Abalone 18 EC

Reg. No.: L 7458 Act / Wet No. 36 of/van 1947

An emulsifiable concentrate translaminar insecticide/acaricide with stomach and direct contact action for the control of citrus thrips, American leafminer and spider mites on crops, flowers and ornamentals, as listed.

‘n Emuleerbaar konsentraat translaminêre insekdoder/mytdoder met maag- en direkte kontak aksie, vir die beheer van sitrus blaaspootjie, Amerikaanse blaarmyner en spinmyte op gewasse, blomme en sierplante, soos aangedui.

<table>
<thead>
<tr>
<th>IRAC INSECTICIDE GROUP CODE:</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRAC INSEKDODERGROEP KODE:</td>
<td></td>
</tr>
</tbody>
</table>

ACTIVE INGREDIENT/ AKTIEWE BESTANDDEEL:
Abamectin.................................................. 18 g/ℓ.................................................... Abamektien

Registration holder / Registrasiehouer:
ARYSTA LifeScience South Africa (Pty) Ltd
7 Sunbury Office Park,
Off Douglas Saunders Drive, La Lucia Ridge,
South Africa, 4019
Tel: 031 514 5600

Contents/Inhoud

Batch No. / Lot Nr.:
Date of manufacture: / Datum van vervaardiging:

U.N. No. 2902

READ THE LABEL IN DETAIL BEFORE OPENING THE CONTAINER. / LEES DIE ETIKET VOLLEDIG VOORDAT DIE HOUER OOPGEMAAK WORD.
For full particulars, see enclosed leaflet. / Vir volledige besonderhede, sien ingeslote pamflet.
ABALONE 18 EC
Reg. No.: L 7458 Act/Wet No. 36 of/van 1947

IRAC INSECTICIDE GROUP CODE / IRAC INSEKDODERGROEP KODE: 6

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL:
abamectin / abamektien………………. 18 g/ℓ

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VERY TOXIC                  UITERS GIFTIG

WARNINGS:
Allow the following number of days between the last application and harvest:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples</td>
<td>14</td>
</tr>
<tr>
<td>Citrus</td>
<td>3</td>
</tr>
<tr>
<td>Cotton</td>
<td>21</td>
</tr>
<tr>
<td>Pears</td>
<td>7</td>
</tr>
<tr>
<td>Strawberries</td>
<td>3</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>3</td>
</tr>
</tbody>
</table>

• Handle with extreme care.
• Toxic if swallowed, inhaled or absorbed through the skin.
• May cause eye and skin irritation.
• Unprotected workers must vacate the area before it is treated.
• Store in a cool place away from food, feeds and seed and out of direct sunlight.
• Store under lock and key.
• Keep out of the reach of children, uninformed persons and animals.
• Flammable – do not store and handle near heat or open flame.
• Toxic to fish and wildlife.
• Toxic to bees exposed to direct spray contact (do not spray during high bee activity).
• Do not allow animals to feed on treated foliage.
• Do not use in orchards inter-planted with other crops.
• Re-entry: Do not enter treated area within 2 days after treatment unless wearing protective clothing.
• In case of poisoning, contact a physician and make this label available.

Aerial application:
Notify all inhabitants of the immediate area to be sprayed and issue the necessary warnings. Do not spray over or allow to contaminate adjacent areas, rivers or dams. Do not apply ABALONE 18 EC by aerial application to orchards.

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 climatic and storage conditions, quality of dilution water, incompatibility with other substances not indicated on the label and the occurrence of resistance of the pest 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, 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 or registration holder in the event of any uncertainty.
PRECAUTIONS:
• Do not inhale fumes and/or spray mist.
• Avoid skin and eye contact.
• Wear protective clothing, face shield, rubber gloves and rubber boots when mixing and spraying the spray mixture.
• Wash with soap and water after use and accidental skin contact.
• Wash contaminated clothing after use.
• Do not eat, drink or smoke while mixing or applying the product or before washing hands and face and changing clothing.
• Do not spray during periods when bee activity is high.
• Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment.
• Clean application equipment after use. Dispose of wash water where it will not contaminate crops, grazing, rivers, dams and boreholes.
• Triple rinse empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain 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 rinsings to the contents of the spray tank before destroying the container in the described manner.
• Destroy the empty container by perforation and flattening and dispose of it in a safe manner.
• Never re-use the empty container for any other purpose.
• Prevent contamination of food, feeds, drinking water and eating utensils.

