

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



Herbicide

# PENDIMETHALIN 500 EC

Reg. No. L 6528 Act No. 36 of 1947

3: 12/1/2023 – Oct2023

A selective pre-emergent emulsifiable concentrate herbicide for the control of annual grasses and broadleaf weeds, as listed in sugarcane, cotton, groundnuts (Spanish type), kidney and field beans, sunflowers, soybeans, potatoes and tobacco.

## ACTIVE INGREDIENT

pendimethalin (dinitroaniline) 500 g/l

GROUP

3

HERBICIDE



DANGER

### Hazard Statements:

Combustible liquid.  
May be harmful if swallowed or in contact with skin.  
May be fatal if swallowed and enters airways.  
Causes mild skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
Harmful if inhaled.  
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: 3082

Registration holder: UNIVERSAL CROP PROTECTION (PTY) LTD.  
Co. Reg. No. 1983/008184/07  
65 Botes Road, Glen Marais, Kempton Park, 1619  
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)

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

DIRECTIONS FOR USE ENCLOSED

Batch Number:  
Date of Manufacture:

**PENDIMETHALIN 500 EC**

Reg. No. L 6528 Act No. 36 of 1947

HRAC HERBICIDE GROUP CODE: 3

**ACTIVE INGREDIENT:**

pendimethalin (dinitroaniline) ..... 500 g/l

Registration holder:

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

Co. Reg. No. 1983/008184/07

P.O. Box 801

KEMPTON PARK, 1620 Tel. (011) 396 2233

**WARNINGS****Hazard statements:**

Combustible liquid.
May be harmful if swallowed or in contact with skin.
May be fatal if swallowed and enters airways.
Causes mild skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Harmful if inhaled.
Very toxic to aquatic life with long lasting effects.

- Handle with care.
- Store away from food and feeds.
- Keep out of reach of children, uninformed persons and animals.
- Mild toxic to birds and wildlife.
- Re-entry: Do not enter treated area within one (1) day after treatment 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 drift to contaminate water or adjacent areas.

**Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions, because the action and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the weeds to the remedy concerned, as well as by the method, time and accuracy of application. The registration holder further does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal or for lack of performance of the remedy concerned, due to failure of the user to follow the label instructions or to the occurrence of conditions, which could not have been foreseen in terms of the registration. Consult the supplier in event of any uncertainty.**

**PRECAUTIONS****Precautionary statements:**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid breathing fumes, mists, vapours or spray.
Wash hands thoroughly after handling. Do not touch eyes.
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: Get emergency medical help immediately.
IF ON SKIN: Wash with plenty of water and soap. Get medical help.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.

Do NOT induce vomiting.
Collect spillage.
Store in a well-ventilated place.
Store locked up.
Dispose of content/container to suitable landfill in accordance with local regulations.

- Do not eat, drink or smoke whilst applying or before washing face and hands.
- Avoid spray drift onto other crops, grazing, rivers, dams and any area not under treatment.
- **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>	
Pendimethalin	500 g/l
Sodium Dodecylbenzene sulfonate	< 200 g/l
Heavy aromatic solvent	< 300 g/l

#### **FIRST AID TREATMENT**

- Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure.
- **Skin:** Remove contaminated clothing, leather goods and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. **Obtain medical attention.**
- **Eyes:** Flush eyes with clean water for at least 15 to 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention.**
- **Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. **Seek medical attention.**
- **Ingestion:** **Seek medical attention immediately** or call a poison control centre for treatment advice. **Do NOT induce vomiting due to aromatic solvent.** Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.
- **Advice to physician:** Treat symptomatically and supportively. No specific antidote known.

#### **RESISTANCE WARNING**

- **PENDIMETHALIN 500 EC** is a group code 3 herbicide. Any weed population may contain individuals naturally resistant to **PENDIMETHALIN 500 EC** and other group code 3 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **PENDIMETHALIN 500 EC** or any other group code 3 herbicide.
- To delay herbicide resistance:
  - avoid exclusive repeated use of herbicides from the same herbicide group code. Alternate or tank mix with products from different herbicide group codes,
  - integrate other control methods (chemical, cultural, biological) into weed control programmes.
- For specific information on resistance management contact the registration holder of this product.

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

**PENDIMETHALIN 500 EC** is a group code 3 herbicide, that inhibits the microtubule polymerization and disrupts cell division. It is a selective, non-systemic herbicide that is absorbed through roots and leaves and affected plants die shortly after germination or following emergence from the soil.

#### **DIRECTIONS FOR USE: Only use as directed.**

##### **Compatibility:**

- The compatibility of **PENDIMETHALIN 500 EC** with other chemicals other than **DIURON 800 SC** (L 3200), is not known.
- If tank mixtures with other products are made, first confirm compatibility by mixing small volumes of the products in the correct ratio with the appropriate quantity of water.
- Water quality and formulation properties of other products may influence compatibility.

