An emulsifiable concentrate contact insecticide with residual properties for the control of agricultural pests as indicated.

'n Emulgeerbare konsentraat kontakinsekddoder met nawerkinge eierskappe vir die beheer van lanbouplaae soos aangedui.

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL
fenvalerate (pyrethroid) 200 g/l fenvaleraat (piretroïed)

IRAC INSECTICIDE GROUP CODE 3 IRAC INSEKDODER GROEPKODE
FENVALERATE EC
Reg. No. L 7185 Act/Wet No. 36/1947
IRAC INSECTICIDE GROUP CODE / IRAC INSEKDODER GROEPKODE: 3

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL:
fenvalerate (pyrethroid) / fenvaleraat (piretroïed)……………………………………..……………… 200 g/l

Registration holder:
VILLA CROP PROTECTION (PTY) LTD.
PO Box / Posbus 10413
ASTON MANOR, 1630 Tel. (011) 396 2233

HARMFUL SKADELIK

WARNINGS
Withholding periods:

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>Minimum time between last application and harvest or feeding (f):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td>2 days</td>
</tr>
<tr>
<td>Potatoes</td>
<td>3 days</td>
</tr>
<tr>
<td>Beans and Peas</td>
<td>7 days</td>
</tr>
<tr>
<td>Apples, Pears and Cucurbitae [with Virol MO (L 5518) added]</td>
<td>14 days</td>
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<tr>
<td>Maize</td>
<td>24 days</td>
</tr>
<tr>
<td>Grapes, Grain sorghum, Cotton (f) and Sunflower</td>
<td>28 days</td>
</tr>
</tbody>
</table>

- Handle with care.
- Poisonous when swallowed, inhaled or absorbed through the skin.
- Extremely toxic to fish, wildlife and bees.
- Flammable - do not store or spray near open flames.
- Store under lock and key in a cool, dry place away from food and feedstuffs.
- Keep out of reach of children, uninformed persons and animals.
- Re-entry: Do not enter treated area within 1 day after treatment unless wearing protective clothing.
- In case of poisoning call a physician and make this label available to him/her.

Aerial application:
Notify all inhabitants in the immediate vicinity of the lands to be sprayed and issue the necessary warnings. Do not spray over or allow drift to contaminate water or adjacent areas.

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 pests to the remedy concerned, as well as by the method, time and accuracy of application. The registration holder further does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal 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, which could not have been foreseen in terms of the registration. Consult the supplier in event of any uncertainty.

PRECAUTIONS
- Do not inhale spray mist and avoid skin contact and eye splashes.
- Wear a face shield, rubber gloves and boots when handling the product, preparing and applying the spray mixture.
- Wash with soap and water after use or after accidental skin contact.
- Wash contaminated clothing after use.
- Do not eat, drink or smoke whilst mixing or applying or before washing hands and face and change of clothing.
- Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment.
• Clean applicator after use and dispose of wash water where it will not contaminate crops, grazing, boreholes, rivers or dams.

• **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10% of that of the container.

• Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.

• Destroy empty container by perforation and flattening.

• **Never** re-use container for any other purpose.

• Prevent contamination of food, feeds, drinking water or eating utensils.

**SYMPTOMS OF HUMAN POISONING**
Hypersensitivity, tremors, fibrillation of muscles, salivation, uncoordinated movement, nausea and/or vomiting and diarrhoea.

**FIRST AID TREATMENT**
• Remove patient from source of poisoning and keep the person calm and reassured.

• **Skin contact:** Remove contaminated clothing and rinse contaminated body area thoroughly with plenty of soap and cold water. Do not rub the skin.

• **Eye contact:** If substance gets into eyes, flush eyes with clean water for at least 15 minutes. **Seek medical attention if necessary**.

• If **swallowed:** If substance (water diluted mixture or concentrate) has been swallowed, wash the mouth with water, and give the patient copious amounts of water to drink. **Do not** induce vomiting due to the aromatic solvent. **Do not** administer milk, cream or substances containing vegetable or animal fats, which enhance the absorption of the chemical. **Take patient to nearest physician immediately**.

**NOTE TO PHYSICIAN**
Treat symptomatically and supportively. Gastric lavage can be applied. Give activated charcoal to drink.

**RESISTANCE WARNING**
**FENVALERATE EC** is a group code 3 insecticide. Any insect population may contain individuals naturally resistant to **FENVALERATE EC** and other group code 3 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **FENVALERATE EC** or any other group code 3 insecticide.

