TECHNICAL INFORMATION

Active Constituent:

200 g/L CHLORANTRANILIPROLE

GROUP	28	INSECTICIDE

Pack Sizes:

1 L
5 L

For the control of Lepidopteran species of insect pests in certain vegetables and Strawberries, as per the Directions for Use.

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.fmccrop.com.au

GENERAL INSTRUCTIONS

Coragen® insecticide has been specifically designed for use in Integrated Pest Management (IPM) schemes. Coragen® is an anthranilic diamide insecticide in the form of a suspension concentrate. Coragen® is particularly active on Lepidopteran insect pests, primarily as a larvicide. Before application monitor insect populations to determine whether or not there is a need for application of Coragen® insecticide based on locally determined economic thresholds. More than one treatment of Coragen® insecticide may be required to control a population of pests.

INSECTICIDE RESISTANCE WARNING

GROUP	28	INSECTICIDE

For insecticide resistance management Coragen® insecticide is a Group 28 insecticide. Some naturally occurring insect biotypes resistant to Coragen® insecticide 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 Coragen® and other Group 28 insecticides are used repeatedly. The effectiveness of Coragen® insecticide on resistant individuals could be significantly reduced. Since the occurrence of resistant individuals is difficult to detect prior to use FMC accepts no liability for any losses that may result from the failure of Coragen® insecticide to control resistant insects. Coragen® may be subject to specific resistance management strategies. For further information refer to the Insecticide Resistance Management (IRM) section of this label, contact your farm chemical supplier, consultant, local Department of Agriculture or Primary Industries, or local FMC Representative.

INSECTICIDE RESISTANCE MANAGEMENT (IRM)

Coragen® insecticide contains chlorantraniliprole, a Group 28 Insecticide.

Unless directed otherwise in the specific crop/insect sections of the label, the following practices are recommended to prevent or delay the development of insecticide resistance to Coragen® insecticide and to Group 28 insecticides:

- Apply Coragen® 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 Coragen® or other Group 28 insecticides are acceptable if they are used to treat a single insect generation.
- Following a “window” of Coragen® 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.

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

MIXING

Fill spray tank to ¼ to ½ full of water. Measure the amount of Coragen® insecticide required for the area to be sprayed. Add Coragen® 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

For Brassica vegetable, Brassica leafy vegetable, Stalk & Stem vegetables, Strawberries, Leafy vegetables, Lettuce, Fruiting vegetables (Cucurbits), Legume vegetables, Sweet corn use a non-ionic surfactant/wetting agent at 15 g active/100 L, (e.g. Agral* 600 @ 25 mL/100 L).

DO NOT use BS1000* or Activator* as it may cause crop phytotoxicity.

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.

APPLICATION

Application equipment should be calibrated to apply at least sixty (60) droplets per cm^2 of target foliage. Droplet VMD should be of medium spray quality according to ASAE S572 definition for standard nozzles.

Ground application

Use a boom sprayer fitted with high flow rate nozzles to apply the highest practical spray volume. 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. Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. When applying Coragen® by ground application, keep the boom low to avoid spray drift.

Aerial application (by fixed wing aircraft or helicopter)

Coragen® must only be applied with aircraft fitted with accurately calibrated equipment. Apply a minimum total spray volume of 40 L/ha with nozzles (e.g. 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 Coragen® using Ultra Low Volume (ULV) methods.

COMPATIBILITY

Since formulations may be changed and new ones introduced, it is recommended that users premix a small quantity of the desired tank mix and observe possible adverse changes (settling out, flocculation etc). Avoid complex tank mixtures of several products or very concentrated spray mixtures. Coragen® is compatible with Captan*, Dextrolac*, Delan*, Fulasin*, mancozeb, Omite*, Polyram* and Systhane*.

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

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 WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

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

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. **DO NOT** store for prolonged periods in 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.

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 FMC or Seller, which buyer or any other user may have against FMC 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. FMC 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 FMC'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 FMC or the Seller. Buyer accepts these risks.

DIRECTIONS FOR USE

RESTRAINTS

DO NOT apply if rainfall is expected within 2 hours of application.

