

BEFORE USING THIS PRODUCT READ THE LABEL CAREFULLY!

Insecticide



**BARITONE 50 EC**

Reg. No. L 8659 Act/Wet No. 36 of/van 1947  
W130692

2:19/9/2013-June2019

*An emulsifiable concentrate contact and stomach insecticide for the control of insects on crops as listed.*

*'n Emulgeerbare konsentraat kontak- en maaginsekododer vir die beheer van insekte op gewasse soos vermeld.*

**ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL**  
lufenuron (benzamide) **50 g/l** lufenuron (bensamied)

IRAC INSECTICIDE GROUP CODE **15** IRAC INSEKODODER GROEPKODE



**villa**

Registration holder / Registrasiehouer:  
Universal Crop Protection (Pty) Ltd.  
Co. Reg. No. / Mpy. Reg. Nr. 1983/008184/07  
PO Box / Posbus 801, Kempton Park, 1620  
Tel: 011 396 2233  
Website / Webblad: [www.villacrop.co.za](http://www.villacrop.co.za)

**UN Number: 3082**

Willow Set & Print 011 394-4486



**CAUTION  
VERSIGTIG**



GEBRUIKSAANWYINGS INGESLUIT

**VERWYS NA BESONDERHEDE  
GEDRUK OP HOUER/SAK**

Date formulated:  
Formuleringsdatum:

DIRECTIONS FOR USE ENCLOSED

**REFER TO DETAILS PRINTED  
ON CONTAINER/BAG**

Batch number:  
Lotnommer:

**BARITONE 50 EC**

Reg. No. L 8659 / W 130692 Act/Wet No. 36 of/van 1947

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Registration holder / Registrasiehouer:

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

Co. Reg. No. 1983/008184/07 Mpy. Reg. Nr.

P.O. Box / Posbus 801, KEMPTON PARK, 1620

Tel. (011) 396 2233

**CAUTION / VERSIGTIG****WARNINGS****Withholding periods:**

Minimum number of days between the last application and harvest or grazing:	
Maize	30 days
Potatoes	0 days
Tobacco	66 days

**NOTE**

**THE MAXIMUM RESIDUE LEVELS (MRL'S) WILL NOT BE EXCEEDED, PROVIDED APPLICATIONS ARE APPLIED AS HERewith PRESCRIBED. WHEN THE CROP IS DESTINED FOR THE EXPORT MARKET, THE INSTITUTION OF CONCERN MUST BE CONTACTED, PRIOR TO THE USE OF BARITONE 50 EC IN A SPRAY PROGRAMME.**

- Handle with care.
- Irritating to the skin and eyes.
- **Highly toxic to crustaceans.** Avoid contamination of water bodies. Strictly use according to instructions to prevent damage to aquatic systems.
- Sensitive to freezing and warm storage conditions.
- Store away in a cool dry place away from food and feeds.
- Keep out of reach of children, uninformed persons and animals.
- Re-entry: Do not enter treated area until spray deposit has dried unless wearing protective clothing.

**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 the drift to contaminate water or adjacent areas.

**Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions, because the action and effect thereof may be affected by factors such as abnormal 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, 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**

- Wear suitable protective clothing when the product is handled, the spray mixture prepared and during application.
- Do not inhale the spray mist.
- Avoid contact with eyes and skin.
- Wash with water and soap after use or in case of accidental contact.
- Wash contaminated clothing after use.
- Do not eat, drink or smoke whilst mixing or applying the product, or before washing hands and face and change of clothing.

- Prevent drift of spray mist onto other crops, grazing, rivers, dams or areas not under treatment or to nearby water sources.
- Thoroughly clean the spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of a third of the volume of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.
- Destroy the empty container by perforation and flattening and dispose of it in a safe way.
- **Never** re-use the empty container for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.

