READ THE LABEL (AND LEAFLET) BEFORE USE
KEEP LOCKED AWAY AND OUT OF REACH OF CHILDREN

# Voliam Targo®

syngenta

Reg. No. **L8545** Act No. 36 of 1947

**A suspension concentrate non-systemic insecticide with translaminar distribution and stomach action for the control of codling moth in apples and pears, and pests as listed in cruciferae.**

| GROUP | 6 / 28 | INSECTICIDE |
|---|---|---|

**Active Ingredients:**
**chlorantraniliprole (ryanodine).. 45 g/ℓ**
**abamectin (mectin)..... 18 g/ℓ**



**WARNING**

**Hazard statements:** Harmful if swallowed or inhaled. May cause damage to organs (nervous system) through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.
**Precautionary statements:** Keep out of reach of children. **Prevention:** Do not breathe dust/fumes/gas/mist/vapours/spray. Wash skin thoroughly after handling. Avoid release to the environment. **Response:** If inhaled, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell. Collect spillage. **Storage:** Store locked-up. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

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**UN 3082**

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## 1. WARNINGS:

**Hazard statements:** Harmful if swallowed or inhaled. May cause damage to organs (nervous system) through prolonged or repeated exposure. Very toxic to aquatic life with long-lasting effects.

**Withholding periods:** Minimum number of days between last application and harvest.

| | |
|---|---|
| **APPLES AND PEARS** | **14 days** |
| **CRUCIFERAE** | **3 days** |

**NOTE:** Compliance with these withholding periods will ensure that residues do not exceed local maximum residue limits (MRL), but the import tolerances of other countries might possibly be exceeded. If the crop to be treated is intended for export, consult the relevant importer or exporting body regarding the use of this product, MRL's and recommended withholding periods.

- Harmful if swallowed and may be harmful if inhaled.
- Very toxic to aquatic organisms, such as fish and crustaceans and may cause long-term adverse effects in the aquatic environment. Direct contamination of surface water must be avoided.
- **Toxic to bees**. Do not apply foliar when bees are actively foraging.
- Handle with care.
- Keep container tightly closed in a dry, cool and well-ventilated area.
- Keep out of reach of children, uninformed persons and animals.
- Store away from food, feed and drinking water.
- **Re-entry:** Do not enter treated area for 12 hours unless wearing protective clothing.
- When used as recommended the risk towards birds, fish, crustaceans, algae and earthworms is considered as low to very low. There is only low potential for bioaccumulation.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the weed against the remedy concerned, as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation and the environment, or harm to people or animals or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions, that could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

## 2. PRECAUTIONS:

**Precautionary statements:** Keep out of reach of children. **Prevention:** Do not breathe dust/fumes/gas/mist/vapours/spray. Wash skin thoroughly after handling. Avoid release to the environment. **Response:** If inhaled, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell. Collect spillage. **Storage:** Store locked-up. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

- Do not inhale spray mist.
- Wear suitable protective clothing when spraying.
- Wash with soap and water after use.
- Wash contaminated clothing after use.
- Do not eat, drink, or smoke while mixing or applying the product or before washing hands and face.
- Prevent contamination of feed, food, eating utensils and drinking water.
- Do not apply directly to, and prevent drift onto other edible crops, grazing, rivers, dams and areas not under treatment.
- Clean spray equipment after use. Dispose of rinsate where it will not contaminate crops, grazing, rivers, dams, boreholes and areas not under treatment.
- Rinse empty container three (3) times with a volume of water equal to a minimum of 10% of that of the container. Add rinsate to the contents of the spray tank before destroying the container in the prescribed manner.

- Do not use empty container for any other purpose.

**First Aid and Medical Treatment:**

**If any indisposition occurs, stop working immediately. Call a doctor and apply first aid measures. If poisoning is suspected, stop working immediately and call a poison control centre/doctor. Present this label.**

- **Skin contact:** Remove contaminated clothing and thoroughly wash the affected body parts immediately with plenty of water and soap.
- **Eye contact:** Rinse splashes from eyes with abundant fresh and clean water for several minutes.
- **Inhalation:** Move to clean air.
- **If swallowed:** Repeatedly administer medicinal charcoal in plenty of water.

Seek medical advice immediately. If the amount of chemical is judged to be less than a lethal dose, observe the patient and treat symptomatically. If gastric lavage is considered necessary, prevent aspiration of gastric material. Consider administration of activated charcoal and a laxative.

