

READ THE LABEL BEFORE USE. KEEP OUT OF REACH OF CHILDREN AND ANIMALS.



Insecticide

# BIOMECTIN® 18 EC

Reg. No. L 7979 Act No. 36 of 1947  
N-AR 1112 / W1301429

6 :08/04/2024 – Feb2025

An emulsifiable concentrate insecticide with translaminar activity for the control of various pests in crops as indicated.

## ACTIVE INGREDIENT

abamectin (avermectin)

18 g/l

GROUP

6

INSECTICIDE



**DANGER**

### Hazard Statements:

Flammable liquid and vapour.  
Toxic if swallowed and inhaled.  
May be fatal if swallowed and enters airways.  
Toxic in contact with skin.  
Causes mild skin irritation.  
Causes serious eye damage.  
Suspected of damaging fertility or the unborn child.  
Causes damage to the central nervous system.

May cause damage to the central nervous system through prolonged or repeated exposure.  
Very toxic to aquatic life with long lasting effects.

### Precautionary Statements:

Use only outdoors or in a well-ventilated area.  
Wear impervious rubber gloves and boots, protective clothing, and chemical safety goggles.



UN Number: 2903

Registration holder: VILLA CROP PROTECTION (PTY) LTD.  
Co. Reg. No. 1992/002474/07  
65 Botes Road, Glen Marais, Kempton Park, 1619  
Tel. (011) 396 2233  
Website: [www.villacrop.co.za](http://www.villacrop.co.za)

IN CASE OF POISONING / 24 HR EMERGENCY NUMBERS  
Griffon Poison Information Centre (National) +27 82 446 8946  
Poison Information Helpline (National) +27 861 555 777  
24 Hr Transport / Spill emergency no: (Hazcall24) +27 86 044 4411  
(Client: Villa Crop Protection)

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

DIRECTIONS FOR USE ENCLOSED  
Batch Number: \_\_\_\_\_  
Expiry/Date: \_\_\_\_\_  
Date of Manufacture: \_\_\_\_\_

**BIOMECTIN® 18 EC**

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N-AR 1112 / W1301429

IRAC INSECTICIDE GROUP CODE: 6

**ACTIVE INGREDIENT:**

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65 Botes Road, Kempton Park, 1619

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**WARNINGS****Withholding periods:**

Minimum number of days between the last application and harvest:	
Apples and Potatoes	14 days
Cotton	21 days
Citrus and Pears	7 days
Tomatoes and Strawberries	3 days
Barley and Wheat	30 days
Grapes (Wine and Table)	14 days

**THE MAXIMUM RESIDUE LEVELS WILL NOT BE EXCEEDED, PROVIDED APPLICATIONS ARE APPLIED AS HEREWITH PRESCRIBED. WHEN FRUIT IS DESTINED FOR THE EXPORT MARKET, THE INSTITUTION OF CONCERN MUST BE CONTACTED, PRIOR TO THE USE OF BIOMECTIN® 18 EC IN A SPRAY PROGRAMME.**

**Hazard statements:**

Flammable liquid and vapour.
Toxic if swallowed and if inhaled.
May be fatal if swallowed and enters airways.
Toxic in contact with skin.
Causes mild skin irritation.
Causes serious eye damage.
Suspected of damaging fertility or the unborn child
Causes damage to central nervous system.
May cause damage to central nervous system through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

- Handle with care.
- Do not graze treated areas.
- Toxic to wildlife.
- **Toxic to bees** coming in contact with the spray mist. Do not apply when bees are most active. Do not direct spray towards beehives.
- Store in a cool, dry, well-ventilated place in the original container, tightly closed.
- Store away from food, feeds, seed, fertilizers and other agricultural remedies.
- Keep out of reach of children, uninformed persons and animals.
- Re-entry: Do not enter treated field within 1 day after application unless wearing protective clothing.
- Do not use in situations where the target crop is interplanted with other crops for which the use of **BIOMECTIN® 18 EC** is not registered.
- **In case of poisoning call a physician immediately and make this label available to him/her.**

**Aerial application:**

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

**Do not use aerial application in apples, pears or grapevines.**

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, compatibility with other substances not indicated on the label and the occurrence of resistance of the pest to the remedy concerned, as well as by the method, time and accuracy of the application. The registration holder furthermore, does not accept responsibility for damage to crops, vegetation, and the environment or harm to man or animal or for the 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 uncertainty.