DO NOT allow effluent or run-off from protected cropping systems containing this product to enter dams, streams, ponds or other waterways.

SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at www.apvma.gov.au/spraydrift

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a Medium spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory no-spray zones' section) are observed.

DO NOT apply by aircraft unless the following requirements are met:

- spray droplets not smaller than a Coarse spray droplet size category
- for release heights 25% of wingspan or 25% of rotor diameter or lower above the target canopy, minimum distances between the application site and downwind sensitive areas (see 'Mandatory no-spray zones' section) are observed.

Table 1 – No-Spray Zones for Protection of the Aquatic Environment

FOR AERIAL APPLICATION

Wind Speed Range at Time of Application	**Downwind Mandatory No-Spray Zone**	
	Fixed-Wing	**Helicopter**
from 3 to 8 kilometres per hour	200 metres	200 metres
from 8 to 14 kilometres per hour		
from 14 to 20 kilometres per hour		

FOR GROUND APPLICATION

Usage	Applications per season	Downwind Mandatory No-Spray Zone
Strawberries and Vegetables	3	15 metres

FOR USE IN ALL STATES WHERE APPROPRIATE FOR THE CROP AND/OR INSECT PEST.

<table>
<tr><th>CROP</th><th>PEST</th><th>RATE/HA</th><th>WHP</th><th>CRITICAL COMMENTS</th></tr>
<tr><td colspan="5">CRITICAL COMMENTS - ALL CROPS
Regularly scout crops to monitor for eggs and larvae. Target sprays against eggs and newly hatched larvae before they become entrenched. Apply as egg and larvae reach threshold numbers.
A maximum of three (3) applications are to be applied to any one crop. No more than two (2) consecutive sprays per crop, with a minimum spray interval of 7 days (unless stated otherwise). Further treatments should be made with alternative mode of action insecticides.
Use enough water to ensure thorough coverage of the crop. Adjust water volumes to crop stage (200 – 1000 L/ha).
For dilute spraying- Apply sufficient water to cover the crop to the point of run-off but avoid excessive run-off. The required dilute spray volume will change as the crop grows therefore sprayer set up needs to be adjusted accordingly.
Refer to Surfactant/Wetting agent section.
Use in accordance with AIRAC Insecticide Resistance Management Strategy guidelines. As part of an Insecticide Resistance Management programme for Cotton bollworm, it is important to plough crops immediately after harvest.</td></tr>
<tr><td>Brassica vegetables including:
Broccoli
Brussels sprout
Cabbage
Cauliflower</td><td rowspan="2">Cabbage-centre grub (Hellula hydralis)
Cabbage cluster caterpillar (Crocidolomia pavonana)
Cabbage leafminer (Liriomyza brassicae)
Cabbage white butterfly (Pieris rapae)
Cluster caterpillar (Spodoptera litura)
Cotton bollworm (Helicoverpa armigera)
Diamondback moth (Plutella xylostella)
Native budworm (Helicoverpa punctigera)
Soybean looper (Thysanoplusia orichalcea)</td><td rowspan="2">100 mL
+
15 gai/100 L of non-ionic surfactant
or
10 mL/100 L (dilute)
+
15 gai/100 L of non-ionic surfactant</td><td>7 days</td><td rowspan="4"></td></tr>
<tr><td>Brassica leafy vegetables including:
Buk choy
Chinese broccoli (Gai lum/Gai lan/Kai lan),
Chinese cabbage (Pet sai/Wombok /Haksukai)
Choy sum
Gai choy/Am soy
Kai choy
Kale
Mibuna
Leafy mustard including Indian mustard and Mustard spinach (Komatsuma)
Pak choy
Tat soy</td><td>3 days</td></tr>
<tr><td>Stalk & Stem vegetables, including:
Celery
Rhubarb</td><td rowspan="3">Cotton bollworm (Helicoverpa armigera)
Native budworm (Helicoverpa punctigera)</td><td rowspan="2">100 mL
+
15 gai/100 L of non-ionic surfactant
or
10 mL/100 L (dilute)
+
15 gai/100 L of non-ionic surfactant</td><td rowspan="3">3 days</td></tr>
<tr><td>Leafy vegetables (excluding lettuce), including:
Cress
Endive
Silverbeet
Spinach
(for field and protected cropping systems)</td></tr>
<tr><td>Lettuce
(leaf and closed head varieties)
(for field and protected cropping systems)</td><td></td><td></td></tr>
</table>

