

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

Insecticide



# RAMBA 100 EC

Reg. No. L 9899 Act No. 36 of 1947

6: 17/04/2024 – May2024

An emulsifiable concentrate contact and stomach insecticide and acaricide for the control of pests mentioned on the crops listed, and for the control of wood destroying, subterranean Termites around buildings and structures.

## ACTIVE INGREDIENT

bifenthrin (pyrethroid)

100 g/l

GROUP

3A

INSECTICIDE



DANGER

### Hazard Statements:

Flammable liquid and vapour.  
Harmful if swallowed, inhaled or in contact with skin.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
Suspected of causing cancer.  
Causes damage to organs (nervous system) through prolonged or repeated exposure.  
Very toxic to aquatic life with long lasting effects.

### Precautionary Statements:

Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.  
Avoid release into the environment.

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**villa**

UN Number: 1993

Registration holder: VILLA CROP PROTECTION (PTY) LTD.

Co. Reg. No. 1992/002474/07

PO Box 10413, Aston Manor, 1630

Tel. (011) 396 2233

Website: [www.villacrop.co.za](http://www.villacrop.co.za)

24 HR EMERGENCY NUMBERS:

Griffon Poison Centre: +27 82 446 8946

24 HR Transport / Spill Emergency no: (Hazcall24) +27 86 044 4411

(Client: Villa Crop Protection)

DIRECTIONS FOR USE ENCLOSED

Batch Number:

Date of Manufacture:

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

**RAMBA 100 EC**

Reg. No. L 9899 Act No. 36 of 1947

IRAC INSECTICIDE GROUP CODE: 3A

**ACTIVE INGREDIENT:**

bifenthrin (pyrethroid) .....100 g/l

Registration holder:

**VILLA CROP PROTECTION (PTY) LTD.**

Co. Reg. No. 19992/002474/07

P.O. Box 10413

ASTON MANOR, 1630 Tel. (011) 396 2233

**WARNINGS**

Allow the following number of days between the last application and harvest or grazing of the crops listed below:	
Avocados	28 days
Cotton	28 days
Maize & Sweetcorn (including green maize & grazing)	56 days
Tree nuts (including Almonds, Cashews, Chestnuts, Hazelnuts, Macadamia nuts, Pecans, Pistachio nuts, Walnuts, Coconut, Brazil nuts and Pine nuts)	28 days
Potatoes	21 days
Soybeans	30 days
Tomatoes	5 days

**IN THE CASE OF CROPS INTENDED FOR EXPORT, CONFIRM WITHHOLDING PERIODS WITH THE RELEVANT EXPORT ORGANISATION. IF THIS PRODUCT IS USED ACCORDING TO THE RECOMMENDATIONS ON THIS LABEL, LOCAL MRL VALUES WILL NOT BE EXCEEDED. HOWEVER, VILLA CROP PROTECTION (PTY) LTD. CANNOT ACCEPT RESPONSIBILITY FOR EXPORTED CROPS EXCEEDING THE IMPORT TOLERANCES OF OTHER COUNTRIES.**

**Hazard statements:**

Flammable liquid and vapour.
Harmful if swallowed, inhaled or in contact with skin.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.
Causes damage to organs (nervous system) through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

- Handle with care.
- **Extremely toxic to Bees and wildlife.**
- Store 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 one (1) day after treatment unless wearing protective clothing.
- **In case of poisoning immediately call a doctor and make this label available to him/her.**

**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. 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, 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 in the event of any 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.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe fume, mist, vapours and 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.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release into the environment.
Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
IF SWALLOWED, INHALED OR ON SKIN: Get medical help.
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: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned, get medical advice.
Get medical help if you feel unwell.
Rinse mouth.
If skin irritation or rash occurs: Get medical help.
If eye irritation persists: Get medical help.
Take off contaminated clothing and wash it before reuse.
Collect spillage.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container to suitable landfill in accordance with local regulations.