## **PRECAUTIONS**

### **Precautionary statements:**

Obtain, read and follow all safety instructions before use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid breathing fume, mists, vapours or spray.
Wash hands thoroughly after handling. Do not touch eyes.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release into the environment.
Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
IF SWALLOWED: Get emergency medical help immediately.
IF ON SKIN: Wash with plenty of water and non-abrasive soap.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [shower].
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get emergency help immediately.
Rinse mouth. Do NOT induce vomiting.
If skin irritation occurs: get medical help.
In case of fire: Use carbon dioxide, dry chemical or foam to extinguish.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up. Keep cool.
Dispose of contents/container to suitable landfill in accordance with local regulations.

- Prevent drift onto other crops, grazing, rivers, dams and any other area not under treatment.
- Clean applicator thoroughly after use and dispose of wash water where it will not contaminate food, grazing, rivers or dams.
- **TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler ([www.croplife.co.za](http://www.croplife.co.za)). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.
- Prevent contamination of food, feeds, drinking water and eating utensils.

<b>Relevant hazardous components:</b>	
Abamectin	18 g/l
Methylated alcohol	< 200 g/l
Solvento	< 650 g/l
Phenylsulphonate salt	< 40 g/l

**In case of poisoning, call the following number:** +27 82 446 8946 (Griffon Poison Information Centre) or +27 861 555 777 (Poison Information Helpline).

**In case of a chemical spill call the following 24 Hr Transport / Spill emergency number:** +27 86 044 4411 (Hazcall24 / Client: Villa Crop Protection).

### **SYMPTOMS OF HUMAN POISONING**

May cause irritation of the eyes, nose, respiratory tract and skin. Prolonged and repeated exposure may cause headache and dizziness.

### **FIRST AID TREATMENT**

- **Get medical attention in all cases.**
- **Skin:** Remove contaminated clothing and rinse contaminated body area thoroughly with non-abrasive or mild detergent and large amounts of water until no evidence of chemical remains. Do not rub the skin. **Get medical attention if irritation occurs and persists.**
- **Eyes:** Flush eyes with clean water for at least 20 minutes, occasionally lifting upper and lower lids. If irritation occurs and persists, obtain medical attention if necessary.
- **Inhalation:** Remove patient from source of contamination and keep him/her calm and at rest. Keep air passage open. **Get medical attention immediately.**
- **Ingestion:** **Get medical attention immediately.** Do not induce vomiting due to aromatic solvent. Do not give anything by mouth. If the person is alert, rinse mouth thoroughly with water.

### **NOTE TO PHYSICIAN**

No specific antidote available. Treat symptomatically to maintain life functions. The product contains a solvent that may cause chemical pneumonitis if aspirated into lungs. Watch for delayed onset of pulmonary oedema. If ingested, perform gastric lavage and administer activated charcoal.

### **GENERAL INSTRUCTIONS**

This product is not systemic but moves quickly into leaves following application. It is important that thorough coverage is achieved so that the maximum amount of product can be deposited on the leaf surface for uptake and subsequent ingestion by sucking Mites.

### **RESISTANCE WARNING**

It is known that early development of Mite resistance may occur if one particular miticide and miticides from one particular chemical group are continually used. For this reason, it is recommended that this product be applied no more than recommended in this label per season. A second and more applications are only recommended where Mite pressure is very high. It is also recommended to alternate this product with miticides from a different chemical group.

**BIOMECTIN® 18 EC** is a group code 6 insecticide. Any insect population may contain individuals naturally resistant to **BIOMECTIN® 18 EC** and other group code 6 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **BIOMECTIN® 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 control programmes.

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

Since occurrence of resistant individuals is difficult to detect prior to use, **Villa Crop Protection (Pty) Ltd** accepts no liability for any losses that may result from the failure of this product to control resistant insects.

### **Mode of Action:**

**BIOMECTIN® 18 EC** is an emulsified concentrate which allosterically activates glutamate-gated chloride channels (GluCl<sub>s</sub>) resulting in increased chloride ion flow and causing paralysis. It is an effective insecticide,

acaricide and nematicide active by both contact and ingestion, limited systemicity, but exhibits translaminar mobility.

### **USE RESTRICTION**

**BIOMECTIN® 18 EC** is registered for the control of Leafminer in wheat and barley, grown under irrigation in the Douglas and Prieska areas for use only by members of the Griqualand West Cooperative (GWK Ltd.). The efficacy of the product for this use has not been evaluated fully and Villa Crop Protection (Pty) Ltd. does not take responsibility in case of lack of efficacy.