CROP	PEST	RATE/HA	WHP	CRITICAL COMMENTS
Fruiting vegetables (excluding Cucurbits), including: Capsicum Eggplant Peppers Tomato (trellis and field) (for field and protected cropping systems)	Cotton bollworm *(Helicoverpa armigera)* Native budworm *(Helicoverpa punctigera)* Tomato leaf miner *(Phthorimaea operculella)*	100 mL or 10 mL/100 L (dilute)	3 days	
	Eggfruit caterpillar *(Sceliodes cordalis)*			Ensure spray timing coincides with egg laying/ hatching. The pest hatches from the egg and burrows directly into fruit. Larvae entrenched in the fruit at the time of spraying will not be controlled.
Fruiting vegetables (Cucurbits), including: Cucumber Melons Pumpkin Squash Zucchini (for field and protected cropping systems)	Cotton bollworm *(Helicoverpa armigera)* Native budworm *(Helicoverpa punctigera)* Cucumber moth *(Diaphania indica)*	100 mL + 15 gai/100 L of non-ionic surfactant or 10 mL/100 L (dilute) + 15 gai/100 L of non-ionic surfactant	1 day	Apply with a minimum spray interval of 5 days.
Legume vegetables including: Green beans Green peas Processing peas Snow peas Sugar snap peas (for field and protected cropping systems)	Cotton bollworm *(Helicoverpa armigera)* Native budworm *(Helicoverpa punctigera)*	100 mL + 15 gai/100 L of non-ionic surfactant) or 10 mL/100 L (dilute) + 15 gai/100 L of non-ionic surfactant	1 day	
Potatoes	Cotton bollworm *(Helicoverpa armigera)* Native budworm *(Helicoverpa punctigera)* Potato moth *(Phthorimaea operculella)*	100 mL	Not required	Only target foliar infestations of Potato moth. Moth larvae in the soil or within stems will not be controlled. Apply with a spray interval of 10 - 14 days.
Strawberries (for field and protected cropping systems)	Cluster caterpillar (*Spodoptera litura*) Cotton bollworm *(Helicoverpa armigera)* Native budworm *(Helicoverpa punctigera)*	100 mL + 15 gai/100 L of non-ionic surfactant) or 10 mL/100 L (dilute) + 15 gai/100 L of non-ionic surfactant	1 day	

CROP	PEST	RATE/HA	WHP	CRITICAL COMMENTS
Sweet corn	Cotton bollworm *(Helicoverpa armigera)*	100 mL + 15 gai/100 L of non-ionic surfactant	7 days	Ensure spray timing coincides with egg laying/hatching. Larvae entrenched in cobs at the time of spraying will not be controlled.

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

WITHHOLDING PERIODS

HARVEST

POTATOES: WITHHOLDING PERIOD NOT REQUIRED WHEN USED AS DIRECTED.
FRUITING VEGETABLES (CUCURBITS INCLUDING CUCUMBERS, MELONS, PUMPKIN, SQUASH, ZUCCHINI), LEGUME VEGETABLES, STRAWBERRIES: DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.
BRASSICA LEAFY VEGETABLES, FRUITING VEGETABLES (EXCLUDING CUCURBITS), LEAFY VEGETABLES (INCLUDING LETTUCE), STALK & STEM VEGETABLES: DO NOT HARVEST FOR 3 DAYS AFTER APPLICATION.
BRASSICA VEGETABLES (INCLUDING BROCCOLI, BRUSSELS SPROUT, CABBAGE, CAULIFLOWER), SWEET CORN: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.

GRAZING

LEGUME VEGETABLES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.
SWEET CORN: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.
OTHER CROPS: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.

TRADE ADVICE EXPORT STATEMENT: Import tolerances for produce treated with Coragen® insecticide may be pending in some countries. Consult with your exporter or FMC before applying Coragen® insecticide to export crops.

APVMA Approval No: 61519/119647

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