- Avoid eye splashes, skin contact and inhalation of spray mist.
- Prevent drift onto other crops, grazing, rivers, dams or areas not under treatment by using a suitable drift retardant such as **INTERLOCK**<sup>®</sup> (L 10254 / W 130875 / N-AR 1856) in row crops.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams. Clean the applicator with a household ammonia solution (1 %) or **Protank**<sup>®</sup> liquid cleaner before using other pesticides. Let the solution stand for several hours, preferably over-night. Rinse at least twice. This applicator should not be used for applying chemicals other than insecticides.
- **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 (3) 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>	
<b>Bifenthrin</b>	100 g/l
Dimethyl benzene	< 800 g/l
Calcium dodecylbenzene sulfonate	< 20 g/l
POE (1) lauryl ether	< 80 g/l

**SYMPTOMS OF HUMAN POISONING**

No cases of poisoning have been described in the general population and none from occupational exposure. However, symptoms that may arise if the product is mishandled and overexposure occurs are nausea,

vomiting, diarrhoea, abdominal pain, ataxia, unsteady gait, hyperexcitability, salivation, tremors, and incontinence. Larger doses may cause convulsions and loss of consciousness.

### **FIRST AID TREATMENT**

- **Skin:** Remove contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. **Seek medical attention.**
- **Eyes:** Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after five (5) minutes and continue rinsing. **Seek medical attention if irritation persists.**
- **Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs. **Seek medical attention.**
- **Ingestion: Do not induce vomiting due to the aromatic solvent.** Do not give anything by mouth to an unconscious person. **Obtain medical attention** or call a poison control centre for treatment advice. If the person is alert and respiration is not depressed, rinse mouth thoroughly with water and give large quantity of water to drink. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Qualified medical personnel should perform administration of gastric lavage or oxygen.

### **NOTE TO PHYSICIAN**

There is no specific antidote available. This product contains materials that may cause severe pneumonitis if aspirated. In cases of ingestion, consider gastric lavage, however, prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Treat symptomatically and supportively.

### **RESISTANCE WARNING**

**RAMBA 100 EC** is a group code 3A insecticide. Any insect population may contain individuals naturally resistant to **RAMBA 100 EC** and other group code 3A insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **RAMBA 100 EC** or any other group code 3A 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 or consult the website of the Insecticide Resistance Action Committee (<https://irac-online.org/>). If resistance is suspected, please consult your local company representative or agricultural advisor.

### **RESISTANCE MANAGEMENT**

- Resistance of the 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 when the bollworm threshold is exceeded (normally not necessary in Bt-cotton) and preferably during the pyrethroid window, from 14 to 22 weeks after planting.  
**All Other Crops:** Refer to the application table below for the maximum number of applications that can be made per crop. If the maximum number of applications are not specified, **do not exceed two (2) applications per 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.

#### **Mode of Action:**

**RAMBA 100 EC** contains **Bifenthrin**, a pyrethroid that belongs to IRAC mode of action group 3A. It is a non-systemic insecticide that is active through contact and ingestion. It causes modulation of voltage-gated sodium channels, which prevents the channels from closing and results in hyperexcitation.

## **1. AGRICULTURAL USE**

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

#### **Compatibility:**

- **RAMBA 100 EC** is compatible with **Biomectin® 18 EC**, **Commodobuff**, **Advance 150 SC**, **INTERLOCK®** (L 10254 / W 130875 / N-AR 1856) and **Charge**.

- **Interlock®** can be added to improve drift control, canopy penetration and coverage in row crops. **Interlock®** was also not tested in all crop situations listed on this label and thus should not be applied **where the pre-harvest interval is seven (7) days or less, unless specified.**
- Do not mix with seaweed extracts, **Amitraz**, **Chinomethionat** and **Prothiophos**.
- The compatibility of **RAMBA 100 EC** with other products may be influenced by several factors. As changing factors may vary, a physical compatibility test must always be performed before such tank mixtures are sprayed. If the products are physically compatible, this does **NOT** imply that they will be biologically compatible (effect against the target pest), thus the registration holder will not take responsibility for ineffective control in these scenarios.
- When **RAMBA 100 EC** is used in conjunction with any other agricultural remedy, adhere to all **WARNINGS**, **PRECAUTIONS** and **DIRECTIONS FOR USE** mentioned on that label.