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

#### **NOTICE TO USER:**

Read the entire label before application. This agricultural remedy is to be used only in accordance with the instructions on the label. It is an offence under the Act to use this agricultural remedy for any purpose in a manner contrary with the directions on the label.

#### **Compatibility:**

- **BIOMECTIN® 18 EC** is compatible with **Villa 51, Charge** and **MASTERLOCK®** (L 10496).
- The full range of compatibility of **BIOMECTIN® 18 EC** with other remedies is not known; therefore, do not use it in tank mixtures with products other than those mentioned on this label.
- **Do not** apply **Captab** (captan) or sulphur sprays within 2 weeks before or after applying **BIOMECTIN® 18 EC** plus oil as fruit and/or leaf spotting may result.
- In **cotton**, molasses may be used with **BIOMECTIN® 18 EC** for aerial application.
- Tank mixtures containing synthetic pyrethroids should contain the lowest pyrethroid dose rate for weekly protection.
- **Do not** add adjuvants or surfactants not listed in this label, to spray mixtures of **BIOMECTIN® 18 EC**.
- Consult the supplier for the latest information on the compatibility of **BIOMECTIN® 18 EC**.

#### **Mixing instructions:**

- Half fill the spray tank with clean water.
- Mix the required quantity of **BIOMECTIN® 18 EC** with at least 10 litres water and add to the tank whilst agitating. If any other product (e.g. mineral oil) will be used in a tank mixture with **BIOMECTIN® 18 EC**, the required quantity of that product must be pre-mixed in a similar way.
- Pre-mix the **BIOMECTIN® 18 EC** and oil together before adding to the mixing tank.
- Add the required mixture to the water while stirring.
- Fill the spray tank with water to the required level while maintaining agitation, to ensure thorough mixing. Water quality in respect of pH values and hardness will not affect the efficacy of **BIOMECTIN® 18 EC**.
- Prepared spray mixtures must be used immediately and not left in the spray tank for any length of time, e.g. overnight.

#### **Number of sprays per crop:**

Do not apply more than:

- 2 sprays per season in vines, or
- 3 sprays per season in citrus, or
- 3 sprays per season in cotton, or
- 4 sprays per season in apples, pears and strawberries and
- 5 sprays per season in tomatoes and potatoes.

#### **Application techniques:**

All spray applications of **BIOMECTIN® 18 EC** must be performed with appropriate equipment that is properly calibrated and in good working order. Ensure a good even application of spray mixture on the target crop, for maximum efficacy.

#### **Ground application:**

Apply in enough water, to ensure even coverage of the target area. The volume of water needed will depend on the growth stage of the plants and the type of equipment used.

#### **"Tramline" application:**

For use in dryland cotton grown in tramlines. Use 50 to 100 litres spray mixture per hectare depending on the size of the cotton plants. Use at least 5 nozzles equipped with hollow cone tips for each set of tramlines. Two nozzles must spray directly on top of each of the two rows, one between the rows and the two outside nozzles, mounted on drop arms, must spray upwards at an angle of 45 degrees.

**Aerial application:**

Aerial application of **BIOMECTIN® 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 aurally at a lower volume rate than recommended above.
- **Droplet coverage:** 25 to 35 droplets per cm<sup>2</sup> must be recovered at the target area.
- **Droplet size:** A droplet spectrum with a VMD of 280 to 300 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 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 thermometers, 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**

<b>Crop / Pest</b>	<b>Dosage Rate</b>	<b>Remarks</b>
<b>Citrus</b> Citrus thrips ( <i>Scirtothrips aurantii</i> )	20 ml  <b>PLUS</b>  300 ml light or medium grade narrow distillation range mineral spray oil / 100 l water	Apply <b>BIOMECTIN® 18 EC</b> at first sign of Thrip presence or where climatic conditions are favourable for Thrip infestations. Apply as a film wet, light cover spray but avoid run-off. Repeat application when necessary. Not more than three applications or two consecutive applications should be applied per season. <b>BIOMECTIN® 18 EC</b> should be alternated with other registered Thrip remedies to retard development of resistance. Applications will also suppress Lowveld- and Red spider mite.
	2 ml / 10 l water  <b>PLUS</b>  2 ml / 10 l water <b>Villa 51</b>	<u>Household / small scale applications:</u> Apply as indicated above.