- After each day's spraying, flush the tank out thoroughly with water.

#### Mixing instructions:

- **PENDIMETHALIN 500 EC** alone:  
Half-fill the spray tank with clean water and then add the required quantity of **PENDIMETHALIN 500 EC** herbicide while agitating continuously. Top up the remainder of the spray tank with water. The spray mixture should be continually agitated.
- **PENDIMETHALIN 500 EC** tank mixture with **Diuron 800 SC**:  
Half-fill the spray tank with water and then add the required quantity of **Diuron 800 SC** while agitating continuously. Once complete mixing has occurred, add the required quantity of **PENDIMETHALIN 500 EC**, while still agitating continuously. Top up the remainder of the spray tank with water. The spray mixture should be continually agitated.

#### Method of Application:

Accurately calibrate the spray apparatus prior to application and check frequently.

Apply **PENDIMETHALIN 500 EC** to a properly prepared soil, i.e., free of large clods, good tilth, free of weeds and remains of the previous crop.

Apply **PENDIMETHALIN 500 EC** in sufficient water to provide good spray coverage prior to planting the crop.

#### Ground Application:

- Apply 150 to 250 litres water per hectare using conventional sprayers.
- Use spray pressure of at least 200 kPa.
- Use flat fan type nozzles, to ensure a uniform coverage.

#### Aerial Application:

Aerial application of **PENDIMETHALIN 500 EC** may only be done by a registered aerial application operator using a registered and correctly calibrated 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: 20 to 30 droplets per cm<sup>2</sup> must be recovered at the target area.
- Droplet size: A droplet spectrum with a VMD of 350 to 400 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 atomizing 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 atomizers 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:
  - reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage),
  - 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.

**Method of Incorporation:**

- **PENDIMETHALIN 500 EC** must always be mechanically incorporated before seeding and within five (5) days of application if used in sunflowers, groundnuts, kidney beans, dry beans and soybeans. Best results will be obtained if incorporation is carried out within 24 hours of a **PENDIMETHALIN 500 EC** application.
  - **10 to 20 mm rain or irrigation within 7 to 10 days after application is required for best results.**
- a. **Mechanical incorporation:**  
**PENDIMETHALIN 500 EC** should be thoroughly mixed into the upper 5 cm of the soil. This may be done by using a tandem disc or rotary hoe, which should be correctly adjusted and operated. Tandem discs should be set to tillage depth of 7 to 10 cm at 6 to 10 km per hour and the field should be cross disked. Rotary hoes should be set to tillage depth of 5 cm, operated at 5 to 6 km per hour in one direction only.
- b. **Water incorporation:**  
**FOR USE ONLY IN COTTON, SUGARCANE AND TRANSPLANTED TOBACCO.** (Refer “**CROPS AND REMARKS**”).

**APPLICATION RATES****1. SUGARCANE (For control of *Rottboellia cochinchinensis*).**

<b>% Clay</b>	<b>PENDIMETHALIN 500 EC ℓ/ ha</b>	<b>Remarks</b>
0 to 20	Not recommended	
>20	4.0 ℓ  <b>OR</b> 4.0 ℓ  <b>PLUS</b> 2.5 ℓ  <b>Diuron 800 SC</b>	Refer <b>NOTES</b> (Sugarcane) below

**NOTES**

- a. Apply **PENDIMETHALIN 500 EC** pre-emergence to weeds.
- b. Apply to plant cane within two (2) days of planting or to ratoon cane within seven (7) days of cutting.
- c. Water incorporation: **For good control of *Rottboellia cochinchinensis* it is CRITICAL** that incorporation of the herbicide by means of 20 to 50 mm sprinkler irrigation must be carried out as soon as possible, after the application and definitely within three (3) days of application.
- d. Apply **Diuron 800 SC** in a tank mixture with **PENDIMETHALIN 500 EC** where control of a broader weed spectrum is desired; refer to the **Diuron 800 SC** label for weeds controlled.
- e. When tank mixing **Diuron 800 SC** with **PENDIMETHALIN 500 EC**, the **DIRECTIONS, RESTRICTIONS** and **WARNINGS** on the **Diuron 800 SC** label must be complied with.
- f. Refer back to Notes (a), (b) and (c) above. It is important to note that if weeds have already emerged, or if the specified application timing is not adhered to, or if dry conditions are allowed to prevail, **only** partial weed control may be achieved.