#### Mixing instructions:

- Half fill the spray tank with clean water.
- Effectiveness of **RAMBA 100 EC** can be affected by very hard water (>1000 ppm. solutes) and/or water with a high or low pH value. The ideal pH is between 5 and 8.
- Use **Commodobuff** buffer at the registered rate to adjust the pH of the water if not in the ideal range.
- **Commodobuff** buffer must be mixed with the water prior to the addition of **RAMBA 100 EC**.
- Take approximately 10 litres of this pH-corrected water from the mixing tank and thoroughly mix with the required volume **RAMBA 100 EC**.
- If any other product is to be mixed with **RAMBA 100 EC**, the required volume of this product must be pre-mixed in a similar way.
- Agitate the water in the spray tank and then add the product(s) to the tank in the following sequence (as applicable): **Commodobuff**, suspension concentrate, water-soluble concentrate, emulsifiable concentrate.
- Fill the spray tank with water to the required level while maintaining agitation, to ensure thorough mixing.
- Maintain agitation during application.
- Prepared spray mixtures must not be left in the spray tank for any length of time, e.g., overnight.

#### Application instructions:

- All applications must be performed with suitable equipment that is in good working order and correctly calibrated, to give the desired coverage for that particular method of application.
- Ensure that thorough penetration and wetting is obtained.
- Monitor efficacy within (three) 3 days after application. A further application may be necessary if unacceptable levels of control have been obtained, however additional applications are not recommended in all cases. Please refer to “**RESISTANCE MANAGEMENT**”.

#### Time of Application (Cotton – African bollworm complex):

- **RAMBA 100 EC** must only be used in accordance with the principles of good pest management and integrated pest control namely during the period from square formation until boll burst (6 to 18 weeks after emergence. The preferred time is during the pyrethroid window, 14 to 22 weeks post-planting. **Do not apply during peak flowering when Bees are active.**
- For the period before peak flowering, use a registered product from another chemical class if the bollworm threshold is exceeded. This is usually not necessary in the case of Bt-cotton.

#### Time of Application (Cotton – Two spotted spider mites / Red spider mite):

- **RAMBA 100 EC** is a contact acaricide and therefore thorough spray coverage of the application is required.
- Special care should be taken to ensure that good under leaf coverage is achieved.
- Apply when the mite threshold of a population index of (one) 1 is exceeded or reached. (refer – “**Scouting method Mites**”).
- Adequate under leaf coverage is required and therefore only suitably adjusted ground spray equipment should be used for red spider mite control on cotton.

#### Ground application:

- Use hollow cone nozzles that produce a medium to fine droplet spectrum with conventional high-volume spray equipment.
- Calibrate the spraying equipment before application and ensure correct application.
- Ensure an even distribution of the spray mixture over the whole target area.

**Centre pivot application (Maize only):**

**RAMBA 100 EC** may be applied through a centre pivot irrigation system.

**NOTES**

Centre pivot application may not be as effective as ground application with a boom sprayer equipped with hollow cone nozzles. This is due to excessive run-off of the applied product(s), and a lack of under leaf coverage when applied by means of centre pivot application).

It is important that the following requirements be met:

- The system must have a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent contamination of the water source from back flow.
- The pesticide injection pipeline must have a functional automatic quick-closing check valve to prevent the flow of liquid back towards the injection pump.
- The pesticide injection line should also have a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn out of the supply tank when the irrigation system is either automatically or manually closed.
- The system must have functioning interlocking controls to shut off the pesticide injector pump automatically when the water-pump motor stops.
- The irrigation line or water-pump must include a functional pressure switch, which will stop the water-pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind conditions favour drift beyond the area intended for treatment.
- **IMPORTANT:** Use very clean water for pivot irrigation application. Water must be free of silt, clay and organic material, as pyrethroids tend to adhere to these particles and adversely affect the efficacy.

