BEFORE USING THIS PRODUCT, READ THE LABEL CAREFULLY. KEEP OUT OF REACH OF CHILDREN AND ANIMALS. SHAKE THE BOTTLE WELL BEFORE USE

Insecticide

SPINOSIN 480 SC

Reg. No. L 9478 Act No. 36 of 1947

3: 30/08/2022 – May2023

A suspension concentrate contact and stomach insecticide for the control of insects on agricultural crops as listed.

ACTIVE INGREDIENT
spinosad (naturalyte) 480 g/ℓ

GROUP 5A INSECTICIDE

Hazard Statements:
Very toxic to aquatic life with long lasting effects.

Precautionary Statements:
Avoid release into the environment. Dispose of contents/container to suitable landfill in accordance with local regulations.

WARNING

ℓ

villa

UN Number: 3082

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

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:

SPINOSIN 480 SC
Reg. No. L 9478 Act/Wet No. 36 of/van 1947
IRAC INSECTICIDE GROUP CODE : 5A

ACTIVE INGREDIENT:
spinosad (naturalyte) ……480 g/ℓ

Registration holder:
VILLA CROP PROTECTION (PTY) LTD.
Co. Reg. No. 1992/002474/07
P.O. Box 801, KEMPTON PARK, 1620 Tel. (011) 396 2233

WARNINGS

Withholding periods:

Minimum number of days between the last application and harvest or grazing:	
Apples	30 days
Cruciferae (cabbage) & canola	3 days
Citrus	14 days
Peaches	21 days
Plums	21 days
Potatoes	7 days
Table Grapes	28 days
Strawberries	14 days
Tomatoes	3 days

NOTE

THE RECOMMENDED WITHHOLDING PERIOD BETWEEN LAST APPLICATION AND HARVEST MEETS LOCAL RESIDUE REQUIREMENTS BUT MAY NOT MEET EXPORT REQUIREMENTS. IF THE TREATED CROP IS INTENDED FOR THE EXPORT MARKET, CONSULT THE RELEVANT EXPORTING BODY BEFORE APPLICATION OF THE PRODUCT, REGARDING PRE-HARVEST INTERVAL REQUIREMENTS.

Hazard statements:

Very toxic to aquatic life with long lasting effects.

- Handle with care.
- Do not spray over or allow drift to contaminate water bodies such as dams, ponds, rivers, streams or fish hatcheries.
- 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.

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 effected 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:

Avoid release into the environment.
Collect spillage.
Dispose of contents/container to suitable landfill in accordance with local regulations.

- Wash with soap and water after use or after accidental skin 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 onto other crops, grazing, rivers, dams or areas not under treatment.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS**: Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler www.croplife.co.za. Do not bury, burn, or donate the container to any other parties that may use it as a container for food or beverages.
- Store in original labelled container only.
- Destroy the container by perforation and flattening and dispose of it in a safe way.
- **Do not** re-use the empty container for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.

Relevant hazardous components	
Spinosad	480 g/ℓ
Dispersant	<100 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 and shoes. Gently wipe of excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if necessary.
- Eyes: Flush eyes with large amounts of gently flowing cold water or normal saline solution, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, get medical attention.
- Inhalation: Remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Avoid mouth-to-mouth resuscitation. Keep person warm and at rest. Treat symptomatically and supportively as and when required.
- Ingestion: Have victim rinse mouth thoroughly with water. If the person is alert and respiration is not depressed, give large quantity of water to drink. Never give anything by mouth to an unconscious person. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

RESISTANCE WARNING

SPINOSIN 480 SC is a group code 5A insecticide. Any insect population may contain individuals naturally resistant to **SPINOSIN 480 SC** and other group code 5A insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **SPINOSIN 480 SC** or any other group code 5A 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 programmes.
- Do not use less than recommended label rates of any insecticides.
- Target applications preferably early instar larvae and eggs of the pest whenever possible.

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

MODE OF ACTION

SPINOSIN 480 SC contains **Spinosad,** a naturalyte compound which belongs to the IRAC group code 5. It is a systemic insecticide active by contact and ingestion. Causes paralysis. This site of action is activation of the nicotinic acetylcholine receptor (nAChR), but at a site distinct from that of nicotine or the neonicotinoids, causing hyperexcitation of the nervous system and paralysis.

