

# GF-120™ NF

## INSECTICIDE

Registration number/Registrasie nommer: L7331 Act/Wet Nr / No 36 of / van 1947  
 N-AR 1041  
 W130107

**READ THE LABEL BEFORE USE  
 KEEP OUT OF REACH OF CHILDREN & ANIMALS**

<b>GROUP</b>	<b>5</b>	<b>INSECTICIDE</b>
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<b>A SELECTIVE CONCENTRATE BAIT FOR CONTROL OF FRUIT FLY SPECIES INFESTING VARIOUS FRUIT AND VEGETABLE CROPS. SUITABLE FOR USE IN ORGANIC CROP PRODUCTION.</b>	<b>'N SELEKTIEWE KONSENTRAAT LOKAAS VIR BEHEER VAN VRUGTEVLIEG SPESIES WAT VERSKEIE VRUGTE- EN GROENTEGEWASSE AANVAL. GESKIK VIR GEBRUIK IN ORGANIESE GEWASPRODUKSIE.</b>
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**HAZARD STATEMENTS:**

Harmful to aquatic life with long lasting effects

**PRECAUTIONARY STATEMENTS:**

Dispose of contents/container in accordance with applicable regulations.

Wear gloves and face shield when handling the concentrate.

**Active Ingredient/Aktiewe Bestanddeel**

Spinosad (Spinosyns) ..... 0,24 g/L ..... Spinosad (Spinosiene)

Net volume ..... L ..... Netto volume

**REGISTRATION HOLDER / REGISTRASIEHOUER**  
 CORTEVA AGRISCIENCE RSA (PTY) LTD / (EDMS) BPK  
 REG NO 1991/003030/07  
 Lakefield Office Park, Block A, 2<sup>nd</sup> Floor  
 272 West Avenue, CENTURION, 0157 South Africa

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Batch No. ....		..... Lot No.
Date of Manufacture .....		..... Datum van Vervaardiging
Expiry date.....		..... Vervaldatum

UN NO: N/R

Local Emergency No: +27(0)82-895-0621 (SA only)  
 24 Hour Emergency Tel No: +32-3-575-5555  
 Griffon Poison Information Centre: +27(0)82-446-8946  
 Poisons Helpline: +27(0)861-666-777

## PRECAUTIONS

### HAZARD STATEMENTS:

Harmful to aquatic life with long lasting effects

**Withholding period** – Minimum time between last application and harvest:

All crops .....	1 day
Pome, Stone, grapes, tomatoes and peppers .....	0 day

Handle with care.

May cause slight eye irritation.

Do not apply directly to open water.

Store in a cool and dry place, away from food and feedstuffs.

Keep out of reach of children, uninformed persons, and animals.

Beneficial Insects:

“Relatively harmless to Bees”

- ❖ **GF-120™ NF** is relatively safe for contact with bees.
- ❖ **GF-120™ NF** releases an ammoniac type of compound which attracts fruitflies but is repellent to bees. It is therefore highly unlikely that bees will be attracted and killed by the bait.
- ❖ Notwithstanding, do not apply directly to foraging bees, or bee colonies.

**GF-120™ NF** is relatively harmless to beneficial insects such as Parasites, Predatory mites, Coccinellidae and Neuroptera.

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

## DISCLAIMER

**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 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 use 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 STATEMENT:

Dispose of contents/container in accordance with applicable regulations.

Prevent freezing.

Store in original labeled container only.

Avoid inhalation of spray mist.

Wash with soap and water after use or accidental skin contact.

Wear gloves and face shield when handling the concentrate.

Avoid contamination of skin and eyes. In case of accidental contact with eyes, wash with running water for at least 15 minutes. Get medical attention if irritation persists.

Do not eat, drink, or smoke whilst mixing or applying.

When handling or applying always wash hands and face before eating, drinking, smoking, or using the toilet.

Avoid spray drift onto adjacent crops, grazing, rivers, and dams.

Clean applicators before using for other remedies and dispose of wash water where it will not contaminate crops, grazing, rivers, dams, and water sources.

Invert the empty container over spray tank for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse empty container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container by perforation, flattening, and burying and do not use for any other purpose.

Prevent contamination of food, feedstuffs, drinking water and eating utensils during handling, storage, or disposal.

## RELEVANT SUBSTANCES

COMPONENT	CAS-NO	Concentration (% w/w)
Spinosad (ISO) (reaction mass of spinosyn A and spinosyn D n ratios between 95:5 to 50:50)	168316-95-8	0,0226

## FIRST AID

### Inhalation

Move person to fresh air. If person is not breathing, call an emergency responder or an ambulance, then give artificial respiration; if by mouth-to-mouth use rescuer protection (pocket mask, etc). Call a poison control centre or doctor for further treatment advice.

### Skin contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

### Eye contact

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

### Ingestion

No emergency medical treatment necessary.

## Symptoms of human poisoning

None known.

### Note to physician.

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet and if available, the product container or label with you when calling a poison control centre or doctor or going for treatment.

## RESISTANCE WARNING STATEMENT

### Insecticide Resistance Management (IRM)

The classification scheme of insecticides is based on "mode of action" **GF-120™ NF** is classified as a spinosyn (subgroup 5A) insecticide.