**Note:** Never give anything to an unconscious patient and never induce vomiting.

**Antidote:** No specific antidote is known; apply symptomatic therapy.

## 3. RELEVANT SUBSTANCES:

| **Chemical name** | |
|---|---|
| **abamectin (combination of avermectin B1a and avermectin B1b) (ISO)** | |
| **Classification** | **Concentration (% w/w)** |
| Acute Tox. 2; H300<br>Acute Tox. 1; H330<br>Acute Tox. 3; H311<br>Repr. 2; H361d<br>STOT RE 1; H372 (Nervous system)<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410<br><br>M-Factor (Acute aquatic toxicity): 10<br>M-Factor (Chronic aquatic toxicity): 10 | ≥ 1 - < 2,5 |

## 4. RESISTANCE MANAGEMENT:

**VOLIAM TARGO** is a group code 6 and 28 insecticide. Any insect population may contain individuals naturally resistant to **VOLIAM TARGO** and other group code 6 and 28 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly and exclusively in programs. These resistant insects may not be controlled by **VOLIAM TARGO** or any other group code 6 and 28 insecticides.

**To delay insecticide resistance:**

- Avoid exclusive repeated use of insecticides from the same insecticide group code. Alternate or tank mix with products from different insecticide group codes.
- Integrate other control methods (chemical, cultural, biological) into insect control programs.

For specific information on resistance management contact the registration holder of this product.

**Syngenta cannot accept responsibility for any losses that may result from the failure to control pests resistant to VOLIAM TARGO.**

Some insects (e.g., *Cydia pomonella*, *Helicoverpa armigera*, etc.) have been able to develop resistance to commercially available products. When resistance occurs, recommended rates fail to suppress the pest population below economic thresholds. The onset of resistance cannot be predicted and local advisors should be consulted for resistance management recommendations. As a result of its unique mode of action, **VOLIAM TARGO** is ideally suited for applications where resistance management is important. Whilst there is no evidence of insect resistance to chlorantraniliprole, these guidelines will maximise the effective life of the product:

- Where appropriate, alternate **VOLIAM TARGO** with compounds from different chemical classes (oxadiazine, pyrethroid, organophosphate, neonicotinoid, spinosyn, diacylhydrazine, or other insect growth regulators). We recommend alternation with registered products from these classes and not to exceed the maximum number of **VOLIAM TARGO** applications per season as per the instructions under DIRECTIONS FOR USE on this label.
- Monitor insect populations and apply according to the label instructions when locally determined economic thresholds are reached. It is recommended that 2 - 3 consecutive **VOLIAM TARGO** applications are applied as a block spray to the same generation. The next generation of the same pest species should not be exposed to the same insecticide group. Follow the label recommendations precisely for dosage rates and spray intervals and the optimum timing to apply **VOLIAM TARGO.**
- **VOLIAM TARGO** has a low risk to beneficials in orchards i.e., **predacious mites**: *Amblyseius andersoni*, *Neoseiulus californicus* and other beneficial insects: *Typhlodromus, Diglyphus, Cryptolaemus, Rodolia, Aphytis, Anthocoris, Encarcia, Chrysopa* and *Bombus pollinators*. Beneficials remain after treatments and can help reduce pest reinfestation. Beneficials provide additional pressure on the pest population and can therefore aid in the reduction of resistance potential.
- **VOLIAM TARGO** can be effectively used in combination with mating disruption in orchards under mating disruption.

## 5. PRODUCT CHARACTERISTICS:

- **VOLIAM TARGO** acts by contact and ingestion, has translaminar activity but is non-systemic.
- **VOLIAM TARGO** has two (2) modes of action; it binds to GABA glutamate receptors and opens the chloride channels, the chloride enters cells and causes inhibition of electrical activity. It also binds to the ryanodine receptor and opens calcium channels. The stored calcium ions are released, preventing normal muscle function. Both modes

of action lead to paralysis, feeding inhibition and death.

- It is suitable for integrated pest management (IPM) as well as for an anti-resistance strategy for codling moth control.
- Due to the specific mode of action and method of application, fruit damage by the pest may occur despite the application of **VOLIAM TARGO**.
- It is effective against insect strains susceptible and resistant to organophosphates.
- It displays high and long-lasting efficacy against lepidoptera.

### 5.1. Crop Tolerance

**VOLIAM TARGO** is well tolerated by the fruits of apples and pears, when applied as recommended.

### 5.2. Residues

When used as directed, no unacceptable residues in or on the harvested crop will occur.

**6. DIRECTIONS FOR USE:** Use only as indicated.

### 6.1 Compatibility

The compatibility of **VOLIAM TARGO** with other products may be influenced by the formulation of the products involved as well as the quality of the water. Since the formulation of other products may change without the knowledge of Syngenta and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application. **VOLIAM TARGO** is miscible with standard insecticides and fungicides. In the event of any doubt a compatibility test should be carried out.

### 6.2 Mixing Instructions

- Fill ¼ of the spray tank with clean water, start agitation, add the calculated and measured quantity of product and continue to refill the spray tank.
- Continue agitating during application to maintain a uniform spray mixture.
- When filling the spray tank the filling hose should always be above water level in order to prevent suck back.
- In tank mixes the **VOLIAM TARGO** should be mixed first, followed by other mixing partners.
- Apply within a few hours.