PRODUCT INFORMATION:

1. **Effect of SPINOSIN 480 SC on beneficial Insects:**
   - Moderately toxic to bees.
     - **SPINOSIN 480 SC** is toxic to bees when exposed to direct spray, or sprayed flowering crops, before spray deposit is dry.
     - Do not apply directly to foraging Bees, or Bee colonies.

  - Apply only at night when crop is flowering or other food vegetation is within 500 m from the spraying area.
  - Allow at least three (3) hours between application and foraging period of Bees.
  - Co-operate and synchronise in this regard with neighbours, beekeepers and local extension services when applying in the vicinity of crops in flower stage, especially where pollination is required for production of fruit. Once the spray deposit has dried, there is minimal effect on Bees.
- Harmful to "Parasitoids".
- Harmless to Predatory Mites.
- Slightly harmful to Coccinellidae.
- Slightly harmful to Neuroptera.
- Citrus beneficial insects:
  - *Chilochorus nigritus* – Slightly harmful.
  - *Aphytis lingnanensis* – Harmful.
  - *Coccidoxenoides peregrinus* – Very harmful.
  - *Trichogrammatoidea cryptophlebiae* – Slightly harmful.
  - *Euseius citri* – Slightly harmful.

2. <u>Use of SPINOSIN 480 SC in an Integrated Pest Management (IPM) Programme</u>:
SPINOSIN 480 SC can be used as part of IPM programmes in various crops. Apply **SPINOSIN 480 SC** when regular scouting of fields/orchards confirms that target pest infestations have reached the economic threshold. **SPINOSIN 480 SC** used under Good Agricultural Practices (GAP), does not have a significant impact on beneficial (parasitic or predaceous) insects and mites, other than reducing the target pest species as a food source. Despite **SPINOSIN 480 SC** being classified as "harmful" to Parasitoids, a rapid recovery in the numbers of beneficial insects occurs after application. These beneficial arthropods will assist in the extended natural control of pest species and reduce the potential for secondary pest outbreaks for which additional insecticide treatments may be required. Where **SPINOSIN 480 SC** is applied in tank mixtures with other insecticides with less selectivity with regard to beneficial predatory insects, the advantage of **SPINOSIN 480 SC** to the IPM programme may be reduced.

<u>DIRECTIONS FOR USE:</u> Use only as directed.
- **SPINOSIN 480 SC** is a suspension concentrate, which should be mixed with water and applied as a foliar spray with ground equipment equipped for conventional insecticide application.

Compatibility, pH and tank mixing:
- Do not apply **SPINOSIN 480 SC** in muddy water.
- Although the pH of the spray mixture does not have an effect on the initial knockdown performance of **SPINOSIN 480 SC**, a low pH value (<pH 6) of the spray mixture will decrease the residual performance. Buffer agents are generally not needed. Acidifiers or products that will acidify the spray mixture below pH 6 (e.g. phosphates, high rates of foliar fertilizers, etc.) should be avoided or buffered back to pH 6 to 9. **SPINOSIN 480 SC** will perform best at pH 6 to 9.
- **SPINOSIN 480 SC** is compatible with the adjuvant **Direct** and **Charge**.
- **When adding wetting agents to the spray mixture, a compatibility test needs to be carried out.**
- Before tank mixing **SPINOSIN 480 SC** with other products, a pH and compatibility test (jar test) using relative proportions of tank mix products should be conducted prior to mixing in the spray tank.
- If foliar fertilizers are used, the compatibility test should be repeated with each batch of fertilizer utilising the mixing water source.
- Vigorous, continuous agitation is required for all tank mixed.
- Back flow sparger pipe agitators, at the bottom of the spray tank, generally provide the most effective agitation in the spray tanks.
- To prevent foaming in the spray tank, avoid mixing air into the spray mixture.

<u>Mixing instructions:</u>
- **Shake the container before opening.**
- Half fill the spray tank with clean water.
- Start agitation and add a buffer followed by the required amount of **SPINOSIN 480 SC** to the spray tank.
- Continue mixing and agitation while filling the spray tank to the required spray volume.
- Maintain sufficient agitation during application, to ensure uniformity of the spray mix.
- Do not allow water or spray mixture to back-siphon into the water source.