Any insect population may contain individuals naturally resistant to **GF-120™ NF** and other spinosyns. The resistant individuals will eventually dominate the insect population if these insecticides are used repeatedly over long periods or to consecutive generations. **GF-120™ NF** or other spinosyn insecticides may not control these resistant insects. Local experts should be consulted for resistance strategies and specific recommendations. It is recognised that resistance of insects and mites to insecticides and acaricides can also result from enhanced metabolism, reduced penetration or behavioural changes that are not linked to any site of action classification but are specific for individual chemicals or chemical groupings. Despite this, alternation of the compounds from different chemical classes remains a viable anti-resistance management technique.

To delay insecticide resistance

- Avoid the exclusive repeated use of insecticides from the same chemical subgroup.
- Do not use less than recommended label rates of any insecticides.
- Include proven cultural and biological control practices within IRM Programme.

## MODE OF ACTION

Systemic insecticide active by both contact and ingestion, translaminar mobility. Causes paralysis..

### Integrated Pest Management (IPM) Programme:

**GF-120™ NF** has no significantly harmful effect on parasitic or predatory insects and mites such as ladybirds, lacewings, killer bugs, predatory mites, etc and can therefore be recommended for use in IPM programmes in various crops.

## DIRECTIONS FOR USE:

**Use only as indicated**

**GF-120™ NF** is a bait concentrate, which should first be diluted with water before being applied with suitable calibrated equipment which is able to apply scattered droplets, with a desired diameter of 4 mm in size at 5 - 30 litres of bait mixture per hectare. **See "General Instructions"**.

## **GENERAL INSTRUCTIONS:**

### **Mixing instructions for GF-120™ NF:**

**GF-120™ NF** is specifically formulated to have a high viscosity. This high viscosity of **GF-120™ NF** extends the lifetime of the bait droplets after application and thereby ensures longer activity against fruit flies. All the components in **GF-120™ NF** are soluble in water and when mixed, it will remain in solution. **As a result of the high density of GF-120™ NF compared to water, the mixing must enjoy special attention.**

Fill the spray tank with water to about half of the total spray volume required. Start agitation and slowly add the required amount of **GF-120™ NF** to the spray tank while filling the spray tank to the required spray volume. Maintain agitation for a further 5 - 10 minutes to ensure that the **GF-120™ NF** is in a homogeneous mixture before application begins. It is important that for the first 20 - 30 minutes after mixing, agitation is continued during application to ensure uniformity of the spray mixture. If the agitation system of the sprayer is not vigorous enough to mix the **GF-120™ NF** properly with the water in the spray tank, rather pre-mix the measured volume of **GF-120™ NF** with at least the same volume of water before it is added to the water in the spray tank. **If this procedure is not followed, the GF-120™ NF will, because of its high density, sink to the bottom of the tank without mixing or dissolving.**

Do not allow water or spray mixture to back-siphon into the water source.

Once diluted, **GF-120™ NF** should be used within 12 hours.

Do not mix **GF-120™ NF** bait with any other product – not even wetters, stickers, or buffers.

### **Ground Application**

Preferably use purpose-built application equipment and techniques to ensure that the **GF-120™ NF** is applied in the most effective manner and at the correct dosage rates per hectare.

As fruit flies tend to seek shelter in protected parts of plants (on the underside of leaves and on the inside of the canopy), an effort must be made to apply the bait to these areas. This way the bait droplets are also protected against direct sunlight and rain. Application must be repeated every 7 - 14 days depending on weather conditions and fruit fly pressure.

Applying **GF-120™ NF** bait at lower volumes and more concentrated droplets is more cost effective.

**Management of rind stippling in susceptible citrus varieties:** Under certain circumstances, some citrus varieties such as mandarins (e.g., Nadorcott) may be susceptible to rind stippling. Incorrect application of **GF-120™ NF** (droplet size – see recommendations under “application to fruit trees”) and sooty mould development (associated with delayed drying of bait droplets), may contribute to the development of stippling. Where copper sprays are applied for disease management or as foliar nutrition, blemishes may occur under the **GF-120™ NF** droplets. Aerial baiting with **GF-120™ NF** is the preferred method of application for cultivars susceptible to rind stippling.

### **Application to Fruit trees:**

**GF-120™ NF** must be applied at a dosage rate of 1 - 1.2 litre in 4 – 29 litres of water (5 - 30 litres of bait mixture) per ha. The concentration of the bait must not be below 1:4 or exceed a ratio of 1:29 (**GF-120™ NF**: water). To reduce the possibility of unsightly droplet marks or development of sooty mould on fruit, a desired diameter of 4 mm should be maintained.

Attempt to apply the bait in scattered droplets to the inside of tree canopies, approximately 1 – 2.5 m above ground level, to at least one side of all trees in a row.

When bait is applied to rows on both sides of an interrow at the same time, the following interrow can be skipped. Bait is therefore only applied to one side of each row of trees. To prevent accumulation of bait droplets from consecutive applications on fruit, apply consecutive applications to alternative sides of trees by entering alternative interrows.

Apply the bait within the recommended droplet size and volume per planted hectare by using venturi, impulse pumps or conventional equipment that is equipped with suitable nozzles. Ensure the equipment is correctly calibrated to apply the recommended bait mixture per hectare and that the droplet spectrum complies with requirements as above. Avoid application equipment or application techniques that will result in a cover effect or fusion of bait droplets on fruit.