**Aerial application:**

Aerial application of **RAMBA 100 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 cm<sup>2</sup> 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 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>Avocados</b> Stinkbug complex	30 to 40 ml / 100 ℓ water (3 to 4 ml / 10 ℓ water)  <b>PLUS</b>  5 ml / 100 ℓ water (0.5 ml / 10 ℓ water)  <b>Charge</b>	Apply as a medium cover application as soon as petal fall commences, ensuring good coverage of the target area.  Repeat applications every two (2) weeks, but not later than 28 days before harvest.  <b>Do not exceed four (4) applications per season.</b> If further control is needed, use insecticides with a different mode of action, such as <b>Tivoli 240 SC</b> .  <b>Do not apply when Bees are active.</b>  <b>Refer to the respective product labels for USE RESTRICTIONS, DIRECTIONS FOR USE, APPLICATION RATES, number of sprays allowed per season and the minimum time between the last application and harvest.</b>
<b>Potatoes</b> Tuber moth ( <i>Phthorimaea operculella</i> )	300 ml / ha (6 ml / 10 ℓ water)	Apply as a preventative full cover spray in not less than 500 litres water per hectare. (Refer to “ <b>RESISTANCE WARNING</b> ” above).
<b>Tomatoes</b> Spider mites ( <i>Tetranychus</i> spp.)	400 ml / ha (8 ml / 10 ℓ water)	Apply as a full cover spray in at least 500 litres water per hectare. Ensure thorough wetting of the plants and especially the undersides of leaf surfaces. In trellised tomatoes, spray on both sides of the row.  Under severe infestation levels repeat application within 7 days. (Refer to “ <b>RESISTANCE WARNING</b> ” above).
Tomato Semi-looper ( <i>Chrysodeixis acuta</i> )  Leafminer (Potato tuber moth larvae) ( <i>Phthorimaea operculella</i> )  American leafminer ( <i>Liriomyza trifolii</i> )  African bollworm ( <i>Helicoverpa armigera</i> )	300 ml / ha (6 ml / 10 ℓ water)	Apply as a full cover spray in at least 500 litres water per hectare. Ensure thorough wetting of the plants.  Repeat application within 7 to 10 days if necessary. (Refer to “ <b>RESISTANCE WARNING</b> ” above).

Crop / Pest	Dosage Rate	Remarks
<p><b>Cotton</b> Two-spotted spider mite / Red spider mite (<i>Tetranychus urticae</i>)</p>	<p>400 ml / ha (20 ml / 10 l water)</p> <p><b>OR</b></p> <p>4 ml / 100 m row</p>	<p><b>Ground application:</b> Boom and nozzle. Apply in 200 litres water per hectare (See “NOTES” below).</p> <p><b>Tramline treatment:</b> Apply in a sufficient volume of water, to ensure thorough coverage of plants. Nozzles should be suitably arrayed to cover whole plant with at least one nozzle spraying directly over each row. Application should, based on scouting, be repeated later if necessary.</p> <p>Applications against Two-spotted spider mites will also control African, Red and Spiny bollworm, and Cotton stainer, however larvae inside bolls may not be controlled. This application will replace the normal sprays for these pests.</p> <p><b>Do not exceed two (2) applications per season.</b> Refer “RESISTANCE WARNING” above.</p>
<p>*Bollworm Complex Cotton stainers</p>	<p>*400 ml / ha (20 ml / 10 l water)</p>	<p><b>Ground application:</b> Application must be based on scouting and repeated if necessary. (See notes under scouting). Ensure thorough coverage of the plants. Apply in 200 litres water per hectare. Refer “RESISTANCE WARNING” above.</p> <p><b>Aerial application:</b> Apply in at least 30 litres water per hectare.</p> <p><b>Corrective treatments:</b> (See “NOTES” below)</p> <p><b>Do not exceed two (2) applications per season.</b> Refer “RESISTANCE WARNING” above.</p>
<p><b>NOTES</b></p> <ul style="list-style-type: none"> <li>* Bollworm complex included – African bollworm, Red bollworm and Spiny bollworm. All will be controlled by the above recommended rates. However, larger larvae established inside bolls may not be controlled.</li> <li><b>Corrective treatment:</b> In the event of an emergency situation arising as a result of factors preventing pest control, for example adverse weather conditions, use a product from a different chemical group. This should only be regarded as an emergency treatment when a bollworm population of different instars has become established.</li> <li>Optimum pest management is achieved using <b>RAMBA 100 EC</b> as a preventative spray starting after flowering on regular weekly scouting.</li> <li>Application effectiveness, density of crop, foliage, larval instar and the residual period of the product affect treatment success.</li> </ul>		
<p><b>Scouting Method: Bollworm complex.</b> Apply treatments, based on scouting as follows:</p> <ol style="list-style-type: none"> <li>Scout 24 randomly chosen plants in field up to 15 hectares and repeat for larger areas.</li> <li>Scout the fields weekly from square formation stage until boll-split.</li> <li>Apply treatments when the following threshold is reached or exceeded: <ul style="list-style-type: none"> <li><b>African bollworm:</b> average 1 egg per 2 plants or &gt;5 small larvae per 24 plants;</li> <li><b>Red bollworm:</b> 6 eggs per 24 plants or more than 5 larvae per 24 plants;</li> <li><b>Spiny bollworm:</b> &gt; 5 larvae per 24 plants,</li> </ul> </li> <li>Up to week 7, apply follow-up sprays at 7-day intervals, if threshold values require spraying. From week 17, if plant growth tempo has slowed down, intervals can be extended to 14 days, considering the threshold values. For African bollworm and Red bollworm, sprays must be applied when the cumulative count over a maximum period of four (4) consecutive unsprayed weeks reached or surpasses the above threshold levels.</li> </ol>		