**2. CROPS OTHER THAN SUGARCANE**

<b>Soil Type</b>	<b>Application Rate (ℓ/ ha)</b>
Light sand to sandy loam (5 to 20 % clay)	2.0 (1.3**)
Sandy clay loam (21 to 35 % clay)	3.0 (2.0**)
Sandy clay (36 to 50 % clay)	4.0 (2.6**)

\*\* - The lower rates are only to be used where **PENDIMETHALIN 500 EC** is mechanically incorporated and only control of annual grasses is required. **Do not apply the lower rates by air.**

**CROPS AND REMARKS**

<b>Crops</b>	<b>Remarks</b>
<u>Sunflowers</u> <u>Groundnuts (Spanish type)</u> <u>Dry Beans (Phaseolus spp.)</u> <u>Kidney Beans</u> <u>Soybeans</u>	Seeding can be done immediately after incorporation of the <b>PENDIMETHALIN 500 EC</b> and should be done as soon as possible, in order to obtain the maximum period of weed control. If it is necessary to cultivate following application and incorporation, either before or after planting, do not work the soil deeper than the depth to which the <b>PENDIMETHALIN 500 EC</b> was incorporated, or else weed control will be less effective.
<u>Potatoes</u>	Apply <b>PENDIMETHALIN 500 EC</b> after planting to the levelled soil or pre-made ridges and incorporate mechanically. Use <b>only</b> for Van der Plank, Up-to-Date and BP 1 cultivars. Avoid contact of tubers with treated soil.
<u>Cotton</u>	<u>Mechanical incorporation:</u> Cotton can be planted after the <b>PENDIMETHALIN 500 EC</b> incorporation in unridged soil as for the above crops. When planting in ridges, first prepare the ridges, then apply and incorporate the herbicide before planting. <u>Water incorporation:</u> Incorporation by means of 20 to 50 mm sprinkler irrigation must be carried out after the cotton has been planted and the herbicide applied.
<u>Transplanted Tobacco</u>	<u>Mechanical incorporation:</u> Transplanting can commence after <b>PENDIMETHALIN 500 EC</b> has been incorporated in the unridged soil or pre-made ridges. When transplanting, the tobacco roots should be placed under the <b>PENDIMETHALIN 500 EC</b> treated soil layer. <b>Do not</b> use tobacco seedlings grown in seed trays or plants with pruned roots. <u>Water incorporation:</u> Incorporation of <b>PENDIMETHALIN 500 EC</b> by means of sprinkler irrigation must be carried out <b>before transplanting</b> by applying 20 to 50 mm irrigation. <b>Do not</b> prepare planting holes before applying <b>PENDIMETHALIN 500 EC</b> , but afterwards.

**NOTE**

The period of grass weed control obtained with water incorporation of **PENDIMETHALIN 500 EC** will be shorter than that obtained by mechanical incorporation of the herbicide.

<b>SOME WEED SPECIES NORMALLY CONTROLLED BY PENDIMETHALIN 500 EC HERBICIDE WHEN USED AT THE HIGHER RATES IN ACCORDANCE WITH DIRECTIONS FOR USE</b>	
<i>Botanical name</i>	<i>Common name</i>
<b>Annual Grass Weeds</b>	
<i>Brachiara brizantha</i>	Signal grass
<i>Chloris virgata</i>	Feather-top chloris
<i>Chloris pycnothrix</i>	Spiderweb chloris
<i>Digitaria sanguinalis</i>	Crab finger grass
<i>Echinochloa colona</i>	Marsh grass
<i>Echinochloa crusgalli</i>	Barnyard grass
<i>Eleusine indica</i>	Goosegrass
<i>Eragrostis</i> spp.	
<i>Panicum schinzii</i>	Sweet buffalo grass
<i>Panicum maximum</i>	Common buffalo grass
<i>Rottboellia cochinchinensis</i>	Guinea fowl grass
<i>Setaria pallid-fusca</i>	Red bristle grass
<i>Setaria verticillata</i>	Sticky bristlegrass
<i>Tragus racemosus</i>	Large carrotseed grass
<i>Urochloa panicoides</i>	Herringbone grass
<b>Annual Broadleaf weeds</b>	
<i>Amaranthus deflexus</i>	Perennial pigweed
<i>Amaranthus hybridus</i>	Common pigweed
<i>Amaranthus spinosus</i>	Thorny pigweed (variable control)
<i>Amaranthus thunbergii</i>	Red pigweed
<i>Chenopodium album</i>	White goosefoot
<i>Portulaca oleracea</i>	Purslane

**NOTE**

- At the lower rates, the annual grasses mentioned above will be controlled, but variable control of the annual broadleaf weeds will be obtained.
- **Follow-up crops:**  
**Do not** plant or replant any crop other than cotton, soybeans, groundnuts, beans (*Phaseolus* spp.) or sunflowers for a period of one year after application of the **PENDIMETHALIN 500 EC**.
- Tobacco may be replanted at any time after the **PENDIMETHALIN 500 EC** application, **PROVIDED** that the soil is not reworked.

**DIURON 800 SC** is a registered product of **Dow AgroSciences Southern Africa (Pty) Ltd.**