### **The following equipment and techniques are recommended for use in fruit tree crops:**

Use equipment that will deliver a thin, solid stream, as will be obtained from nozzle heads equipped with “Spraying Systems” D-1 to D-3 orifice plates without whirl plates used at 1.5 – 5 BAR. Use D-1 at 1.5 – 3.0 BAR, D-2 at 1.5 – 4.0 BAR and D-3 at 2.0 – 5.0 BAR. Point the stream(s) upwards into the fruit tree canopies. When the thin stream(s) contact any obstruction (fruit, leaves or branches) it will break up into coarse droplets scattering inside the tree canopies. This method also has the benefit of minimal bait residues accumulating on the outside of tree canopies or fruit, or consecutive bait applications accumulating on the same fruit. It is important that the stream should not be too coarse (as will be obtained when a plate with too big an orifice is used) – the coarser the stream, the higher the application pressure should be, to obtain the desired effect. The number of nozzles or combination of orifice plates used will depend on the calibration requirements for a specific crop, equipment, ground speed, etc.

**Note:** When recommended rates and droplet size of GF-120™ NF bait are exceeded or application techniques resulted in fusion of applied droplets of consecutive applications accumulate on the same area, sooty mould may develop on the accumulated bait.

### **Application to Table grapes and other similarly trellised crops:**

Apply **GF-120™ NF** at a dosage rate of 1 – 1.2 litres per ha in 4 – 29 litres water per ha (5 - 30 litres bait mixture) to the underside of the trellis roof by using the same droplet spectrum and equipment as described for fruit trees. Avoid droplets of the **GF-120™ NF** bait on berries/fruit by directing the application to the under side of the trellis roof, above the bunch/fruit line for slanting trellises and in between the bunch line for overhead trellises. Where bait is applied to rows both sides of the interrow at the same time (as for slanting trellises) the following 2 – 3 interrows can be skipped. Do not skip more than 2 interrows for overhead trellises where only one side of the interrow is treated. The untreated zone between applications swaths should never exceed 10 metres.

### **General:**

Bait applications against fruit flies should be carried out throughout the year with shorter intervals during the summer months or when monitoring traps indicate an increasing population or when fruit begins to ripen. In summer months, repeat application every 7 - 14 days. Use longer intervals only if fruit fly counts remain very low for an extended period (less than 2 flies per trap over 3 - 4 weeks). During the winter months when populations are normally at their lowest the intervals can be increased to 21 - 28 days. Continue applications for citrus at 7 - 14-day intervals, for as long as there is unharvested fruit on the trees. Apply fruit fly bait during the winter, preferably on warm, sunny days. Where applicable apply bait in home gardens, farmyards, and homesteads to limit re-infestation from these areas.

### **Important Note:**

The effective control of fruit fly numbers by baiting single orchards, vineyards or field crops cannot be guaranteed if fruit fly control is not applied to surrounding orchards, vineyards, or field crops. To prevent build up of fruit fly numbers outside unharvested orchards, all orchards, or vineyards, including post-harvest orchards, should be kept under a fruit fly control programme until the last fruit/vegetable or grapes have been harvested.

Sanitation is also critical to good fruit fly control. Clean picking and removal of fallen or unharvested over-ripe fruit or vegetables is of utmost importance.

**The effect of rain:** Although **GF-120™ NF** is more resistant to wash-off from dew or light rain than conventional baits, the efficacy of **GF-120™ NF** will be impaired by persistent cycles or heavy dew, rain, or overhead irrigation, and will require a repeat application.

**Mixed bait must be used within 12 hours.**

### **Equipment cleaning:**

**Mixing and application equipment must be thoroughly cleaned after use.**

Microbial growth can develop on remaining residues in the equipment providing a contamination source for the next batch and solid material which can clog the nozzels.

A triple rinse with warm water is sufficient. If material had been left in the equipment for 3 or more days, a first rinse with a 0.1% chlorine or bleach solution will remove any bacterial contamination.

### **AERIAL APPLICATION:**

Aerial application may only be done by a registered aerial application operator using a registered and certified calibrated aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Remedies). It is important to 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:

#### **Equipment:**

- Use suitable atomising equipment (e.g., hydraulic nozzles) that will produce the desired droplet size to cover the target area and that will ensure the minimum loss of product through drift.
- The operator must use a nozzle set-up that will produce a 1–6 mm or 1000–6000 micron droplet spectrum with the lowest possible relative span.
- All nozzles and atomisers should be positioned within the inner 75 % of the wingspan to prevent droplets from entering the wingtip vortices.