Crop / Pest	Dosage Rate	Remarks
<p><b>Apples &amp; Pears</b> Two-spotted spider mite (<i>Tetranychus urticae</i>) and European red mite (<i>Panonychus ulmi</i>)</p>	<p>35 ml</p> <p><b>PLUS</b></p> <p>250 ml light mineral oil / 100 l water (750 to 1500 ml / ha</p> <p><b>PLUS</b></p> <p>0.25 % oil)</p> <hr/> <p>3.5 ml / 10 l water</p> <p><b>PLUS</b></p> <p>2 ml / 10 l water <b>Villa 51</b></p>	<p><b>BIOMECTIN® 18 EC</b> is suitable for use in an Integrated Pest Management (IPM) programme. Use in apple orchards where the IPM programme is not controlling mites effectively.</p> <p>Apply as soon as the Spider mite population reaches the economic threshold level and repeat as required. Refer table below for economic threshold levels.</p> <p>Apply as high volume, high pressure, full cover spray to just before run-off (2150 to 4300 litres spray mixture per hectare). If a low volume application is performed and less than 2150 litres spray mixture per hectare is applied, use at least 750 ml <b>BIOMECTIN® 18 EC</b> per hectare plus 0.25 % oil. Use sufficient water to ensure good coverage. Do not apply more than 1500 ml <b>BIOMECTIN® 18 EC</b> per hectare in any single application or more than a total of 3000 ml per hectare in a growing season (four (4) sprays of the lower rate).</p> <hr/> <p><u>Household / small scale applications:</u> Apply as soon as the Spider mite population reaches the economic threshold level and repeat as required. Refer to the Table below for economic threshold levels. Apply as a full cover spray to just before run-off. Use sufficient water to ensure good coverage.</p>
<p><b>Cotton</b> Two-spotted spider mite (<i>Tetranychus urticae</i>)</p>	<p>300 to 600 ml / ha</p> <p><b>OR</b></p> <p>300 to 600 ml / 100 l water (3 to 6 ml / 100 m row)</p>	<p><b>BIOMECTIN® 18 EC</b> is suitable for both preventive and corrective control. Repeat applications as necessary so that the Mite infestation remains below the economic threshold level. Do not apply more than 3 sprays per season.</p> <p><b>NOTE</b> Refer to “<b>Spider mite Scouting Techniques and Economic Threshold Levels</b>” below.</p> <p><b>Preventive control:</b> Apply <b>BIOMECTIN® 18 EC</b> at a rate of 300 ml per hectare when the Spider mite population index shows a substantial increase over the previous week, but before the economic threshold level is attained for that particular growth stage.</p> <p><b>Corrective control:</b> Apply <b>BIOMECTIN® 18 EC</b> at a rate of 300 ml per hectare when the economic threshold level for a particular growth stage is attained or passed.</p> <p><b>Emergency control:</b> Apply <b>BIOMECTIN® 18 EC</b> at a rate of 600 ml per hectare when Spider mite infestations are serious or hot, dry conditions are experienced. If sprayed when harvest is imminent, leaf loss normally due to excessive Mite damage, may be delayed.</p> <p><b>Group application:</b> Apply in 100 to 200 litres water per hectare. Do not apply less than 300 ml <b>BIOMECTIN® 18 EC</b> per hectare.</p> <p><b>Aerial application:</b> Apply according to the aerial application instructions above.</p> <p><b>"Tramline" application:</b> Apply according to the relevant instructions above.</p>