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 programmes.

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

Resistance management recommendation:
- Resistance of African bollworm (**Helicoverpa armigera**) to synthetic pyrethroids has been confirmed. As part of a strategy to prevent development of widespread resistance, the following guidelines must be adhered to for the control of **Helicoverpa armigera**:
  - **Cotton:** Synthetic pyrethroids must only be applied to cotton during the period 1st January to 1st March.
  - **All Other Crops:** Do not apply more than two applications per growing season.

- **For optimal control of susceptible bollworm populations, the larvae should not exceed 10 mm (1 cm) in length, at time of application.**

- If a pyrethroid spray gave ineffective control, do not re-spray with any synthetic pyrethroid, even at a corrective dosage rate. Use a product from a different chemical group.

**DIRECTIONS FOR USE:** Use only as directed.

Compatibility:
- Can be used in combination with most insecticides and miticides normally used for sucking insects and mite control.
- The compatibility of **FENVALERATE EC** with other products may be influenced by several factors. As factors influencing compatibility may vary, a physical compatibility test must always be performed before such tank mixtures are sprayed.
When FENVALERATE EC is used in conjunction with any other agricultural remedy, all WARNINGS, PRECAUTIONS and DIRECTIONS FOR USE mentioned on that label, must be adhered to.

Mixing instructions:
- Half fill the spray tank with clean water.
- Measure out the required quantity of FENVALERATE EC and premix this with at least 10 litres of water.
- Add this to the spray tank while agitating the mixture.
- Fill the spray tank while maintaining agitation to ensure thorough mixing of the spray mixture before spraying commences.
- Maintain agitation during the whole spraying operation.

General directions:
- Use at all times correctly calibrated and suitable equipment in good working order to ensure complete wetting of all parts of the plant.

Aerial application:
Aerial application of FENVALERATE EC may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Pesticides). Ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria be met:
- **Volume:** A spray mixture volume of 30 litres per hectare is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy, or be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** 30 to 40 droplets per cm² must be recovered at the target area.
- **Droplet size:** A droplet spectrum with a VMD of 250 to 280 micron is recommended. Limit the production of fine droplets, less than 150 micron (high drift and evaporation potential), to a minimum.
- The use of a suitable drift retardant and/or low drift nozzles (e.g. straight stream nozzles) is recommended. In case of fixed-wing aircraft flying at a speed faster than 130 mph, the maximum deflection angle of nozzles or spray stream, as measured from a horizontal straight backwards orientation may not exceed 30 degrees. In the case of slower flying fixed wing aircraft, the maximum deflection angle as described above, may not exceed 55 degrees.
- **Flying height:** Maintain the height of the spray boom at 3 to 4 metres above the target. Do not spray when aircraft dives, is in a climb or when banking.
- Use suitable atomising equipment that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest possible Relative Span.
- Position all the atomisers within the inner 60 to 75 % of the wingspan to prevent droplets from entering the wingtip vortices.
- The difference in temperature between the wet and dry bulb thermometer, of a whirling hygrometer, should not exceed 8 °C.
- Stop spraying if the wind speed exceeds 15 km per hour.
- Stop spraying under turbulent, unstable and dry conditions during the heat of the day.
- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80 % and above) may lead to the following:
  a) reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage),
  b) damage to other sensitive crops and/or non-target areas through drifting of the suspended spray cloud away from the target field.
- Ensure that the aerial spray operator knows exactly which fields to spray.

Obtain an assurance from the aerial spray operator that the above requirements will be met and that relevant data will be compiled in a logbook and kept for future reference.
## Application Rates