#### **Guidelines for nozzles to meet the criteria for aerial application of GF-120™ NF fruit fly bait:**

- ❖ Solid stream spray nozzles orientated to spray in the direction of airflow (180° to the rear), are the most appropriate nozzle types to achieve larger droplets for bait applications with **GF-120™ NF**. **(Nozzles with flat fan or cone spray patterns should not be considered).**

- ❖ For example, the following nozzle types can be considered:
  - a. The most efficient nozzles tested to be used with fixed wing aircraft and helicopters are 15 – 25 cm open stainless steel tubes (or hydraulic tubing). These nozzles can be custom made by using stainless-steel stock or hydraulic tubing with appropriate orifice of 4 – 8 mm depending on the craft and operating air speed. The tubes are pressed into modified standard “Spray System” brass bases machined (drilled and reamed) to accommodate the press fit. For more sound fitting the base and stainless-steel tube can be braced at the base. The nozzles are then attached to the standard hydraulic spray valve bodies with the large standard brass nuts.
  - b. Nozzles equipped with “Spraying Systems” D-type hollow cone tips without whirl plates and orifice diameter of 3-8 mm. To fit the orifice tips without whirl plates a 2-3 mm thick washer or O-ring should be used as spacer. These nozzle setup works well with gyrocopters when pointing 90° downwards.
  - c. Although “Stream Jet” nozzles, for the application of flowable fertilizers e.g., the SJ3-15 to SJ3-20 or “solid stream” spray nozzles TP0020-55 to TP0030-55 can be considered. However preliminary tests on bigger and faster fixed wing aircraft could not meet the criteria for droplet spectrum or droplet size as required for application criteria below. More evaluation tests still to be done.
  - d. Rotary atomizers used on smaller aircraft, should be adjusted to a slower rotation to produce bigger droplets to meet the criteria below.
- ❖ The number of spray nozzles may differ from 2 – 4 per wing (4 – 8 per spray boom), depending on the required application volume, type and size of aircraft and operating airspeed. All nozzles should be mounted within less than 75% of wingspan for fixed wing aircraft and 90% of rotor span for helicopters.
- ❖ To provide a more direct flow to the nozzles, the filter between pump and spray boom can be removed providing only clean or pre-filtered mixing water is used.
- ❖ Contact the Registration holder for more information about suitable spray nozzles for aerial application of **GF-120™ NF**.

**Application criteria:** *(The criteria below were developed in cooperation with **Fruit Fly Africa** for aerial application of **GF-120™ NF** in area wide fruit fly control operations)*

- A low volume of 2 – 4 L spray mixture / ha is recommended.
- A droplet spectrum of 1000 - 6000 $\mu$  (1 – 6mm) is recommended. Ensure that the droplets smaller than 1000 $\mu$  is restricted to a minimum. Fruit fly bait droplets act as mini bait stations. Bait droplets smaller than 1000 $\mu$  cannot be considered as mini bait stations. It is recommended that 80% of the applied volume should be within the spectrum of 2000 - 5000 $\mu$ .
- Droplet density within recovery swath should be 100 – 500 / m<sup>2</sup> droplets within recommended droplet spectrum.
- The recommended operating height for fixed wing and helicopters mounted with hydraulic nozzles is 25 – 35 m above the target area and for small aircraft with rotary atomizers, 10 – 15m above target area. The higher operating height is more appropriate under wind still conditions while the lower height is recommended for applications under windy conditions.
- Do not apply when the aircraft is in a climb, at the top of a turn or during a dive or when banking.



- Seeing that the swath width for bait application is normally wider than for normal aerial applications as for crop spraying, the effective swath width for bait application should be determined for each aircraft and atomizing equipment to be used. Normally the swath width for aerial fruit fly bait application can be calculated as the average width of the effective droplet recovery swath plus 20m (e.g., 18m effective droplet recovery + 20m = 38m operating swath width)
- Testing and evaluations for appropriate equipment, spray patterns, droplet size and droplet spectrum should only be done by a competent/qualified person.

**Meteorological restrictions:**

- Do not apply when difference between wet and dry bulb for whirling hygrometer is more than 8°C or moisture reading for a digital meter is more than 40%
- Do not apply when temperature is more than 30°C.
- Do not apply when windspeed exceeds 15 km/h.
- Do not spray under temperatures conducive for inversion conditions or spray above the inversion layer.

**General:**

- Ensure that areas where bait should be applied are clearly marked and the operator is well informed.
- Get assurance from the operator that above requirements will be met, and that the GPS appliance is set for the correct swath width for **GF-120™ NF** bait application.

CROP/PEST	DOSAGE/HA	REMARKS
<p><b>ALL FRUIT AND BERRY CROPS</b>  Mediterranean Fruitfly (<i>Ceratitis capitata</i>)  Natal Fruitfly (<i>Ceratitis rosa</i>)  Marula Fruitfly (<i>Ceratitis cosyra</i>)  Olive fly (<i>Bactrocera oleae</i>)  Asian fruitfly (<i>Bactrocera invadens</i>)</p>	<p>1.0 - 1.2 l  <b>GF-120™ NF</b> in  4 - 29 l water  (5 – 30 l bait mixture)</p>	<p>Apply <b>GF-120™ NF</b> bait as coarse droplets with a desired diameter of 4 mm. Apply a total volume of 5 to 30 litres bait mixture per planted ha. Use only calibrated equipment adapted to meet the application criteria. <b>See “Application to fruit trees” above.</b></p> <p>Apply as a band of scattered droplets approximately 1 - 2.5 m above ground level to one side of each row of trees. Alternate sides with each consecutive application.  <b>Also see “GENERAL INSTRUCTIONS” above.</b></p> <p>Repeat bait applications at least every 7 – 14 days depending on population pressure. Use shorter intervals on ripening fruit.</p> <p>Treat all susceptible orchards, vineyards, and border plants.  Keep all surrounding post-harvest orchards and vineyards under a fruit fly control programme until at least all susceptible crops are harvested.</p>

