

**RESTRICTED USE AGRICULTURAL REMEDY**

THIS REMEDY IS RESTRICTED DUE TO ACUTE TOXICITY. THIS REMEDY MAY ONLY BE SOLD TO AND USED BY A REGISTERED PEST CONTROL OPERATOR, OR BY SOMEONE UNDER THE SUPERVISION OF A REGISTERED PEST CONTROL OPERATOR, AND ONLY FOR THOSE USES COVERED BY THE PEST CONTROL OPERATOR'S SCOPE OF REGISTRATION. AND ONLY AS DIRECTED ON THIS LABEL.



INSECTICIDE

# Vigour Plus

Reg. No. L11159 Act No. 36 of 1947

**GROUP CODE 1A**

**READ LABEL BEFORE USE**  
**KEEP OUT OF REACH OF CHILDREN AND ANIMALS**

**Vigour Plus** is a water soluble concentrate for the protection of pineapples, potatoes, sugarcane, tobacco, and tomatoes against root knot nematodes (*Meloidogyne* spp.), as well as for the protection of groundnuts against groundnut pod nematode. Also suppresses aphids on potatoes.



**DANGER**

**ACTIVE INGREDIENT**

Oxamyl (Carbamate)

310 g/ ℓ

SG: 1.01 @ 20 °C

UN Number: 2991

**Emergency contact details**  
Tygerberg Poison Information Centre  
Tel: +27 861 555 777

Registered, Manufactured & Distributed by:  
Rolfes Agri (Pty) Ltd.  
(Reg. No. 1998/013411/07) • 288 Mundt Street, Waltloo, 0184  
Gauteng, RSA • Tel: (012) 803-0145  
[www.rolfesagri.co.za](http://www.rolfesagri.co.za)

**HAZARD STATEMENTS:**

Highly flammable liquid and vapour.  
Fatal if swallowed.  
Toxic in contact with skin.  
Fatal if inhaled.  
Causes damage to organs.  
Toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS:**

Keep out of reach of children.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Rolfes**   
**Agri**

**Spill Response and Transpot incidents**

Spill Tech, Oil and chemical pollution control  
Tel: +27 (86) 100 0366 / +27 (83) 253 6618  
[www.spilltech.co.za](http://www.spilltech.co.za)

Shake well before use • Store at room temperature  
Keep out of direct sunlight • Keep container closed when not in use



LIFT HERE

## PRECAUTIONS:

- If medical advice is needed, have container or label at hand.
- Keep out of reach of children.
- Read carefully and follow all instructions.
- 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 explosive-proof electrical/ventilating/lightning equipment.
- Use non-sparking tools.
- Take action to prevent static discharges.
- Do not breathe dust/fumes/gas/mist/vapours/spray.
- Wash hands and affected area thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- In case of inadequate ventilation, wear respiratory protection.
- IF SWALLOWED: Get emergency medical help immediately.
- IF ON SKIN: Wash with plenty of water.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water (or shower).
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- If exposed or concerned: Get emergency medical help immediately.
- Get emergency medical help immediately.
- Specific treatment (see first aid treatment on this label).
- Rinse mouth.
- Take off immediately all contaminated clothing and wash it before reuse.
- Collect spillage.
- In case of fire: Use alcohol resistance foam to extinguish.
- Store in a well-ventilated place. Keep container tightly closed, Keep cool.
- Store locked up.
- Empty all pesticides from the container by placing it upside down over the spray tank and holding it there for at least 30 seconds. Puncture the rinsed container to render it useless and send to a recycler.