Mixing instructions for tank mixtures:

- Fill the spray tank with water to approximately one quarter of the total spray volume required.
- Start agitation and add a buffer followed by the different formulation types in the order indicated below, allowing time for complete mixing and dispersion after addition of each product.
  1. First add granular (WG / SG) and/ or powder (WP/SP) formulations, after being pre-mixed with water (slurried) and added to the spray tank through a 20 to 35 mesh screen. Allow extra mixing and dispersion time for water dispersible granule (dry flowable) (WG) products.
  2. Next add liquid formulations in the following order as applicable, when the spray tank has nearly been filled to the final required volume with water: SC, EC/EW.
  3. Surfactants, especially oil containing products are added last to the mixture.

APPLICATION

- **At all times, use suitable, correctly calibrated equipment, in good working order, to ensure thorough wetting of all parts of the plant. Follow the manufacturer's recommendations for ideal nozzle spacing, pressure, and boom height.**
- Use conventional ground spray equipment calibrated to provide thorough coverage of the target crop. Under certain conditions, nozzles on drop arms may be required to obtain uniform crop coverage. Hollow cone nozzles suitable for insecticide spraying are recommended.
- Pay attention to ground speed and calibration, wind speed, and foliar canopy conditions.

DECIDUOUS FRUIT TREES:

- Apply **SPINOSIN 480 SC** as a high volume (HV) application to deciduous fruit trees. Calculate the rate per hectare according to the formula for High Volume Requirements HVR, using *"Unrath's Formula"* for *"Tree Row Volume"* (TRV).

$$\text{TRV} = \frac{\text{Tree Height (TH)* x Tree Width (TW)* x 937}}{\text{Distance between Rows (RW}} = \text{HVR in litres per hectare}$$

* Tree height and tree width should be measured during summer when trees are in full flush

Directions for application volumes at different growth stages and the calculation of rate per hectare, based on High Volume Requirements (HVR):

Growth Stage	*Application Volume*
Bud break to Full Blossom	60 % of HVR
75 % Petal fall to (1) one month later (Mid-season)	80 % of HVR
Mid-season to Post harvest, before Leaf drop	100 % of HVR

$$\text{Rate per ha} = \frac{\text{HVR in ℓ/ha x Rate per 100 litres}}{100}$$

TABLE GRAPES:

- Apply **SPINOSIN 480 SC** as a high volume (HV) application to table grapes. Calculate the amount of **SPINOSIN 480 SC** per hectare according to the high-volume requirements for a specified growth stage by using the following guidelines:

Growth Stage	*Suggested volume of spray mixture per hectare for high volume application*
2.5 cm to 25 cm shoot length	500 to 750 litres
25 cm shoot length to just prior to flowering	750 to 1000 litres
Flowering to pea berry stage	1000 to 1200 litres
Pea berry stage to harvest	1200 to 1500 litres

NOTE

The breakdown of Spinosad on crops, which are produced under shade cloth, may take longer which will increase the withholding period.