CROP/PEST	DOSAGE/HA	REMARKS
<p><b>TABLE GRAPES, WINE GRAPES, AND OTHER TRELLISED FRUIT CROPS</b>  Mediterranean Fruitfly (<i>Ceratitis capitata</i>)  Natal Fruitfly (<i>Ceratitis rosa</i>)  Marula Fruitfly (<i>Ceratitis cosyra</i>)  Asian Fruitfly (<i>Bactrocera invadens</i>)</p>	<p>1.0 - 1.2 l  <b>GF-120™ NF</b> in  4 – 29 litre water  (5 – 30 l bait mixture per ha)</p>	<p>Apply <b>GF-120™ NF</b> in a total volume of 5 to 30 litres bait mixture per planted ha as coarse droplets with a desired diameter of 4 mm. Use only calibrated equipment adapted to comply with application requirements. (See “<b>General instructions</b>” and “<b>Applications to table grapes</b>” above).</p> <p><b>TABLE GRAPES AND OTHER TRELLISED FRUIT CROPS:</b> Do not apply bait directly onto the Grape bunches or fruit. Treat at least every second to third row applying the bait to the under side of the trellis roof. Avoid splashes (droplets) on the berries/fruit, by directing application above the bunch/fruit line to the leaf canopy for slanting trellises and between bunch/fruit lines for overhead trellises. The solid stream method described under “<b>Applications to fruit trees</b>” can be considered providing nozzles with small orifice diameters are used at relative high pressure. Alternate rows with each consecutive application.</p> <p><b>WINE GRAPES:</b> Treat both sides of every second or third interrow depending on fruit fly pressure. Use the solid stream method described under “<b>Applications to fruit trees</b>”. The solid stream should be applied directly into the leaf canopy at relatively high pressure to ensure breaking up of the solid stream into smaller droplets on the inside of leaf canopy, when leaves or other obstructions are struck. Alternate rows with each consecutive application.</p> <p>Repeat applications at least every 7 – 14 days depending on population pressure. Use the shorter interval on ripening grapes.</p> <p>Treat all susceptible orchards, vineyards, and border plants.</p> <p>Keep all surrounding post-harvest orchards and vineyards under a fruit fly baiting programme until at least all susceptible crops are harvested.</p>

CROP/PEST	DOSAGE/HA	REMARKS
<p><b>ALL CUCURBIT CROPS</b> Pumpkin flies (<i>Dacus</i> spp.) Asian Fruitfly (<i>Bactrocera invadens</i>)</p>	<p>1.0 - 1.2 l <b>GF-120™ NF</b> in 4 - 29 litre water (5 – 30 l bait mixture per ha)</p>	<p>Apply <b>GF-120™ NF</b> as coarse droplets with a desired diameter of 4 mm on bearing plants. Apply a total of 5 to 30 litres bait mixture per planted ha. Use only calibrated equipment adapted to meet the application criteria.</p> <p>Traverse land in straight lines, apply as spot spray of 40 - 120 ml at 4 m intervals. Lines should be 10 m apart. This will bring about the application of 250 spot treatments per hectare. <b>See “GENERAL INSTRUCTIONS” above.</b></p> <p>Also treat susceptible fields, orchards, and vineyards as well as border plants in vicinity of Cucurbit field.</p>
<p><b>ALL VEGETABLE CROPS INCLUDING TOMATOES</b> Mediterranean fruit fly (<i>Ceratitis capitata</i>) Natal fruit fly (<i>Ceratitis rosa</i>) Marula fruit fly (<i>Ceratitis cosyra</i>) Asian Fruitfly (<i>Bactrocera invadens</i>)</p>	<p>1 – 1.2 l <b>GF-120™ NF</b> in 4 - 29 litres water (5 – 30 l bait mixture per ha)</p>	<p>Apply <b>GF-120™ NF</b> as coarse droplets with a desired diameter of 4 mm on bearing plants. Apply a total of 5 – 30 litres bait mixture per planted hectare. Use only calibrated equipment adapted to meet the application criteria.</p> <p>Repeat applications at least every 7 – 14 days depending on population pressure. Use shorter intervals on ripening fruit.</p> <p>Use equipment that will deliver a thin, solid stream.</p>
<p><b>TOMATOES AND PEPPERS</b> for 0-day pre-harvest interval.</p>		<p><u>For trellised tomatoes:</u> Treat one side of each row with bait mixture, apply in a thin band.</p> <p><u>All row vegetable crops including factory tomatoes (not trellised):</u> Apply <b>GF-120™ NF</b> on bearing plants. Traverse land in straight lines, apply as spot spray of 40 – 120 ml at 4 m intervals. Lines should be 10 m apart. This will bring about the application of 250 spot treatments per hectare.</p> <p><b>See “General instructions” above. Also treat susceptible fields that are in close proximity as well as harvested fields.</b></p>