## RELEVANT HAZARDOUS SUBSTANCES:

Methanol 38.9% and Oxamyl 29.3%

## FIRST AID TREATMENT:

- **General Advice:** The symptoms resulting from direct exposure to the product could appear a while after exposure. If persistent discomfort, seek medical attention.
- **Eye Contact:** Flush eyes with water as a precaution.
- **Skin Contact:** Remove all contaminated clothing and shoes. Rinse the skin immediately with plenty of water for 15 to 20 minutes under the safety shower. Contact a poison control centre or medical practitioner if irritation occurs or persists.
- **Inhalation:** Immediately remove the affected victim from exposure to an area with fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- **Ingestion:** Obtain immediate medical attention - call a poison control centre or medical practitioner immediately for treatment advice. If conscious, rinse mouth thoroughly with water.
- **Never give anything by mouth to an unconscious or convulsing person. Do not induce vomiting unless directed to do so by a medical professional.**

## NOTE TO PHYSICIAN:

Administer Atropine sulphate intravenously (1,2 -2,0 mg/adult) every 10 - 30 minutes until signs of atropinisation (dry flushed skin and tachycardia) appear. Maintain atropinisation until the patient recovers. Do not apply Pralidoxime (2 PAM, Protopam) and other oximes for **VIGOUR PLUS** exposure

alone. However, for exposure to **VIGOUR PLUS** and organophosphorus insecticides, 2-PAM may be used as required to supplement the atropine sulphate treatment. Do not use morphine.

## WARNINGS:

The following minimum number of days must be allowed between last application and harvest:

- **Groundnuts:** 80 days
- **Pineapples:** 120 days
- **Potatoes:** 40 days
- **Sugarcane:** 120 days
- **Tobacco:** 42 days
- **Tomatoes:** 21 days

## Handle with extreme care.

- Poisonous by swallowing, inhalation, and skin contact.
- Toxic to fish, bees, and wildlife.
- Keep out of reach of children, uninformed persons, and animals.
- Store under lock and key in a cool, dry place away from food and feedstuffs.
- In case of poisoning, immediately call a doctor and make this label available to him/her.
- **Aerial application:** Notify all inhabitants in the immediate vicinity to be sprayed and issue 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 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 that could not have been foreseen in terms of the registration. Consult the Supplier in the event of any uncertainty.

## SYMPTOMS OF HUMAN POISONING:

Headache, fatigue, faintness, giddiness, excessive sweating, nausea, abdominal pains, vomiting, blurred vision, muscle twitching, unusually small pupils, respiratory distress, coma.

## RESISTANCE PREVENTION AND MANAGEMENT:

**VIGOUR PLUS** is an insecticide/ nematocide Group Code 1A product. Any aphid or nematode population may contain individuals naturally resistant to **VIGOUR PLUS** and other Group Code 1A insecticides/ nematocides. The resistant individuals eventually dominate the population if these products are used repeatedly and will not be controlled by **VIGOUR PLUS** or any other Group Code 1A product.

## To delay the development of resistance:

- Avoid exclusive repeated use of Group Code 1A products,
- Alternate with products from other Group Codes,
- Integrate other control methods (e.g., crop rotation with non-susceptible crops, fallow lands, etc.) into nematode control programs.

Since the occurrence of resistance is difficult to detect prior to use, it is of utmost importance that all the above precautions are strictly adhered to. The Registration Holder or Distributor cannot be held responsible if **VIGOUR PLUS** fails to control resistant nematodes. For further advice on the prevention of resistance, contact your Distributor's local representative.

## USE RESTRICTIONS:

- **Stress conditions:** Optimal systemic activity of **VIGOUR PLUS** depends on translocation of the active ingredient inside the treated plant which must therefore be growing actively. Reduced efficacy may occur when stress factors such as drought, cold, disease, hail damage etc. impairs translocation.
- **Cultural practices:** Monoculture and/or crop rotation with nematode susceptible crops must be avoided.

- **Soil type and moisture:** Light sandy soils and/or dry soil during application can result in poor control.
- **Infected soil and/or high risk areas:** Apply a full control program consisting of soil fumigation followed by a granular nematocide at or just after planting followed by one or more foliar sprays on soils with a history of high nematode infestations and/or in high risk areas such as Barkley-West, Christiana, Coetzersdam, Douglas, Hopetown, PK le Roux Dam, Prieska, Tosca, Vaalharts and Vryburg.
- **Resistant nematodes:** Columbia root knot nematode (*Meloidogyne chitwoodi* and *M. fallax*) are not controlled. These 2 species occur in colder areas such as Clocolane, Maclear and Ugie as well as in warmer areas such as Boston, Mooi River, Swaziland and Vaalharts. Golden cyst nematode (*Golobodera pallida* and *G. rostochiensis*) is also not controlled.
- **Potatoes:** Plant only certified nematode free tubers. Use only on table potatoes: not on seed or chips potatoes. Do not store potatoes in the soil: lift as soon as possible after last foliar application and not later than 40 days.