SYMPTOMS OF HUMAN POISONING:
Possible signs or symptoms of human poisoning initially would be dilation of the pupils, slow breathing and sedation. More severe poisoning may cause lethargy, muscle tremors and convulsions.

FIRST AID TREATMENT:
Get medical attention in all cases.
Eyes: Flush eyes with clean, flowing water for at least 20 minutes, occasionally lifting upper and lower lids, until no evidence of chemicals remains. If irritation occurs and persists, obtain medical attention.
Skin: Remove contaminated clothing and rinse contaminated body area thoroughly with plenty of soap and cold water, until no evidence of chemical remains. Do not rub skin. Obtain medical attention if irritation occurs and persists.
Inhalation: Remove patient to a well ventilated area away from source of poisoning. Give artificial respiration or closed chest cardiac massage if necessary. Maintain open airway passages.
Ingestion: Do not induce vomiting. Get medical attention immediately.

NOTE TO PHYSICIAN:
There is no known specific antidote. Emetine syrup or ephedrine may be taken. Do not treat with drugs which can increase the activity of GABA, such as barbital or propyl valenic acid in emergency. Treat supportively and symptomatically.

RESISTANCE WARNING:
For resistance management, ABALONE 18 EC is a group code 6 insecticide. Any insect/mite population may contain individuals naturally resistant to ABALONE 18 EC and other group code 6 insecticides. The resistant individuals can eventually dominate the insect/mite population if these insecticides are used repeatedly. These resistant insects/mites may not be controlled by ABALONE 18 EC or any other group code 6 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/mite control programmes.

It is recognized that resistance of insects and mites to insecticides can also result from enhanced metabolism, reduced penetration or behavioural changes that are not linked to any site of action classification but are specific for individual chemical groupings. Despite this, alteration of compounds from different chemical classes remains a viable management technique.

Due to the inherent risk of resistance development to any product, it is strongly recommended that ABALONE 18 EC is used in a good resistance prevention programme. This programme should include the use of products with different modes of action and from different chemical groups. Applications should only be made based on scouting results for the pests.

**Do not apply:**
- more than 3 sprays of ABALONE 18 EC per season on cotton,
- more than 2 sprays per season on citrus,
- more than 4 sprays of the lowest rate recommended per season on apples and pears,
- more than 4 sprays per growing season on strawberries and
- more than 5 sprays per season on tomatoes.

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

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

- Use only clean water in the spray mixture.
- Always ensure that spray equipment is clean, free of sediment and correctly calibrated before spraying.
- ABALONE 18 EC is effective for the control of adult and immature stages of spider mites, thrips and larval stages of American leafminer.
- Thorough and even spray coverage of the crop is essential.
- ABALONE 18 EC is rapidly absorbed into the plant issue.
- Over-spraying may result in less effective control due to loss of active material because of run-off from the leaf surfaces.
- ABALONE 18 EC can be used as preventative or corrective treatment in cotton or tomatoes for the control of red spider mites.
- ABALONE 18 EC has the minimum effect on natural enemies of mites, thrips and American leafminer.
- On apples and pears, ABALONE 18 EC is most suited for use in the Integrated Pest Management (IPM) programme, as well as where adequate control of spider mites is not being maintained by natural enemies.
- ABALONE 18 EC is in general slow acting and although mites and leafminers become immobilised soon after exposure, between 3 and 5 days is necessary, depending on ambient temperatures, to achieve maximum mortality. During this period feeding and plant damage by the pest is minimal.

**Compatibility:**
- ABALONE 18 EC may be mixed with molasses for aerial application on cotton.
- If tank mixtures with synthetic pyrethroids are applied on cotton, use the lowest
recommended pyrethroid dose for weekly protection.