CROP/PEST	DOSAGE/HA	REMARKS
<p><b>AERIAL APPLICATION: ALL CROPS MENTIONED ABOVE</b></p> <p><b>STONE, POME AND GRAPES</b> for 0-day pre-harvest interval.</p>	<p>1 l <b>GF-120™ NF</b> + 1 – 3 l water (2 – 4 l bait mixture/ha)</p>	<p>The <b>GF-120™ NF</b> must be thoroughly mixed with water before loading into hopper of the aircraft.</p> <p>The periphery of orchards and vineyards (approx. 30 m), as well as any adjacent source of fruit fly infestation, should also be sprayed where possible.</p> <p>The timing of the first application and the intervals between sprays must be determined by weekly fruit fly trap counts.</p> <p><b>NOTE:</b> *Rain within a day or two after application may reduce the residual effect of the bait. *The larger the area treated at the same time the better the control achieved will be. *See “<b>Aerial application</b>” under “<b>General instructions</b>”.</p>

**Local emergency No: +27(0)82-895-0621 (SA only)**  
**24 Hour emergency Tel No: +32-3-575-5555**  
**Information hotline Tel No: +27(0)12 683-5700**

## WAARSKUWINGS

### RISIKOVERKLARING:

Skadelik vir akwatiese flora en fauna, met langdurige effek.

**Onthoudingsperiode** - Minimum tyd wat tussen die laaste toediening en oes moet verstryk:

Alle gewasse..... 1 dag  
Kernvrugte, steenvrugte, druwe, tamaties en soetrissies ..... 0 dae

- Hanteer die produk versigtig.
- Mag moontlike ligte oogirritasie veroorsaak.
- Hierdie produk is matig giftig vir vis en giftig vir ander waterorganismes. Moenie oor oop waterbronne toedien nie
- Voordelige Insekte:  
"Relatief skadeloos vir bye"
  - ❖ **GF-120™ NF** is relatief veilig vir kontak met bye.
  - ❖ **GF-120™ NF** stel 'n ammoniak-agtige verbinding vry wat vrugtevlieë aanlok maar afwerend is vir bye. Dit is dus hoogs onwaarskynlik dat bye aangelok en deur die lokaas gedood sal word.
  - ❖ Moet egter nie direk op kolonies of aktiewe bye toedien nie.

**GF-120™ NF** is relatief veilig (skadeloos) vir voordelige insekte soos Parasiete, Predatormyte, Coccinellidae en Neuroptera.

- Berg in 'n koel droë plek en verwyderd vanaf voedsel en veevoer.
- Hou buite bereik van kinders, oningeligte persone en diere.

**Lugtoediening:** Verwittig alle inwoners in die onmiddellike omgewing van die gebied wat bespuit gaan word en reik die nodige waaskuwings uit. Moet nie oor aangrensende gebiede, of oor water spuit, of die spuitnewel daarheen laat wegdryf nie.

## VRYWARING

Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie, aangesien die werking en effek daarvan beïnvloed kan word deur faktore soos abnormale klimaats- en bergingstoestande; kwaliteit van verdunningswater; verenigbaarheid met ander stowwe wat nie op die etiket aangedui is nie en die voorkoms van weerstand van die plaag teen die betrokke middel sowel as die metode, tyd en akkuraatheid van toediening. Verder aanvaar die registrasiehouer nie verantwoordelikheid vir skade aan gewasse, plantegroei, die omgewing of vir nadelige effek op mens of dier of vir 'n gebrek aan prestasie van die betrokke middel as gevolg van die versuim van die gebruiker om etiketaanwysings na te kom of as gevolg van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

## VOORSORGMAATREËLS

### VOORKOMENDE VERKLARING:

Raak ontslae van houer en/of inhoud in ooreenstemming met toepaslike regulasies.

#### Voorkom bevriesing

Berg altyd in die oorspronklike ge-etiketeerde houer.

Vermyn die inaseming van spuitnewel.

Was met water en seep in geval van toevallige kontak met vel.

Dra handskoene en 'n gesigskerf wanneer konsentraat hanteer word.

Vermyn vel- en oogkontaminasie. In geval van toevallige oogkontak, spoel oë met lopende water vir ongeveer 15 minute. Verkry mediese hulp indien oogirritasie nie sou opklaar nie.

Moenie eet, drink of rook terwyl gemeng of toegedien word nie.

Tydens vermenging of toediening moet die hande en gesig altyd gewas word voordat geëet, gedrink, gerook of die toilet besoek word.

Vermyn wegdrywing van spuitnewel na aangrensende gewasse, weidings, riviere of damme.

Maak toerusting skoon voordat vir ander middels gebruik word en gooi spoelwater weg waar dit nie gewasse, weiding, riviere, damme en waterbronne sal besoedel nie.

Ledig leë houers deur dit vir ongeveer 30 sekondes omgekeer te hou oor spuittenk totdat die uitvloeï van die inhoud tot 'n stadige drup verlangsam. Spoel die leë houer daarna drie maal uit met water gelykstaande aan ongeveer 10 % van die volume van die houer en voeg die spoelwater by die inhoud van die spuittenk. Vernietig die leë houer deur gate in te kap, plat te slaan en te begrawe. Moet nooit leë houers vir enige ander doel aanwend nie.

Voorkom die besoedeling van voedsel, voer, drinkwater en eetgerei tydens opberging, hantering en wegdoening.