Crop / Pest	Dosage Rate	Remarks
<p><b>Potatoes</b> American leafminer (<i>Liriomyza trifolii</i>)</p>	<p>500 ml / ha</p> <p><b>PLUS</b></p> <p>&lt; 500 ml medium grade mineral oil / ha</p> <p><b>OR</b></p> <p>2 l / ha light paraffin oil</p>	<p>Apply <b>BIOMECTIN® 18 EC</b> 20 to 30 days after crop emergence, as high-volume spray using 600 litres spray mixture per hectare. A minimum of 300 litres spray mixture per hectare must be applied, to provide full cover spray. Thoroughly wet all foliage surfaces to run-off point.</p>
<p><b>Flowers &amp; Ornamentals</b> Two-spotted spider mite (<i>Tetranychus urticae</i>)</p> <p><b>Chrysanthemums</b> American leafminer (<i>Liriomyza trifolii</i>)</p>	<p>25 ml / 100 l water (560 to 1500 ml / ha)</p> <hr/> <p>25 ml / 10 l water / 45 m<sup>2</sup></p>	<p>Apply <b>BIOMECTIN® 18 EC</b> at first signs of infestation as a high volume, high pressure, full cover spray. to the point of run-off, at a minimum of 2250 litres spray mixture per hectare.</p> <p>If less than 2250 litres spray mixture is applied (i.e. when spraying young plants) a minimum of 560 ml <b>BIOMECTIN® 18 EC</b> per hectare must be applied in sufficient water, to provide a full cover spray.</p> <p><b>NEVER</b> exceed 1500 ml <b>BIOMECTIN® 18 EC</b> per hectare.</p> <p>Ensure that both foliage surfaces are thoroughly wetted by the spray, to the point of run-off.</p> <p><u>Red spider mite:</u> Repeat application as necessary.</p> <p><u>American leafminer:</u> Repeat application every 7 days or as needed to maintain control.</p> <hr/> <p><u>Household / small scale applications:</u> Apply at the first sign of infestation as a full cover spray to the point of run-off, at a minimum of 2.3 litres spray mixture per 10 m<sup>2</sup>. Ensure that both foliage surfaces are thoroughly wetted by the spray, to the point of run-off.</p> <p><u>Red spider mite:</u> Repeat application as necessary.</p> <p><u>American leafminer:</u> Repeat application every 7 days or as needed, to maintain control.</p>

Crop / Pest	Dosage Rate	Remarks
<b>Tomatoes</b> Two-spotted spider mite <i>(Tetranychus urticae)</i> and Larvae of American leafminer <i>(Liriomyza trifolii)</i>	60 ml / 100 l water (300 to 1200 ml / ha)	<b>BIOMECTIN® 18 EC</b> provides both preventive and corrective control of Spider mites. Apply <b>BIOMECTIN® 18 EC</b> as a high volume, high pressure, full cover spray to the point of run-off, when pests are first noticed. Ensure that both the upper and lower leaf surfaces are covered. Do not use more than 2000 litres spray mixture per hectare. Use enough water to give good coverage if young plants are being sprayed and less than 500 litres per hectare spray mixture is applied. <b>NEVER</b> apply more than 1200 ml <b>BIOMECTIN® 18 EC</b> per hectare nor more than five (5) sprays per season. <u>Red spider mite:</u> Repeat application as necessary. <u>American leafminer:</u> Repeat application every 7 days or as needed to maintain control.
	6 ml / 10 l water	<u>Household / small scale applications:</u> Apply <b>BIOMECTIN® 18 EC</b> as a full cover spray to the point of run-off, when pests are first noticed. Ensure that both the upper and lower leaf surfaces are covered. Do not use more than 2 litres spray mixture per 10 m <sup>2</sup> . Use enough water to give good coverage if young plants are being sprayed and less than 500 ml per 10 m <sup>2</sup> spray mixture is applied. <b>NEVER</b> apply more than five (5) <b>BIOMECTIN® 18 EC</b> sprays per season. <u>Red spider mite:</u> Repeat application as necessary. <u>American leafminer:</u> Repeat application every 7 days or as needed to maintain control.
<b>Strawberries</b> Two-spotted spider mite <i>(Tetranychus urticae)</i>	1200 ml / ha	Apply <b>BIOMECTIN® 18 EC</b> as a high volume, high pressure, full cover spray when the pest is first noticed. Ensure that both upper and lower leaf surfaces are thoroughly covered. Apply 2 sprays 7 to 10 days apart. Thereafter repeat when required. <b>BIOMECTIN® 18 EC</b> should be applied in at least 500 litres water per hectare for effective control. <b>NEVER</b> use more than 4800 ml <b>BIOMECTIN® 18 EC</b> per hectare per growing season (four (4) sprays).
	25 ml / 10 l water	<u>Household / small scale applications:</u> Apply as indicated above.
<b>Barley &amp; Wheat</b> Larvae of leafminer <i>(Agromyza ocularis)</i>	1200 ml / ha	Apply <b>BIOMECTIN® 18 EC</b> at first signs of infestation. Apply in a minimum of 300 litres water per hectare. <b>BIOMECTIN® 18 EC</b> is only registered for use by members of the <b>Griqualand West Cooperative (GWK Ltd.)</b> for the control of Leafminer in wheat and barley grown under irrigation in the Douglas and Prieska areas.