Crop / Pest	Dosage Rate	Remarks
<p><b>Cotton</b> (continued)  <b>Scouting Method: Two-spotted spider mites.</b>  Weekly inspection of 48 plants per 15 hectares is recommended.  a) For each plant choose three (3) leaves, one (1) in the middle and two (2) at the top of the plant.  b) Count the number of adult females (visible red stages) on the three (3) leaves and record as follows:  0 mites = A: 1–10 = B: 11–30 = C: and more than 30 mites = D  Convert the letters A = 0; B = 1; C = 2; D = 3 and total.  Population index = <math>\frac{\text{Total}}{\text{Number of plants inspected}}</math>  Spraying should commence at a population index of 1 and be repeated whenever a substantial increase is recorded. The aim is to keep the infestation score below an average index rating of 2 per plant until 20 weeks after crop emergence or first boll split.</p>		
<p><b>Maize</b>  Two-spotted spider mite  (<i>Tetranychus urticae</i>)</p>	<p><b>RAMBA 100 EC</b> can be applied as a Ground application, Centre pivot application or Aerial application on maize, excluding treatments for two-spotted spider mites which should not be applied aerially. Please refer to “<b>Centre pivot application</b>” and “<b>Aerial application instructions</b>” above.</p>	<p><u>Ground application:</u>  Because of the growth habit of the maize plant, it is very difficult to obtain an even wetting of the plant. Therefore, the control of adult Two-spotted spider mites is aimed at covering the entire plant until after the soft dough stage of the cob. Ensure thorough wetting of the entire plant, especially the undersides of the leaves. The addition of a suitable wetter such as <b>Charge</b> is important. Repeat application within 14 days if necessary. If African bollworm is present at the time of application, it will also be controlled. Refer to “<b>RESISTANCE WARNING</b>” above.  <u>Centre pivot application:</u>  Refer “<b>Centre pivot application</b>” above.</p>
<p><b>Maize &amp; Sweetcorn</b>  Maize stalk borer  (<i>Busseola fusca</i>)    Sorghum stem borer  (<i>Chilo partellus</i>)</p>	<p>3 ml / 100 m row  <b>PLUS</b>  3 ml / 100 m row  <b>Advance 150 SC</b>  <b>PLUS</b>  25 ml / 100 l  (2.5 ml / 10 l water)  <b>Charge</b></p>	<p><u>Ground application:</u>  Apply as a full cover spray when eggs are found on 5 % of the plants or if 10 % of the plants show hail damage.  Apply a minimum of 3 litres spray mixture per 100 m plant row.  Applications must be performed early in the morning and direct spray into funnels – ensure thorough coverage of the plant.  Apply a second application 7 to 10 days later depending on the level of infestation.  <b>Do not exceed two (2) applications per season.</b> Refer to “<b>RESISTANCE WARNING</b>” above.  <u>Centre pivot application:</u>  Refer “<b>Centre pivot application</b>” above.  <u>Aerial application:</u>  Refer “<b>Aerial application</b>” above. Apply in at least 30 litres of water per hectare.</p>