- **ABALONE 18 EC** is compatible must be mixed with an approved light mineral spray oil on apples, pears (see ‘Apples’ and ‘Pears’ under directions for ‘Application’) and citrus.
- **ABALONE 18 EC** does not require the addition of surfactants/adjuvants to the spray mixture.
- Since all combinations and sequences of other remedies in tank mixtures used have not been fully evaluated, it is recommended not to tank mix with **ABALONE 18 EC** until greater experience is gained. Consult your nearest distribution for latest information on spray tank mixtures.

**Mixing Instructions:**
- Measure out the required quantity of **ABALONE 18 EC** and premix this with at least 10 litres water.
- Half fill the spray tank with clean water and add the premixed **ABALONE 18 EC** to the spray tank.
- If any other product e.g. light mineral spray oil is to be mixed with **ABALONE 18 EC** the required volume of that product must be premixed in similar fashion.
- **ABALONE 18 EC** and oil must be premixed with each other before adding to the spray tank.
- Agitate the water in the spray tank and add the premixed product(s) to the tank.
- Fill the spray tank with clean water while maintaining agitation to ensure thorough mixing.
- Maintain agitation during spraying.
- Use the prepared spray mixture immediately. Do not allow to stand overnight.
- **ABALONE 18 EC** can be mixed with waters of different pH values and hardness, normally encountered in agricultural conditions.
- The optimal pH values are between 5 and 9.

**APPLICATION:**
- Always ensure the spray equipment is clean.
- Remove sediments e.g. residues of pesticides, such as left overs of wettable powers, rust and dust from spray tanks before using **ABALONE 18 EC**.
- Avoid the use of hard or muddy water with a high colloidal content derived from soils high in organic matter.
- Correctly calibrate all sprayers under field conditions prior to application.
- It is not necessary to spray to the point of run-off, but essential to ensure even and complete coverage of the target plants.
- **Even applications are essential for good results.**

**Ground Application:**
- **ABALONE 18 EC** can be applied with conventional ground equipment (tractor mounted booms, knapsack, etc.).
- Optimum spray deposits are obtained with ground equipment calibrated to spray volume of 50 to 3000 litres per hectare with suitable nozzles to ensure adequate coverage.
- When drift is a problem, do not exceed 2 bar.
- Use only the pressures recommended for specific nozzles to avoid drift.

**Cotton:**
**Ground Application:**
- Apply in up to 200 litres water per hectare, depending on the spray equipment used.
- **ABALONE 18 EC** has been shown not to have a detrimental effect on lint quality.

**“Tramline” Application:**
- Apply to dryland cotton planted in “tramlines” using 50 to 100 litres spray mixture per hectare, depending on plant size.
• Position at least 5 hollow-cone nozzles of suitable size over the tramlines.
• One nozzle must spray over the top of each row and one nozzle must spray between the two rows and two nozzles must be positioned to point 45 degrees upwards, mounted on drop-arms on the outside of each of the two rows.

**Tomatoes:**
• Use a fine spray at high pressure and only apply to point of incipient run-off.

**Apples and Pears:**
• Apply as a high volume, high pressure cover spray to point of incipient run-off.
• Add 0,25 % by volume of a light mineral spray oil to the spray mixture.
• Thorough coverage is essential.
• It is recommended not to apply captan or sulphur sprays, 14 days prior to or after an application of oil as the oil may cause spotting on the fruit and leaves.

**Strawberries:**
• Apply as a high volume, high pressure cover spray.
• Thorough coverage of both the upper- and undersides of leaves is required to control spider mites.
• Thorough coverage is essential.

**Citrus:**
• As **ABALONE 18 EC** is most effective when ingested by the pest, therefore maximum efficacy may only occur three to four days after treatment.
• For this reason **ABALONE 18 EC** should not be used for the control of high numbers of citrus thrips where a knock-down treatment is required.
• Applications should therefore be made at first sign of thrips presence.