#### AERIAL APPLICATION:

Do not apply through a centre pivot.

Direct the spray onto the crop. **VIGOUR PLUS** that is sprayed onto bare soil serves no purpose.

**Ground application:** Apply by means of a tractor mounted boom sprayer which is correctly calibrated to deliver at least 250 ℓ spray mixture per hectare, at a constant speed of 5-8 km/h and a pressure of 150-250 kPa to ensure even application and thorough wetting of the crop. Do not spray when wind speed exceeds 15 km/h or under gusty wind conditions.

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

**VIGOUR PLUS** may only be applied by a registered Aerial Application Operator using a correctly calibrated, registered aircraft according to the instructions of SABS Code 0118 (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 ℓ 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 microns is recommended. Limit the production of fine droplets less than 150 microns (high drift and evaporation potential) to a minimum.
- **Flying height:** Maintain the height of the spray boom at 3 to 4 meters 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, with a whirling hygrometer, should not exceed 8°C.
- Stop spraying if the wind speed exceeds 15 km/h.
- Stop spraying under turbulent, unstable, and dry conditions during the heat of the day.
- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80 % and above) may lead to the following:
  - 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.

#### DE-ACTIVATION OF VIGOUR PLUS SOLUTIONS:

After use, add 2.5 kg of sodium carbonate per 100 ℓ **VIGOUR PLUS** spray mix still in the tank to deactivate remaining product.

#### RESTRICTED USES: USE ONLY AS DIRECTED.

It is very important that the pH of the spray water be determined prior to mixing with an accurate pH meter and corrected to pH 5.0 with a suitable buffer.

Use spray mixture within 8 hours. Do not leave overnight.

**Note:** Dosages indicated are per 100 ℓ of water and not per hectare. Read DIRECTIONS carefully. Also see notes under USE RESTRICTIONS

CROP AND PEST	DOSAGE / 100 ℓ WATER	DIRECTIONS
<b>GROUNDNUTS</b> Groundnut pod nematode ( <i>Ditylenchus africanus</i> )	1,2 ℓ + 50 - 150 ml <b>AQUA-RIGHT 5®</b>	Apply at least 250 ℓ spray mix/ha as a foliar spray at the commencement of peg formation (with Sellie approximately 60 days after planting). Ensure thorough wetting of the foliage.
<b>PINEAPPLES</b> Plant parasitic nematodes	<b>PLANT CROP FIRST APPLICATION</b> 0.64 ℓ + 50-150 ml <b>AQUA-RIGHT 5®</b>  <b>FURTHER APPLICATIONS</b> 0.32 ℓ + 50-150 ml <b>AQUA-RIGHT 5®</b>  <b>RATOON CROP</b> 0.32 ℓ + 50-150 ml <b>AQUA-RIGHT 5®</b>	Where heavy nematodes infestation occurred on previous crops, fumigate the soil with a registered fumigant before planting.  Ensure that soil moisture is sufficient to sustain plant growth: healthy plants render better results. Apply the first foliar application at 500 ℓ spray mix/ha as soon as root formation commences. Direct spray onto the rows and ensure thorough wetting.  Apply 5 more applications at 4 weekly intervals and gradually increase the spray volume up to 1000 ℓ spray mix/ha for mature plants.
<b>POTATOES</b> Root knot nematode and suppression of aphids	<b>GROUND APPLICATION:</b> 0.8 ℓ + 50-150 ml <b>AQUA-RIGHT 5®</b>  <b>Aerial application</b> 13,3 ℓ (4 ℓ/ha) + 50-150 ml <b>AQUA-RIGHT 5®</b>	Fumigate soil with a registered fumigant before planting. Apply 250 ℓ spray mix/ha 1 week after emergence followed by 600 ℓ spray mix/ha 5 weeks after emergence. In case of heavy infestation, apply another 600 ℓ spray mix/ha 8-9 weeks after emergence.  Apply at least 30 ℓ spray mix/ha 1 and 5 weeks after emergence. In case of heavy infestation, apply another 30 ℓ spray mix/ha. 8-9 weeks after emergence.