<b>Crop / Pest</b>	<b>Dosage Rate</b>	<b>Remarks</b>
<b>Grapes</b> <b>(Wine and table)</b>  Two-spotted spider mite ( <i>Tetranychus urticae</i> )  Erinose / Blister mite ( <i>Colomerus vitis</i> )	350 ml / ha	Apply <b>BIOMECTIN® 18 EC</b> as a high-volume full cover spray, to ensure good penetration and coverage of all plant parts, especially the undersides of leaves.  For Mites, commence spraying when all stages of the mites are present and mobile stages exceed 10 per 10 cm <sup>2</sup> on 30 % of the leaves sampled. For Thrips, commence as soon as the pest is noticed. <b>BIOMECTIN® 18 EC</b> should only be used for late season control of Mites and Thrips. <b>Do not</b> apply <b>BIOMECTIN® 18 EC</b> during flowering when bees are active.  Apply a follow-up application 14 days later. <b>Do not</b> exceed two (2) applications of <b>BIOMECTIN® 18 EC</b> per season.  <b>Masterlock®</b> can be added to the application at a rate of 20 ml per 100 litres water to improve coverage and droplet deposition.

#### Spider mite scouting technique for cotton:

Use this technique to establish the degree of infestation. Start inspections three weeks after germination and continue weekly inspections until first boll split at about 20 weeks. Select 48 plants at random for inspection in areas covering up to a maximum of 15 hectares. Examine one leaf from the middle and two from near the top of each of the selected plants. Count the total number of adult female Mites present and allocate the following numerical scores accordingly:

Zero adult females	=	0
1 to 10 adult females	=	1
11 to 30 adult females	=	2
31 or more adult females	=	3

Calculate the population index by dividing the total numerical value by the number of plants sampled (48). The level of infestation will have a value between 0 and 3. It is essential to keep the index below the economic threshold level of 0.8 for the first 12 weeks and thereafter below an increasing economic threshold level that reaches a value of 2.0 at 20 weeks, by spraying **BIOMECTIN® 18 EC** as recommended.

#### Economic threshold levels:

<b>COTTON</b>	Weeks after germination:	3 to 10	12	14	16	18	20
	Spider mite population index:	0.5	0.8	1.1	1.4	1.7	2.0
<b>APPLES</b>	2 adult females per leaf up to the end of March and subsequently 1 per leaf.						
<b>PEARS</b>	1 adult female per leaf throughout the season.						

#### NOTE

- **BIOMECTIN® 18 EC** is suitable for use in Integrated Pest Management Programmes (IPM). When applied at the recommended rates it will not control all the Spider mites in a crop. Survivors will supply a food source for the predatory Mites thus encouraging a build-up in their numbers.
- **BIOMECTIN® 18 EC** will not adversely affect lint quality in cotton.
- **BIOMECTIN® 18 EC** is quickly taken up by the plant. It will not easily be washed off by rain and/or irrigation if the spray mixture has had sufficient time to dry properly.
- Heavy spray applications can reduce the efficacy of **BIOMECTIN® 18 EC** by causing run-off.

- **BIOMECTIN® 18 EC** does not have a fast knockdown effect on mites or Leafminers and the time taken to reach maximum control is temperature dependent. This can vary from 3 to 5 days. During this time crop damage is minimal due to the mobility of the pests being curtailed by **BIOMECTIN® 18 EC**.
- Spray residues of **BIOMECTIN® 18 EC** have a negligible effect on predatory Mites and other beneficial arthropods.

Consult the **Villa 51, Charge and Masterlock®** labels for **WARNINGS, PRECAUTIONS** and **DIRECTIONS FOR USE**.

The following products mentioned in this label may be replaced with equivalent products:

- **VILLA 51** (L 8050 / W 130454 / N-AR 1090) = **WEN 51** (L 8315) and
- **CHARGE** (L 9100) = **TECHNIWET SUPER** (L 9239) = **BREAK-THRU® S240** (L 6764).

**MASTERLOCK®** is a registered trademark of  
**WINFIELD SOLUTIONS REGISTRATION HOLDINGS (PTY) LTD.**

**VILLA 51, WEN 51, TECHNIWET SUPER** and **CHARGE** are registered products of  
**VILLA CROP PROTECTION (PTY) LTD.**

**BREAK-THRU®** is a registered trademark of  
**EVONIK DEGUSSA AFRICA (PTY) LTD.**