### **RESISTANCE WARNING**

**BARITONE 50 EC** is a group code 15 insecticide. Any insect population may contain individuals naturally resistant to **BARITONE 50 EC** and other group code 15 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly and exclusively in programs. These resistant insects may not be controlled by **BARITONE 50 EC** or any other group code 15 insecticides.

To delay insecticide resistance:

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

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

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

#### **Product information:**

- Product properties:
  - **BARITONE 50 EC** is an effective alternative insecticide for the control of foliage feeding Lepidopterous pests (larvae of moths and butterflies) resistant to insecticides from other mode of action groups (e.g. pyrethroids or organophosphates).
  - The active ingredient of **BARITONE 50 EC** inhibits the biosynthesis of chitin, causing interference with the development of the larva's cuticle.
  - **BARITONE 50 EC** shows good stomach and medium contact activity.
  - **BARITONE 50 EC** displays ovicidal activity.
  - **BARITONE 50 EC** is not pH sensitive.
- Crop and environmental properties:
  - No unacceptable residue levels will be found in or on the crop at time of harvesting if **BARITONE 50 EC** is used as directed.
  - Honeybees: **BARITONE 50 EC** is safe for honeybees.
  - If applied at the dosage rates indicated below, **BARITONE 50 EC** will be safe to adult stages of natural enemies. However, immature stages of certain predatory natural enemies can be affected adversely.
  - **BARITONE 50 EC** will not harm predacious mite species.

#### **Crop recommendations:**

##### **1. Potatoes**

- Potatoes remaining in the soil for a longer period will receive protection against Tuber moth larvae only when **BARITONE 50 EC** is applied as directed.
- **BARITONE 50 EC** applications must follow on a preceding maintenance programme using insecticides, with non-related mode of action, during the early stages of crop development.
- Ridge at least two times during the season.
- Acceptable control will only be achieved by applying multiple successive applications of **BARITONE 50 EC**. The amount of applications depends on the intensity of re-infestations.
- **Do not** apply more than 6 consecutive treatments per crop season.

**Compatibility:**

- **BARITONE 50 EC** is compatible with **Lambda 50EC**, **Lambda Secure 106 CS** and a **Villa approved buffer + surfactant adjuvant**.
- The compatibility of **BARITONE 50 EC** may be influenced by several factors. As factors influencing compatibility may vary, a physical compatibility test must always be performed before such tank mixture is sprayed. In the case of uncertainty, contact the supplier or the registration holder.
- **Do not** use **BARITONE 50 EC** in tank mixtures with alkaline products (e.g. Bordeaux mixture), **Sulphur**, **Captab**, **Mancozeb**, **Endosulfan**, Carbamates, and compounds containing copper.
- When **BARITONE 50 EC** is used in conjunction with any other agricultural remedy, all **WARNINGS**, **PRECAUTIONS** and **DIRECTIONS FOR USE** mentioned on these labels, must be adhered to.

**Mixing instructions:**

- Fill the spray tank to at least half of the required volume with clean water. Ensure sufficient agitation and then add the required measured volume of **BARITONE 50 EC** to the water.
- Maintain agitation during the mixing process.
- Apply the prepared spray mixture as soon as possible (recommended within 4 hours). Ensure agitation during application.
- Prepared spray mixture must not be left in the spray tank for any length of time, e.g. overnight.

**Application instructions:**General:

- Do not apply during the heat of the day or if rain is pending.
- All applications must be performed with correctly calibrated spray equipment, which is in good working order, to give the desired coverage for that particular method of application.
- Ensure that thorough penetration and wetting is obtained.

**Ground application:**

- **BARITONE 50 EC** can be applied by means of chemigation (only potatoes), ground spraying equipment such as tractor mounted boom and nozzle sprayers or mist blowers, standard knapsack sprayers or motorised mist blowers.