CROP AND PEST	DOSAGE / 100 ℓ WATER	DIRECTIONS
<b>SUGARCANE</b> Ratoon crops only Nematodes	<p><b>GROUND APPLICATION:</b>  2,4 – 3,2 ℓ + 50 -150 mℓ <b>AQUA-RIGHT 5®</b></p> <p><b>AERIAL APPLICATION:</b>  24.0 ℓ -32.0 ℓ (7,2 -9,6 ℓ/ha) +50 -150 mℓ <b>AQUA-RIGHT 5®</b></p>	<p>Apply 300 ℓ spray mix/ha by means of a knapsack or low pressure tractor mounted boom sprayer or 86 -115 mℓ <b>VIGOUR PLUS</b> in 3.6 ℓ water/100 m linear row length at 1.2 m row spacing.</p> <p>Apply at the 6 -8 leaf stage 6 -8 weeks after the previous harvest, provided that good tillering has taken place (winter cut fields may take longer). Apply only when plants are growing actively. <b>Direct spray onto the foliage.</b> On very weak sands (less than 5% clay) and areas where high population of nematodes may occur, apply 300 ℓ spray mix/ha with 3.2 ℓ <b>VIGOUR PLUS</b>/100 ℓ water. Apply 30 ℓ spray mix/ha as directed above.</p>
<b>TOBACCO</b> Root knot nematode	<p><b>SEEDBED:</b>  0,08 ℓ +50-150 mℓ <b>AQUA-RIGHT 5®</b></p> <p><b>AFTER TRANSPLANTING:</b>  0,8 ℓ + 50-150 mℓ <b>AQUA-RIGHT 5®</b></p>	<p>Fumigate soil before planting with a registered fumigant. Implement the full program to ensure effective protection against nematodes infestation.</p> <p>Drench the seedbeds 48 -24 hours prior to transplanting with 2 ℓ of the spray mix/m<sup>2</sup> of seedbed surface.</p> <p>Do not use the spray mix as transplant water or for dipping.</p> <p>a) Where no or inadequate control of nematodes occurred during the preceding season or where severe nematode infestation may occur, apply 250 ℓ spray mix/ha as a directed foliar application 2 weeks after transplanting. Repeat after 3 weeks with 500 ℓ spray mix/ha.</p> <p>b) Where light nematode infestation normally occurs or where effective nematode control was applied during the preceding season, apply 500 ℓ spray mix/ha as a directed foliar application 5 weeks after transplanting.</p>
<b>TOMATOES</b> Root knot nematode	<p><b>SEEDBEDS:</b>  0,4 ℓ + 50 -150 mℓ <b>AQUA-RIGHT 5®</b></p> <p><b>SEEDLING TRAYS</b>  0,4 ℓ + 50 - 150 mℓ <b>AQUA-RIGHT 5®</b></p> <p><b>AFTER TRANSPLANTING</b>  0,8 ℓ + 50 - 150 mℓ <b>AQUA-RIGHT 5®</b></p>	<p>Fumigate soil before planting with a registered fumigant. Implement the full program to ensure effective protection against nematodes infestation.</p> <p>Drench seedbeds 48 -24 hours prior to transplanting with 2 ℓ spray mix/m<sup>2</sup> of seedbed surface.</p> <p>Spray seedling trays 48 - 24 hours prior to transplanting with 0,5 ℓ spray mix/m<sup>2</sup> of the total seed tray surface.</p> <p>Apply 250 ℓ spray mix/ha as a directed foliar application 2 weeks after transplanting. Repeat after 3 weeks with 500 ℓ spray mix/ha.</p>

**AQUA-RIGHT 5®** is a registered Trademark of Rolfes Agri (Pty) Ltd.

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