international trade |           |
|--------|---|-----------|
| Citrus | FOR GROUND APPLICATION: AIRBLAST APPLICATION                            |           |
|        | From 3 to 20 kilometres per hour  | 80 metres |

For use in all States where appropriate for the crop and/or insect pest.

### BROADACRE CROPS

| CROP   | PEST   | RATE/HA   | CRITICAL COMMENTS  |
|--------|--|---|--|
| Cotton | <p><u>Sucking pests:</u><br/>Silverleaf whitefly<br/>(<i>Bemisia tabaci</i> B biotype)<br/>Cotton aphid<br/>(<i>Aphis gossypii</i>)<br/>Suppression only</p> <p><u>Chewing pests:</u><br/>Cotton bollworm<br/>(<i>Helicoverpa armigera</i>)<br/>Native budworm<br/>(<i>Helicoverpa punctigera</i>)</p> | 600 mL<br>+<br>ethylated seed oil<br>(refer<br>Surfactant/Wetting<br>agent section) | <p><u>Heliothis</u> - target eggs and hatchling (neonates or 1<sup>st</sup> instar) to small larvae (2<sup>nd</sup> instar) when they reach the economic spray threshold and before they become entrenched in hidden feeding sites, such as squares, flowers or bolls.</p> <p><u>Silverleaf whitefly</u> – target early developing populations. Exirel® is primarily active on the early nymph stage.</p> <p>A maximum of two (2) applications are to be applied to any one crop per season. Further treatments should be made with alternative mode of action insecticides.</p> |

### TREE CROPS

| CROP  | PEST   | RATE  | CRITICAL COMMENTS   |
|---|--|---|---|
| <p>Apply by dilute or concentrate spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods. Refer to Application; Tree crop section of the label.</p> <p>Thorough fruit coverage is essential.</p> <p>Use in accordance with AIRAC Insecticide Resistance Management Strategy guidelines</p> |  |   |   |
| Citrus  | <p><u>Rasping pest:</u><br/>Kelly's citrus thrip<br/>(<i>Pezothrips kellyanus</i>)</p> <p><u>Chewing pests:</u><br/>Light brown apple moth<br/>(<i>Epiphyas postvittana</i>)<br/>Fuller's rose weevil<br/>(<i>Asynonychus cervinus</i>)<br/>(Suppression only)</p> | <p><u>Dilute spraying:</u><br/>75 mL/100 L</p> <p><b>DO NOT</b> apply more than 3 L/ha</p> <p><u>Concentrate spraying:</u><br/>Refer to<br/>Mixing/Application<br/>section<br/>(<b>DO NOT</b> add a<br/>Surfactant/Wetting<br/>agent)</p> | <p>A maximum of two (2) applications are to be applied to any one crop per season.</p> <p>Monitor crops from flowering onwards for the presence of Kelly's citrus thrip and Lightbrown apple moth. Apply Exirel®, after flowering, once local pest thresholds are reached. A single application may be suitable where pest pressure is low. Continue to monitor crops and where thrip pressure is moderate to high, apply a second application, no less than 14 days after the first and prior to calyx closure.</p> <p>Fuller's rose weevil: Monitor for weevil emergence. Continue monitoring after spraying. Time at least one application to occur prior to the start of egg lay which usually occurs from late summer and through autumn. <b>DO NOT</b> retreat within fourteen (14) days. The use of Exirel® should be used in conjunction with other weevil control measures. <b>DO NOT</b> use for trunk band spraying.</p> |

**NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

### WITHHOLDING PERIODS

#### HARVEST

**CITRUS: Nil**

**COTTON: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.**

#### GRAZING

**CITRUS: DO NOT GRAZE TREATED AREA OR CUT FOR STOCKFEED**

**COTTON: DO NOT ALLOW LIVESTOCK TO GRAZE CROPS, COTTON STUBBLE OR GIN TRASH TREATED WITH EXIREL® INSECTICIDE.**

EXPORT OF TREATED PRODUCE: Suitable Maximum Residue Limits (MRLs) or import tolerances for produce treated with Exirel® insecticide may not be established in some countries. Consult with your exporter or DuPont before applying Exirel® insecticide to crops from which produce is to be exported.

---

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable. It is intended for use by persons having technical skill at their own discretion and risk. DuPont makes no warranties, expressed or implied, and assumes no liability in connection with any of this information. Nothing herein is to be taken as license to operate under or a recommendation to infringe on any patents.

Copyright © 2017 E.I. du Pont de Nemours and Company. All rights reserved.

The DuPont Oval Logo, DuPont™ and Exirel® are trademarks or registered trademarks of DuPont or its affiliates.

\* Non DuPont Trademark

Du Pont (Australia) Pty Ltd  
7 Eden Park Drive,  
Macquarie Park NSW 2113  
Phone: (02) 9923 6111

[www.cropprotection.dupont.com.au](http://www.cropprotection.dupont.com.au)

Emergency Telephone

Transport Emergency: (02) 9923 6275

24 hr Emergency Medical Information: 1800 674 415