**Aerial application:**

Aerial application of **BARITONE 50 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>Potatoes</b> Larvae of the potato Tuber moth <i>(Phthorimaea operculella)</i>	800 ml / ha	<u>Ground application:</u> Apply in a minimum of 500 litres water per hectare. <u>Aerial application:</u> Apply in 30 litres water per hectare.  Commence application after flowering at the start of senescence (leaves start colouring), or when tubers start to fill (bulking stage). If necessary, repeat at two weekly intervals until leaves stop growing. Thereafter, until the crop is lifted, apply at 7 to 10 day intervals.
<b>Tobacco</b> Larvae of the potato Tuber moth <i>(Phthorimaea operculella)</i> (Tobacco leaf miner)	100 ml / 100 l water	<u>Before transplanting:</u> A single application 7 days prior to transplanting can be performed on seedlings in seed beds, to protect them just after transplanting.  <u>After Transplanting:</u> First application must be performed 2 to 3 days after transplant as a directed spray in a 30 cm wide band over the row. Follow up with a second application 7 days after the first. Apply 2 more sprays at 14 day intervals.

#### NOTE

- A minimum of 2 consecutive applications of **BARITONE 50 EC** are required to obtain acceptable control.
- Apply at least 4 treatments in the fields.
- Ensure complete coverage of the plants when applying **BARITONE 50 EC**. Increase the spray volume as the plants' size increase.
- Young transplants: Apply in a 30 cm wide band over the rows. **BARITONE 50 EC** applied onto the soil on both sides of the rows will also kill freshly laid Tuber moth eggs.
- Older transplants: (3<sup>rd</sup> & 4<sup>th</sup> applications) – Ensure that the lower half of the plants are thoroughly covered. If necessary, rows must be sprayed from both sides.

<b>Crop / Pest</b>	<b>Dosage rate</b>	<b>Remarks</b>
<b>Maize</b> Sorghum stem borer, <i>Chilo partellus</i> (First and second generation)	7 ml / 100 m row  <b>PLUS</b>  1.2 ml / 100 m row <b>Lambda 50EC</b>  <b>OR</b>  0.6 ml / 100 m row <b>Lambda Secure 106 CS</b>	<u>Ground application:</u> Apply as soon as 10 % plants show shot-hole damage and direct spray into the funnel area of the plants. If necessary, apply a follow-up treatment shortly before tasseling. A minimum of 3 litres spray mixture must be applied per 100 m row.  In tank mixtures with <b>Lambda 50EC</b> or <b>Lambda Secure 106 CS</b> add a <b>Villa approved buffer + surfactant adjuvant</b> at the recommended rate.
Maize stalk borer, <i>Busseola fusca</i> (First and second generation)	7 ml / 100 m row  <b>PLUS</b>  1.2 ml / 100 m row <b>Lambda 50EC</b>  <b>OR</b>  0.6 ml / 100 m row <b>Lambda Secure 106 CS</b>	Apply as soon as eggs are found on 5 % of the plants or 10 % plants show shot-hole damage. A second application may be required 10 to 14 days later. Direct sprays into plant funnel area. Use at least 3 litres water per 100 m row.  In tank mixtures with <b>Lambda 50EC</b> or <b>Lambda Secure 106 CS</b> add a <b>Villa approved buffer + surfactant adjuvant</b> at the recommended rate.

Consult the **Lambda 50EC**, **Lambda Secure 106 CS** and Villa approved buffer + surfactant adjuvant labels for **WARNINGS, PRECAUTIONS, USE RESTRICTIONS** and **DIRECTIONS FOR USE**.

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

- **LAMBDA 50EC** (L 7787) = **JUDO 50 EC** (L 7785 / N-AR 1104) and
- **LAMBDA SECURE 106 CS** (L 8939) = **JUDO SECURE 106 CS** (L 8938).

**LAMBDA 50EC** and/en **LAMBDA SECURE 106 CS** are registered products of / is geregistreerde produkte van  
**UNIVERSAL CROP PROTECTION (PTY) LTD.**

**JUDO 50 EC** and/en **JUDO SECURE 106 CS** are registered products of / is geregistreerde produkte van  
**VILLA CROP PROTECTION (PTY) LTD.**