## RELEVANTE STOWWE

KOMPONENT	CAS-NO	Konsentraat (% w/w)
Spinosad (ISO) (reaksiemassa van spinosien A en spinosien D n verhoudings tussen 95:5 tot 50:50)	168316-95-8	0,0226

## EERSTEHULP

### Inaseming

Verskuif persoon na vars lug. Indien die persoon nie asemhaal nie, ontbied 'n nooddiens of 'n ambulans, pas kunsmatige asemhaling toe; indien mond-tot-mond, gebruik redderbeskerming (sakmasker, ens.). Bel 'n gifbeheersentrum of dokter vir verdere behandelingsadvies.

### Velkontak

Verwyder besmette klere. Spoel vel onmiddellik met genoeg water vir omtrent 15 – 20 minute.

Bel 'n gifbeheersentrum of dokter vir verdere behandelingsadvies. Behoorlike nood stort geriewe behoort by werksplek beskikbaar te wees.

### Oogkontak

Hou oog oop en spoel stadig en sagkens met water vir 15 – 20 minute. Verwyder kontaklense, indien gedra word, na die eerste 5 minute. Hou aan om die oog te spoel. Ontbied 'n

gifbeheersentrum or geneesheer vir behandelingsadvies. Behoorlike nood-oogwasfasiliteit behoort by die werksarea beskikbaar te wees.

### Inname

Geen mediese behandeling is nodig.

## **Simpotome van menslike vergiftiging**

Nie bekend nie.

### **Nota aan geneesheer**

Geen spesifieke teenmiddel. Behandeling van blootstelling moet gerig wees op die beheer van simptome en die kliniese toestand van die pasiënt. Hou die Veiligheidsdatablad en indien beskikbaar, die produkhouer of etiket by jou wanneer jy 'n gifbeheersentrum of dokter ontbied of vir behandeling gaan.

## **Weerstandbestuur van insekmiddels**

Insekdoders word geklassifiseer op grond van hul werkingswyse. ("Mode of Action").

**GF-120™ NF** is geklassifiseer as 'n spinosin (subgroep 5) insekdoder.

Enige insekpopulasie mag individue met 'n natuurlike weerstand teen **GF-120™ NF** of ander insekdoders binne dieselfde chemiese groep insluit. Indien **GF-120™ NF**, of insekdoders van dieselfde chemiese groep, herhaaldelik oor lang periodes, of teen opeenvolgende generasies van insekte aangewend word, sal die weerstandbiedende individue uiteindelik oorheersend in die populasie voorkom. Hierdie weerstandbiedende insekte sal nie deur **GF-120™ NF**, of ander insekdoders binne dieselfde chemiese groep, beheer word nie. Lokale kundiges moet oor 'n weerstandstrategie of oor aanbevelings in die verband geraadpleeg word. Dit is bekend dat weerstand van insekte en myte teen insek- en mytdoders ook kan ontstaan as gevolg van verhoogde metabolisme, verlaagde penetrasie of veranderde gedragspatroon. Hierdie tipe weerstand hou nie verband met enige werkingswyse-klassifikasie nie, maar sal spesifiek wees tot 'n bepaalde middel of chemiese groepering. Ten spyte van bogenoemde, bly die afwisseling van middels tussen verskillende chemiese groepe steeds 'n lewensvatbare anti-weerstandstegniek.

Om insekweerstand te vertraag

- Vermy die eksklusiewe gebruik van insekdoders van dieselfde subgroep.
- Moenie insekdoders teen laer dosisse, as wat op die etiket voorgeskryf word, aanwend nie.
- Sluit ook ander bewese landboukundige of biologiese beheerpraktyke by Weerstandbestuursprogramme in.

## **Geïntegreerde Plaaqbestuursprogram (GPB)**

**GF-120™ NF** het nie 'n beduidend nadelige invloed op parasitiese en predatoriese insekte en myte soos skilpadkewers, goudogies, roofwantse, predatoriese myte, ens. nie en kan daarom in GPB programme van verskeie gewasse aanbeveel en gebruik word.

**GEBRUIKSAANWYSINGS:**                    **Gebruik slegs soos aangedui.**

**GF-120™ NF** is 'n konsentraat lokmiddel wat eers met water verdun moet word voordat dit met geskikte en gekalibreerde toerusting in verspreide druppels met 'n gewenste druppelgrootte van 4 mm deursnee teen 5 - 30 liter lokaasmengsel per ha aangewend word. **Sien "Algemene Instruksies"**.

## **ALGEMENE INSTRUKSIES:**

### **Menginstruksies vir GF-120™ NF:**

**GF-120™ NF** is spesifiek geformuleer om 'n hoë viskositeit te hê. Die hoë viskositeit van **GF-120™ NF** verleng die leeftyd van die lokaasdruppels na toediening en verseker sodoende langer aktiwiteit teen vrugtevlieë. Al die bestanddele in **GF-120™ NF** is egter oplosbaar in water en wanneer dit eenmaal vermeng is sal dit in oplossing bly. **As gevolg van die hoë digtheid van GF-120™ NF in verhouding met die van water, moet die vermenging met water spesiale aandag geniet.**