Crop / Pest	Dosage Rate	Remarks
<p><b>Green maize</b> African bollworm (<i>Helicoverpa armigera</i>)</p>	<p>300 ml / 100 ℓ water (30 ml / 10 ℓ water)</p>	<p><u>Ground application:</u> Apply as above.</p> <p><b>Do not exceed two (2) applications per season.</b> Refer to “<b>RESISTANCE WARNING</b>” above.</p> <p><u>Centre pivot application:</u> Refer “<b>Centre pivot application</b>” above.</p> <p><u>Aerial application:</u> Refer “<b>Aerial application</b>” above. Apply in at least 30 litres of water per hectare.</p>
<p><b>Soybeans</b> African bollworm (<i>Helicoverpa armigera</i>)</p>	<p>300 ml / 100 ℓ water (30 ml / 10 ℓ water)</p>	<p><u>Ground application:</u> Apply as a full cover spray with a minimum spray volume of 200 litres per hectare. Commence spraying as soon as pest is noticed or before onset of flowering when Bees are not active. Repeat at 14-day intervals.</p> <p><u>Aerial application:</u> Apply in at least 30 litres of water per hectare.</p> <p><b>Do not exceed two (2) applications per season.</b> Refer to “<b>RESISTANCE WARNING</b>” above.</p>
<p><b>Tree nuts</b> (Almonds, Cashews, Chestnuts, Hazelnuts, Macadamia nuts, Pecans, Pistachio nuts, Walnuts, Coconut, Brazil nuts and Pine nuts)</p> <p>Stinkbug complex</p>	<p>50 ml / 100 ℓ water (5 ml / 10 ℓ water)</p>	<p>Apply as a full cover spray when nuts are approximately marble sized. Repeat every four (4) weeks.</p> <p><b>Do not exceed three (3) applications per season with RAMBA 100 EC.</b></p> <p><u>Spray programme:</u> Start with <b>Cranium 500 WDG</b> during flowering, if necessary, as a preventative application based on scouting numbers.</p> <p>Follow up with <b>Thixam 250 WDG</b> or <b>Lambda 50 EC</b> or <b>ACEPHATE 750 SP</b> (L 7181 / N-AR 1929 / W1301482) or <b>Klepton 240 EW</b> at 90 % petal fall when Bees are no longer active.</p> <p>From when nuts are approximately marble size, sprays of the following products can be alternated until the end of season: <b>RAMBA 100 EC</b> or <b>Polytrin Super 100 SC</b> or <b>Klepton 240 EW</b> or <b>Cypermethrin 200 EC</b>.</p> <p><b>Refer to the respective product labels for USE RESTRICTIONS, DIRECTIONS FOR USE, APPLICATION RATES, number of sprays allowed per season and the minimum time between the last application and harvest.</b></p>

## 2. TERMITE CONTROL

*It is advisable that a registered Pest Control Operator perform the applications as described below. Application should adhere to SANS 10124:2018.*

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

- **RAMBA 100 EC** can be used to prevent and control subterranean, wood destroying Termites in and around buildings and structures. **RAMBA 100 EC** should be sprayed onto the soil surface or injected into

the soil under buildings, to form a treated barrier between the timber and the subterranean Termites in the soil.