### 6.3 Application Techniques

- Avoid spraying during the heat of the day or when the foliage is wet or if rain is imminent. **VOLIAM TARGO** has good rain fastness, once the spray deposit is dry, the treatment does not have to be repeated after rainfall.
- Air blast spray equipment is recommended. Adjust the air stream to the shape of the trees.
- An even and thorough spray coverage is essential. Adjacent fruit have the potential to be infested where they touch.
- Ensure that the equipment is properly calibrated to give even distribution at the correct volume.

**Ultra low volume spraying is not recommended.**

### 6.4 Application Rates

**APPLES AND PEARS**

| Disease | Dosage |
|---|---|
| **Codling moth** *(Cydia pomonella)* | 75 mℓ/100 ℓ water |
| **Remarks**<br>• Commence application according to official recommendations or detection of of adults in pheromone traps.<br>• Apply in 800 - 2 000 ℓ spray solution/application hectare depending on the size of the tree.<br>• Do not exceed 3 000 mℓ **VOLIAM TARGO** per season or 4 000 ℓ spray solution per season.<br>• Interval: 14 days, 1 - 3 applications.<br>• Will also control mites: *Panonychus ulmi, Tetranychus urticae; Epitrimeris pyri* and *Cacopsylla* spp. | |

**CRUCIFERAE**
(**Cabbage group:** Includes broccoli, brussel sprouts, cabbage and cauliflower).

| Disease | Dosage |
|---|---|
| **Diamond back moth** *(Plutella xylostella)*<br>**African bollworm** *(Helicoverpa armigera)*<br>**Semi-loopers** *(Chrysodeixis sp., Trichoplusia* spp.)<br>**Greater cabbage moth** *(Crocidolomia pavonana)*<br>**Armyworms** *(Spodoptera* spp.) | 500 mℓ/ha |
| **Remarks**<br>• Apply before pests reach damaging levels based on economic thresholds. Scout fields and repeat sprays if populations start to rebuild, with a minimum of five (5) days between applications.<br>• Do not make more than four (4) applications per season.<br>• Add a wetting agent to waxy cruciferous crops.<br>• For resistance management, alternate with insecticides with different modes of action. | |
| **Ground application:** Use sufficient water to obtain full-coverage of foliage. Apply in a minimum of 90 ℓ water/ha.<br>**Aerial application:** Apply in 30 - 40 ℓ water/ha. | |

**Comments:**

Apply as a full-cover spray for the control of codling moth. Use conventional orchard spray equipment which is correctly calibrated. Thorough wetting is essential. Commence applications at 75% petal drop for the first generation. For the second moth generation, commence with applications at the onset of this generation. Repeat applications fortnightly for a maximum of three (3) applications per generation. To prevent or retard the development of resistance, use products with different modes of action against the other two (2) moth generations. When **VOLIAM TARGO** is used for the last generation of a specific season, products with a different mode of action must be used for the first generation of the following season.

### 6.4.1 High volume application

The water volume to be applied per hectare must be calculated according to the tree row volume (TRV) formula:

$$\ell/\text{ha} = \frac{\text{tree height x tree diameter x 937}}{\text{row width}}$$

The TRV calculation is the water volume required when the trees are in full leaf.

**Water requirements per hectare as recommended according to the different growth stages of a tree:**

| Growth stage | % of TRV water requirements/ha |
|---|---|
| **From green tip to ± 30% blossom** | 60% |
| **From ± full blossom to ± middle November** | 80% |
| **From ± beginning December** | 100% |

### 6.4.2 Low-volume application

Ensure that the correct amount of **VOLIAM TARGO** per hectare is applied, do not apply in a water volume of less than ¼ of the TRV.

## 7. SUCCESSFUL CODLING MOTH CONTROL MANAGEMENT:

- **VOLIAM TARGO** can be used in conjunction with pheromone mating disruption technique.
- Codling moth resistance levels against organophosphates may vary in orchards. Control techniques should be adjusted accordingly.
- Do not neglect cultural practices such as pruning, thinning and the collecting and destroying of thinned and infested fallen fruit.
- Best results may be expected with **VOLIAM TARGO** if the recommended spray volumes are used.

**Apply the following anti-resistance strategy for the control of codling moth:**

- Apply compounds from different chemical groups against each moth generation.
- Three (3) **VOLIAM TARGO** applications at fortnightly intervals are recommended for the control of either the first or second moth generation.
- To ensure maximum efficacy, this program should not be interrupted by the use of other compounds.
- Ensure that the correct amount of **VOLIAM TARGO** per hectare is applied as calculated from the tree row volume (TRV) formula (see above).
- Chemistry with a different mode of action should be used to control the other codling moth generations where **VOLIAM TARGO** is not applied.



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