APPLICATION RATES

Crop / Pest	*Dosage Rate*	*Remarks*
Apples African Bollworm *Helicoverpa armigera)*	20 mℓ	Apply as a high volume, cover application when the pest infestation levels are at or above threshold level. **NOTE** As a single corrective spray against bollworm, **SPINOSIN 480 SC** is more effective against early instar larvae.
Thrips (Various species including Western Flower Thrip *Frankliniella occidentalis*)	15 mℓ	Early Thrip damage normally occurs during the period early blossom to just after blossom. Hot weather conditions favours Thrip activity. Recommended monitoring methods must be practised to determine the presence and extent of the pest, especially during the susceptible stage. Apply **SPINOSIN 480 SC** during flowering as a high volume cover application when pest infestation levels are at, or above the threshold levels. Depending on the duration of the flowering period and the infestation level, a follow-up treatment may be required within 7 to 10 days to obtain adequate control. **Resistance management: SPINOSIN 480 SC** should not be applied **in total** more than (4) four times per season on apples.
Cruciferae (Cabbage) & Canola Diamondback moth larvae (*Plutella xylostella*) Cabbage webworm (*Hellula undalis*) Tomato leafminer (*Tuta absoluta*)	30 mℓ **PLUS** **Charge** 25 mℓ / 100 ℓ water	Commence with spraying when the pest is first noticed or apply as a follow-up application in a control programme after insecticides from a different mode of action code as required in anti-resistant programmes. Apply as a full cover spray in a minimum of 500 litres water per hectare every 7 to 10 days. Apply at least two (2) consecutive **SPINOSIN 480 SC** treatments. Use the shorter spray interval of 7 days under heavy infestations pressure or when climatic conditions favour development and dispersal of the pest (e.g. summer months). For the purpose of a **resistance management programme**, do not apply more than four (4) consecutive **SPINOSIN 480 SC** treatments in a 4-weekly period. Thereafter, alternate in a control programme with registered products from a different mode of action code for the duration of at least one generation of the pest. **Do not** exceed more than six (6) **SPINOSIN 480 SC** treatments per cultivation.
Citrus Citrus thrips *(Scirtothrips aurantii)*	15 mℓ **PLUS** 300 mℓ of light or medium narrow range mineral spray oil	Start with application after 90 % petal fall at the first signs of Thrip infestation. Apply as a light to medium cover spray to **before** the point of run-off. Repeat application when necessary but do not apply more than (4) four applications of **SPINOSIN 480 SC** per season. Alternate with a different class of insecticide for resistance management purposes.
African Bollworm *(Helicoverpa armigera)*	20 mℓ	Apply **SPINOSIN 480 SC** as a high volume, cover application when pest infestation levels are at or above the threshold level. **NOTE** As a single corrective spray against Bollworm, **SPINOSIN 480 SC** is more effective against early instar larvae.

Crop / Pest	*Dosage Rate*	*Remarks*
Peaches African Bollworm *(Helicoverpa armigera)*	20 mℓ	Apply **SPINOSIN 480 SC** as a high volume, cover application when pest infestation levels are at or above the threshold level. **NOTE** **SPINOSIN 480 SC** is more effective against early instar Bollworm larvae as a single corrective spray.
Plums African bollworm (*Helicoverpa armigera*)	20 mℓ	**SPINOSIN 480 SC** is more effective against smaller early instar larvae in the case of a single corrective spray against Bollworms. Apply as a high volume cover application as soon as the infestation level is at, or above threshold level, as confirmed by scouting counting's. **Resistance management:** Do not apply **SPINOSIN 480 SC** more than four (4) times per season on Plums.
Thrips Various species including Western flower thrips (*Frankliniella occidentalis*)	15 mℓ	Early thrip damage is favoured by hot weather conditions during the period of early blossom to shortly after blossom. It is important to adhere to recommended monitoring methods in order to confirm the presence and extent of the pest population, especially during the susceptible stage. Apply as a high volume cover application as soon as the infestation level is at, or above threshold level, as confirmed by scouting counting's. Depending on the flowering time period and the Thrips infestation pressure, a follow-up treatment within 7 to 10 days may be required to obtain effective control. **Resistance management:** Do not apply **SPINOSIN 480 SC** more than four (4) times per season on Plums.

Crop / Pest	*Dosage Rate*	*Remarks*
Potatoes Potato tuber moth larvae (*Phthorimaea operculella*) African Bollworm (*Helicoverpa armigera*) Potato leaf miner (*Liriomza huidobrensis*) Tomato leafminer (*Tuta absoluta*)	30 mℓ (150 to 300 mℓ / ha) **PLUS** 150 to 250 mℓ of light or medium narrow range mineral spray oil **OR** **Direct** / a Villa approved surfactant	Apply as part of a spray programme as a full cover spray in 500 to 1000 litres water per hectare every 7 to 10 days. Commence with application when the pests are first noticed or apply as a follow-up application in a spray programme following insecticides from a different class as required in a resistant management programme. Apply a minimum of 2 consecutive **SPINOSIN 480 SC** sprays to ensure effective control of pests. The volume of spray mixture applied per hectare depends on plant height and density of the leaf canopy. Start with a minimum of 500 litres water per hectare on young plants and increase volume up to 1000 litres water per hectare as the crop size and volume increases. Use the shorter 7 day spray interval under heavy infestation pressure or when climatic conditions favour the pest (e.g. during summer months or when beneficial insects are absent). As a resistance management strategy, do not apply **SPINOSIN 480 SC** more than (4) four times consecutively in a 28-day period. Alternate **SPINOSIN 480 SC** in a spray programme with an insecticide from a different chemical class for the duration of at least one generation of the pest. Do not apply **SPINOSIN 480 SC** more than 6 times per cultivation period. **Potato leaf miner (*Liriomyza huidobrensis)***: Use **SPINOSIN 480 SC** in rotation with **Biomectin®** (L 7979) in a resistance management spray programme. Ridge at least twice during growing season to assist in control of Potato tuber moth.
Strawberries African bollworm (*Helicoverpa armigera*)	20 mℓ	**SPINOSIN 480 SC** is more effective against smaller early instar larvae in the case of a single corrective spray against bollworms. Apply as a full cover application.
Thrips Various species including Western flower thrips (*Frankliniella occidentalis*)	15 mℓ	Commence spraying at the first signs of Thrips presence. Repeat application if necessary. Apply as a light cover spray. Complete coverage of the target area is essential. **Resistance management:** Do not apply **SPINOSIN 480 SC** more than three (3) times per season to any field of Strawberries. Alternate the use of **SPINOSIN 480 SC** with registered insecticides with a different mode of action.