- All active Termite mounds in the immediate vicinity of the construction site or structure (within 50 meters of the structure, or within the property boundary if this distance is shorter) should be treated to prevent Termite attack.
- All cellulose containing material that can act as a food source for Termites should be removed from the site prior to treatment.
- For post-construction corrective treatments, an indoor and outdoor application must be carried out in full.
- It is imperative that the application is carried out in such a way that the termiticide is distributed in a continuous layer in the soil under existing structures. If not, gaps where there is no termiticide in the soil barrier are rapidly exploited by Termites to gain access to the structure.
- A durable sign inscribed with “**Danger – poisoned soil**” and the date should be placed in the treated area.
- To prevent run-off, do not apply to very wet or waterlogged soils. Avoid disturbance of the treated surface.
- If heavy rain occurs (> 15 mm) within 24 hours after application, the area will have to be retreated unless it was adequately protected (e.g. with a plastic cover).
- **RAMBA 100 EC** will control subterranean wood destroying Termites for at least 36 months after application.

Situation	Dosage rate	Remarks
<p><b>Pre-construction</b> (preventative treatment)</p>	<p>1 ℓ / 100 ℓ water (50 ml / 5 ℓ water)</p>	<p><u>Treatment of colonies:</u> Apply 5 litres of mixture per colony. For Termite mounds without chimneys, remove the top of the mound with a spade and pour the mixture into the nest. For Termite mounds with chimneys, pour the mixture into the chimneys that can be found. Divide the 5-litres mixture evenly between the chimneys.</p> <p><u>Treatment of foundation and service trenches and foundation walls</u> The bottom and sides of foundation and service trenches should be treated at a rate of 5 litres mixture per linear meter. Service trenches that enter the building that accommodate electric cables, sewers and water pipes should be treated for their full length inside the building. All inner foundation walls should be treated on both sides and the outer foundation walls should be treated on the inside at a rate of 5 litres mixture per linear meter.</p> <p><u>Treatment of soil surface under floor slabs</u> The hardcore and soil should be treated at a rate of 5 litres mixture per square meter (1 m<sup>2</sup>) where the floor will be casted (thus before the concrete slab is cast), after the ground has been filled and compacted. Good coverage where cables and/or piping enter the structure is essential. It is further imperative that the mixture be applied in such a way that a continuous protective layer of the building's floor plan is achieved. Pay attention to thorough coverage of the inside of foundation walls, indoor partition walls, around and along plumbing and electrical conduits and inside cavity walls.</p> <p><u>Suspended floors</u> Treat the entire surface area below the floors at a rate of 5 litres mixture per square meter (1 m<sup>2</sup>), ensuring thorough coverage where pipes and/or cables enter the structure.</p> <p><u>Pile and boom construction</u> Treatment should be done after compaction but before concrete is cast at a rate of 5 litres mixture per square meter (1 m<sup>2</sup>). Treat the bottom surface of the pile and boom foundations.</p> <p><u>Unexposed soil surfaces</u> Soil surfaces destined for paving, verandas, entrance steps, etc. should be treated at 5 litres mixture per square meter (1 m<sup>2</sup>) where it will be connected to the structure.</p>