<table>
<thead>
<tr>
<th>Crop / Pest</th>
<th>Dosage Rate</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All crops</strong></td>
<td></td>
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</table>
| Cutworm | | **Overall ground application:**  
Apply in 300 litres of water only when the top 3 cm of the soil is moist. |
| 0 to 20% clay | 100 m³/ha | | **Aerial application:**  
Apply in 30 litres of water per hectare only when the top 3 cm of the soil is moist. |
| > 20% clay | | |
| 0 to 20% clay | 125 m³/ha | | |
| > 20% clay | 140 m³/ha | | |
| **High Volume** | | |
| 0 to 20% clay | 120 m³/ha | |
| > 20% clay | 140 m³/ha | |
| **Apples & Pears** | | Use 2500 to 3500 litres of spray mixture per hectare.  
Apply two sprays: the first at 75% petal fall and the second 4 weeks later. A third spray can be applied in mid-January to prevent late season damage. Initially this treatment will also control African bollworm, Leafrolllers and Codling moth. **Caution:** Toxic to bees. |
| Banded fruit weevil (snout beetles) | High volume:  
15 m³ / 100 l water  
(375 to 525 m³ / ha) | Use 2500 to 3500 litres of spray mixture per hectare.  
Apply two sprays: the first at 75% petal fall and the second 4 weeks later. A third spray can be applied in mid-January to prevent late season damage. Initially this treatment will also control African bollworm, Leafrolllers and Codling moth. **Caution:** Toxic to bees. |
| **Codling moth** | High Volume:  
12 m³ / 100 l water  
(300 to 420 m³ / ha) | High Volume:  
Use 2500 to 3500 litres of spray mixture per hectare.  
Apply two sprays: the first at 75% petal fall and the second 4 weeks later. A third spray can be applied in mid-January to prevent late season damage. Initially this treatment will also control African bollworm, Leafrolllers and Codling moth. **Caution:** Toxic to bees. |
| Low volume:  
250 to 350 m³ / ha | | Low volume:  
Use in 400 to 800 litres of water per hectare.  
Commence application at 75% petal fall. Repeat every 14 days. African bollworm and Leaf rollers will also be controlled. **Caution:** Toxic to bees. |
| **Beans & Peas** | | **Resistance Warning:** Refer to “Resistance management recommendation” as described above.  
Scout fields from first flowering using a sample size of 25 plants per hectare. Commence treatment when 10% of the plants are infested with an average of 1 to 2 larvae. Scouting after rain and after application is still necessary; re-spray if necessary.  
**Ground application:**  
Apply in not less than 300 litres of water per hectare.  
**Aerial application:**  
Apply in 30 litres of water per hectare. |
| African bollworm | Ground application:  
150 m³ / ha | | |
| Aerial application:  
150 m³ / ha | | | |
| **Cucurbitae** | | It is essential that a mistblower be used in the application. Start spraying within 3 days of emergence of the crop. Apply at 5-day intervals for the first 5 sprays thereafter at 7-day intervals. Ensure thorough wetting of both sides of the leaves of the plants. Use 250 to 500 litres spray mixture per hectare depending on plant size. Use high pressure (700 to 800 KPa) in order to obtain the right droplet size. |
| Non-persistent aphid-transmitted viruses | 100 m³ / 100 l water  
PLUS  
1 l VIROL MO (L 5518) | | |
| **Grain sorghum** | | **Resistance Warning:** Refer to “Resistance management recommendation” as described above.  
Apply in 30 litres of water per hectare.  
Apply when pest is noticed. If bollworms are concealed in the ear, control may be less effective. Later infestation may require a second application. |
| African bollworm | Aerial application:  
200 m³ / ha | | |
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<th>Crop / Pest</th>
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</tr>
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<tbody>
<tr>
<td><strong>Maize</strong></td>
<td></td>
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<tr>
<td>Stalk borer (Busseola fusca)</td>
<td><strong>Ground application:</strong> 4 m³ / 100 m row. Apply in sufficient water i.e. 3 l water / 100 m row</td>
<td>Corrective treatment against young caterpillars, is based on scouting for eggs on plants. Apply 7 to 10 days after 2.5 % or more plants are found to be infested with eggs. Do weekly scouting from 2 to 7 weeks after crop emergence by inspecting at least 100 plants at random per field. If eggs have hatched, spray at the first signs of infestation. Direct spray into the funnel. A second application 10 to 14 days after the first may be necessary.</td>
</tr>
<tr>
<td></td>
<td><strong>Aerial application:</strong> 250 m³ / ha</td>
<td>For reducing cob damage in the January/February period apply when the pest is noticed. Apply in at least 30 litres of water per hectare.</td>
</tr>
</tbody>
</table>