Crop / Pest	*Dosage Rate*	*Remarks*
Table Grapes African Bollworm (*Helicoverpa armigera*)	20 mℓ	Apply **SPINOSIN 480 SC** as a high volume cover application when scouting indicates infestation level at or above the threshold level. **NOTE** As a single corrective spray against Bollworm, **SPINOSIN 480 SC** is more effective against early instar larvae.
Thrips Various species including Western Flower Thrip (*Frankliniella occidentalis*)	15 mℓ	Thrips and the associated damage on grapes occurs mainly during early flowering period, until shortly after flowering. In certain areas and under certain conditions such as hot and dry weather, Thrips may occur at a later stage during the season. Monitor regularly to confirm the presence of Thrips and consider control measures when scouting indicates infestation levels at or above threshold levels. Apply **SPINOSIN 480 SC** as a high volume cover application. Depending on the length of the flowering period or presence of Thrips, a follow-up treatment within 5 to 7 days may be required to obtain adequate protection. Do not apply more than (2) two consecutive **SPINOSIN 480 SC** applications per season and adhere to withholding periods.

Crop / Pest	*Dosage Rate*	*Remarks*
Tomatoes American leafminer (*Liriomyza trifolii*) African Bollworm (*Helicoverpa armigera*) Tomato Semi-looper (*Chrysodexis acuta*) Tomato leafminer (*Tuta absoluta*)	30 mℓ (150 to 300 mℓ/ha) **PLUS** 150 to 250 mℓ of light or medium narrow range mineral spray oil **OR** **Direct** / a Villa approved surfactant	Apply as part of a spray programme as a full cover spray in 500 to 1000 litres water per hectare every 7 to 10 days. Commence with application when the pests are first noticed or apply as a follow-up application in a spray programme following insecticides from a different class, as required in a resistant management programme. Apply a minimum of (2) two consecutive **SPINOSIN 480 SC** sprays, to ensure effective control of pests. The volume of spray mixture applied per hectare depends on plant height and density of the leaf canopy. Start with a minimum of 500 litres water per hectare on young plants and increase volume up to 1000 litres water per hectare as the crop size and volume increases. Use the shorter 7 day spray interval under heavy infestation pressure or when climatic conditions favour the pest (e.g. during summer months or when natural enemies are absent). As a resistance management strategy, do not apply **SPINOSIN 480 SC** more than 4 (four) times consecutively in a 28-day period. Alternate **SPINOSIN 480 SC** in a spray programme with an insecticide from a different chemical class for the duration of at least one generation of the pest. Do not apply **SPINOSIN 480 SC** more than (6) six times per cultivation period. **SPINOSIN 480 SC** can be applied in rotation with **BOLLDEX™** (L 8895) as part of an IPM programme, as well as for resistance management purposes. Apply “block applications” – i.e. 3 to 4 consecutive applications of the one product, followed in the same way by the other product.

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

- **BIOMECTIN® 18 EC** (L 7979 / N-AR 1112 / W1301429) = **UNIMECTIN 18EC** (L 7978 / N-AR 2206),
- **DIRECT** (L 8680) = **LINK** (L 8675) and
- **CHARGE** (L 9100 / W 130953 / N-AR 2241) = **TECHNIWET SUPER** (L 9239) = **BREAK-THRU® S240** (L 6764).