**Aerial Application (on Cotton Only):**
Aerial application of **ABALONE 18 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.
• **Flying height:** Maintain the height of the spray boom at 3 to 4 metre 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 thermometers, of a whirling hygrometer, should not exceed 8 °C.
• Stop spraying if the wind speed exceeds 15 km/h.
• 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 DOSAGE RATES:

<table>
<thead>
<tr>
<th>CROP/PEST:</th>
<th>DOSAGE RATE:</th>
<th>REMARKS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLES &amp; PEARS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red spider mite (Tetranychus urticae) &amp; European red mite (Panonychus ulmi)</td>
<td>35 ml plus 250 ml light mineral oil/100 l water (750 - 1500 ml/ha plus 0,25 % oil)</td>
<td>Apply as soon as the red spider mite population reaches the economic threshold level (refer to “Economic Threshold Levels” below). Repeat when necessary. If less than 2150 litres spray mixture per hectare is applied, use a minimum of 750 ml ABALONE 18 EC plus 0,25 % spray oil per hectare in sufficient water to obtain thorough coverage. Never exceed 1,5 litres ABALONE 18 EC per hectare per application or 3,0 litres ABALONE 18 EC per hectare in one growing season. Apples: Apply only to orchards where the IPM programme is not maintaining effective control of mites.</td>
</tr>
<tr>
<td>CITRUS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citrus thrips (Scirtothrips aurantii)</td>
<td>10 ml plus 300 ml light or medium grade narrow distillation range mineral spray oil/100 l water</td>
<td>Apply ABALONE 18 EC when thrip numbers start to increase. Apply as a light cover spray and avoid run off. Do not apply more than two consecutive applications or three times in one growing season. ABALONE 18 EC should be alternated with other thrips remedies to retard resistance development. Do not use when more than 40 % fruit are infested.</td>
</tr>
<tr>
<td>STRAWBERRIES:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red spider mite (Tetranychus urticae)</td>
<td>1200 ml/ha</td>
<td>Apply ABALONE 18 EC in at least 500 litres water per hectare as a high volume, high pressure, full cover spray at first signs of infestation. Apply initially 2 sprays, 7 to 10 days apart. Repeat as necessary. Thorough coverage of all plant surfaces is essential. Never exceed 4,8 ml ABALONE 18 EC per hectare per growing season.</td>
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<tr>
<td>FLOWERS &amp; ORNAMENTALS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red spider mite (Tetranychus urticae)</td>
<td>25 ml/100 l water (560 – 1500 ml/ha)</td>
<td>Apply ABALONE 18 EC at first signs of infestation as a high volume, high pressure, full cover spray to point of run-off. Use a minimum of 2250 litres spray mixture per hectare. If less than 2250 litres of spray mixture are applied (i.e. when spraying young plants), a</td>
</tr>
</tbody>
</table>
American leafminer
(*Liriomyza trifolii*)

minimum of 560 ml ABALONE 18 EC per hectare must be applied in sufficient water to provide a full cover spray. **Never** exceed 1500 ml ABALONE 18 EC per hectare. Ensure that all foliage surfaces are thoroughly wetted by the spray to point of run-off.

**Red spider mite:** Repeat application as necessary. **American leafminer:** Repeat application every 7 days or as needed to maintain control.

**ECONOMIC THRESHOLD LEVELS:**

<table>
<thead>
<tr>
<th>APPLES:</th>
<th>2 adult females per leaf up to the end of March and thereafter 1 female per leaf.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pears:</td>
<td>1 adult female per leaf throughout the season.</td>
</tr>
<tr>
<td>Cotton:</td>
<td>Weeks after emergence: 3 to 10 12 14 16 18 20</td>
</tr>
<tr>
<td></td>
<td>Red spider mite population index: 0,5 0,8 1,1 1,4 1,7 2,0</td>
</tr>
</tbody>
</table>

**DETERMINE RED SPIDER MITE POPULATION INDEX:**

- Randomly select 48 plants per land.
- Count the number of female mites on three leaves per plant.
- Calculate the average number of mites on 48 plants per land.
- Determine the red spider mite population index per plant as follows:

<table>
<thead>
<tr>
<th>Total number of female mites/3 leaves/plant:</th>
<th>Spider Mite Population Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 adult females:</td>
<td>0</td>
</tr>
<tr>
<td>1 to 10 adult females:</td>
<td>1</td>
</tr>
<tr>
<td>11 to 30 adult females:</td>
<td>2</td>
</tr>
<tr>
<td>31 and more:</td>
<td>3</td>
</tr>
</tbody>
</table>