Situation	Dosage rate	Remarks
<p><b>Post-construction</b> (corrective treatment)</p>	<p>1 ℓ / 100 ℓ water (50 ml / 5 ℓ water)</p>	<p><b><u>Outdoor perimeter treatment</u></b></p> <p><b><u>Trench application</u></b> Dig a trench around the exterior perimeter of the foundation. The trench should be 30 cm wide and 45 cm deep and should not reach below the foundation. Apply 5 litres mixture per linear meter of the trench, ensuring adequate coverage of the sides and bottom of the trench. The trench should be backfilled with soil that has been compacted and treated with the same mixture. Treat three to six meters (3 to 6 m) at a time in order to prevent weakening of the foundation structure.</p> <p><b><u>Drill and inject application</u></b> Where trenching is not possible due to the presence of verandas, concrete aprons, porches, paved walkways, etc., a perimeter drill and inject application should be carried out. Holes should be drilled around the entire outside perimeter of the structure, 30 cm apart. Holes must be drilled to the top of the footing of the foundation and from the outside through the outer walls, to ensure that the mixture is applied under the floor slab. If the design of the structure does not allow for vertical holes through the floor along the outside perimeter, horizontal holes should be drilled from the outside through the foundation wall into the soil underneath the solid floors. Flood the mixture into these holes at 100 litres mixture per cubic meter soil per 30 cm depth. The holes should be sealed with mortar after the mixture has drained away.</p> <hr/> <p><b><u>Indoor application</u></b></p> <p><b><u>Suspended wooden floors</u></b> A 30 cm wide trench as deep as the top of the footing, should be dug around the inside of the foundation walls and treated with 5 litres mixture per linear meter. The trench must be backfilled with treated, compacted soil. Apply treatments in sections of 3 to 6 meters at a time to prevent weakening of the foundation structure. The surface of the crawl space and the enclosing walls should be treated at a rate of 5 litres mixture per square meter (1 m<sup>2</sup>). If there is no access, openings should be cut into the floorboards in order to carry out the treatment. The removed section must be replaced after application and sealed. Where there is no crawl space, holes can be drilled through the floor at regular intervals. The soil surface below the floor must be treated at a rate of 5 litre mixture per square meter (1 m<sup>2</sup>). Holes should be filled with wooden dowels after application.</p> <p><b><u>Solid floors</u></b> Holes should be drilled through the concrete floor around the inside perimeter of all rooms in the structure, approximately one meter (1 m) apart. Flood the mixture into these holes at a rate of 5 litres per hole. After the mixture has drained away, holes should be sealed with mortar.</p> <p><b><u>Timber constructions</u></b> Protect telephone and fence poles and garden huts by treating the soil around the base of the construction with the spray mixture at a rate of 5 litres per square meter (1 m<sup>2</sup>) per 30 cm soil depth. The mixture should reach 15 cm below the bottom of the pole in the soil.</p>

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

- **COMMODOBUFF** (L 5390 / N-AR 1107) = **AQUABUFF** (L 5451 / W 130060),
- **CHARGE** (L 9100 / W 130953 / N-AR 2241) = **TECHNIWET SUPER** (L 9239),
- **BIOMECTIN® 18 EC** (L 7979 / N-AR 1112 / W1301429) = **UNIMECTIN 18EC** (L 7978 / N-AR 2206) (Abamectin)
- **ADDITION 150 SC** (L 9146 / N-AR 1508 / W 1301425) = **ADVANCE 150 SC** (L 9147 / W 130689) (Indoxacarb).

- **TIVOLI 240 SC** (L 9385 / N-AR 1928 / W1301409) = **LUTON 240 SC** (L 9386) = **SPITRUS 240 SC** (L 9700)
- **CRANIUM 500 WDG** (L 9968) = **TRIVIA 500 WDG** (L 9969 / N-AR 1930) (**Pymetrozine**),
- **THIAXAM 250 WDG** (L 9191 / W 130696) = **THIATOX 250 WDG** (L 9190) (**Thiamethoxam**),
- **LAMBDA 50 EC** (L 7787 / W 130687) = **JUDO 50 EC** (L7785 / N-AR 1104 / W1301413) = **LAMBDA-CYTHRIN 50 EC** (L 8343) (**Lambda-cyhalothrin**),
- **KLEPTON 240 EW** (L 10454) = **KLAXON 240 EW** (L 10455) (**Tau-fluvalinate**),
- **POLYTRIN® SUPER 100 SC** (L 7262 / W 1301112) = **ALPHA-THRIN 100 SC** (L 7425) (**Alpha-cypermethrin**) and
- **CYPERMETHRIN 200 EC** (L 4644) = **POLYTRIN® 200 EC** (L 5409 / N-AR 1085 / W1301404).

**AQUABUFF, TECHNIWET SUPER, TRIVIA 500 WDG, THIATOX 250 WDG, JUDO 50 EC, ACEPHATE 750 SP, KLAXON 240 EW, ALPHA-THRIN 100 SC and CHARGE** are registered products of **VILLA CROP PROTECTION (PTY) LTD.**

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**BIOMECTIN® 18 EC and POLYTRIN® 200 EC** are registered trademarks of **VILLA CROP PROTECTION (PTY) LTD.**

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