<p>| Cotton | RESISTANCE WARNING: Refer to “Resistance management recommendation” as described above. In order to comply with the principles of pest management and integrated control measures, FENVALERATE EC is intended for use during the period of flowering (from peak flowering until boll split), approximately 12 to 22 weeks after plant emergence. FENVALERATE EC is primarily intended for use as a preventive control measure, against all bollworm larvae based on weekly scouting, as well as corrective control if necessary or as a regular spray program applied at 7-day (preferably) intervals. Normally a bollworm spray program will commence at the beginning of flowering, i.e. about 6 weeks after emergence. From then until peak flowering use registered non-pyrethroid remedies. Scouting: Apply as determined by scouting for eggs, i.e. for African bollworm an average of 0.5 eggs per plant; Red bollworm 0.25 eggs per plant; larvae of African, Red and Spiny bollworm, when two or more larvae are found on 24 plants during scouting. Scouting should be done on 24 plants at random in lands up to 15 hectare in extent, at weekly intervals from flowering until boll splits. Stainers will be controlled during regular applications for control of bollworm. |
| All bollworms (i.e. African, Red and Spiny bollworm) &amp; Stainers | <strong>A. PREVENTIVE TREATMENT:</strong> A weekly application programme. |
| | <strong>Ground application:</strong> 100 m³ / 100 l water | |
| | <strong>Aerial application:</strong> 200 m³ / ha | |
| | <strong>Ground application:</strong> | Apply 200 litres of spray mixture per hectare. |
| | <strong>Aerial application:</strong> | Apply in 30 litres of water per hectare. |
| <strong>B. CORRECTIVE TREATMENT:</strong> | |
| | <strong>Aerial application:</strong> 250 m³ / ha for cotton smaller than 60 cm | Apply as a corrective spray as soon as larvae reach the economic threshold. Later instar Red bollworms established inside bolls may not be controlled successfully. Success of treatment can be related to application, density of crop foliage, stand and instar of caterpillars. Allow up to 4 days for FENVALERATE EC to achieve its full effect. A corrective application is to be considered an emergency measure and thereafter the regular program must be resumed irrespective of the crop stage. |
| | <strong>Aerial application:</strong> 500 m³ / ha for cotton taller than 60 cm or older than 12 weeks | |
| | <strong>Aerial application:</strong> | Apply in 30 litres of water per hectare. |
| African &amp; Spiny bollworm | <strong>Aerial application:</strong> 500 m³ / ha | Apply in 30 litres of water per hectare. |</p>
<table>
<thead>
<tr>
<th>Crop / Pest</th>
<th>Dosage Rate</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Potatoes</strong></td>
<td><strong>Low volume application:</strong> 100 ml / 100 l water</td>
<td>Commence application as soon as plants are one month old or sooner in case of early infestation. This rate can also control African bollworm (RESISTANCE WARNING: Refer to “Resistance management recommendation” as described above) and Cutworm (Western Cape) and will suppress Aphids. Repeat application every 14 days. Spray volume depends on plant size. Plants should be ridged at least twice during the growing season.</td>
</tr>
<tr>
<td><strong>Potato tuber moth</strong></td>
<td><strong>Apply 250 to 400 l spray mixture / ha</strong></td>
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<tr>
<td><strong>Aerial application:</strong> 375 ml / ha</td>
<td>Apply in at least 30 l water / ha</td>
<td></td>
</tr>
<tr>
<td><strong>Sunflower</strong></td>
<td><strong>Aerial application:</strong> 375 ml / ha</td>
<td>RESISTANCE WARNING: Refer to “Resistance management recommendation” as described above. Apply only when larvae are on the leaves outside the flower heads. Apply in at least 30 litres of water per hectare.</td>
</tr>
<tr>
<td><strong>African bollworm</strong></td>
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<td></td>
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<tr>
<td><strong>Tomatoes</strong></td>
<td><strong>High volume:</strong> 15 ml / 100 l water (150 to 600 ml / ha)</td>
<td>RESISTANCE WARNING: Refer to “Resistance management recommendation” as described above. Apply 1000 to 4000 litres of spray mixture per hectare depending on plant size and density. Commence application as soon as eggs or larvae are noticed. Repeat at 7 to 10-day intervals. Caution: Toxic to bees.</td>
</tr>
<tr>
<td><strong>African bollworm</strong></td>
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<tr>
<td><strong>Wine &amp; Table grapes</strong></td>
<td></td>
<td>Apply as a full cover application ensuring thorough coverage of all parts of the plant. Apply first spray when the first signs of movement and/or feeding of weevils are detected. Repeat in 21 to 28 days when necessary. The first occurrence of weevils varies from area to area but can be expected from mid-October to mid-November. Caution: Toxic to bees.</td>
</tr>
<tr>
<td><strong>Weevils (snout beetles)</strong></td>
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</tbody>
</table>

- The label instructions of VIROL MO (L 5518) must be adhered to.

**VIROL MO** is a registered product of / is ’n geregistreerde produk van Universal Crop Protection (Pty) Ltd.