Vul die spuittenk tot die helfte van die totale volume water benodig. Voeg die verlangde hoeveelheid **GF-120™ NF** stadig in die spuittenk by terwyl die water aanhoudend geroer word en die tenk tot die verlangde volume gevul word. Handhaaf roering vir 'n verdere 5 - 10 minute om te verseker dat die **GF-120™ NF** in 'n homogene oplossing is voordat toediening 'n aanvang neem. Dit is noodsaaklik dat die oplossing vir ongeveer 20 - 30 minute na aanvanklike vermenging steeds geroer word. Indien die spuittenk nie oor 'n sterk roermeganisme beskik nie, is dit raadsaam om die afgemete volume **GF-120™ NF** eers vooraf met dieselfde volume water te vermeng voordat dit by die water in die spuittenk gevoeg word. **(Indien hierdie prosedure nie gevolg word nie sal die GF-120™ NF as gevolg van die hoër digtheid as die water, na die bodem van die tenk afsak sonder om met die water te vermeng of daarin op te los).** Vermeng die terugvloei van water of spuitmengsel na die waterbron.

Na vermenging moet **GF-120™ NF** binne 12 uur gebruik word.

**GF-120™ NF** lokmiddel moet met geen ander middel vermeng word nie - ook nie met benattings-, kleef- of buffermiddels nie.

### **Grondtoediening**

Om optimum effektiwiteit van **GF-120™ NF** te verseker moet verkieslik van doelgerigte toedieningsapparate en tegnieke gebruik gemaak word om te verseker dat die regte dosis van **GF-120™ NF** per ha, op die mees doeltreffende wyse toegedien word.

Aangesien vrugtevlieë geneig is om meer beskutte dele van plante op te soek, moet gepoog word om die lokaas aan die onderkant van blare of op die binneste blaredek toe te dien. Sodoende, word die lokaasdruppels ook teen direkte sonlig en reën beskerm. Afhangend van weerstoestande en vrugtevliegdruk, moet toedienings elke 7 - 14 dae herhaal word.

Die toediening van **GF-120™ NF** in laer volumes en meer gekonsentreerde druppels is meer koste-effektief.

**Bestuur van stippelletsels op die skil by gevoelige sitruskultivars:** Sekere sitruskultivars soos mandarynsoorte (bv. Nadorcott) mag onder sekere omstandighede vatbaar wees vir die vorming van stippelletsels. Foutiewe toediening (sien aanbevelings onder "Toediening op vrugtebome"), veral foutiewe druppelgrootte, en die ontwikkeling van roetskimmel geassosieër met stadige droogword van **GF-120™ NF** druppels, mag bydra tot die ontwikkeling van stippelskade. Waar koperprodukte vir siektebestuur of as blaarvoeding toegedien word, kan letsels onder die **GF-120™ NF** druppels voorkom. Lugtoediening is die voorkeur toedieningsmetode vir **GF-120™ NF** by kultivars wat vatbaar is vir stippelletsels.

### **Toediening op vrugtebome:**

**GF-120™ NF** moet teen 1.0 – 1.2 liter in 4 – 29 liter water (5 – 30 ℓ lokaasmengsel) per ha toegedien word. Die konsentrasie van die lokaas moet nie hoër as 1:4 of laer as 1:29

(**GF-120™ NF**:water) wees nie. Om die moontlikheid van onooglike druppelvlekke of die ontwikkeling van roetskimmel op vrugte te verlaag, moet 'n gewenste druppelgrootte van 4 mm deursnee gehandhaaf word.



Daar moet gepoog word om die lokaas in verspreide druppels, aan die binnekant van die blaredek, ongeveer 1 – 2.5 m bo die grondvloer, aan minstens een kant van al die bome in 'n ry toe te dien. Waar toediening aan twee rye weerskante van 'n werksry gedoen word, kan die daaropvolgende werksry oorgeslaan word om lokaas sodoende net aan een kant van elke ry toe te dien. Om akkumulاسie van lokaasdruppels met opeenvolgende toedienings op vrugte te voorkom moet die lokaas vir opeenvolgende toedienings aan alternatiewe kante van die rye toegedien word deur in alternatiewe rye te beweeg.

Dien die lokaas binne voorgeskrewe druppelgrootte en volume per aangeplante hektaar toe deur van venturie, impulserende apparaat of konvensionele toerusting wat met geskikte spuitkoppe toegerus is, gebruik te maak. Maak seker dat die toedieningsapparaat korrek gekalibreer is om die verlangde hoeveelheid lokaasmengsel per geplante hektaar toe te dien en dat die druppelspektrum aan bogenoemde vereistes voldoen.

Vermyn enige toedieningsapparaat of toedieningsmetode wat 'n dekbespuitingseffek of aaneenvloeiing van lokaasdruppels op vrugte tot gevolg sal hê.

### **Die volgende toerusting en tegniek word vir gebruik in vrugteboomgewasse aanbeveel:**

Gebruik apparaat wat die lokaas in 'n soliede dun straal sal toedien soos wat bv. van spuitkoppe toegerus met "Spraying Systems" D-1 tot D-3 spuitplaatjies sonder warrelplaatjies teen 1.5 – 5 BAR, druk verkry word. Gebruik D-1 teen 1.5 – 3 BAR, D-2 teen 1.5 – 4.0 BAR en D-3 teen 2.0 – 5.0 BAR druk. Rig die straaltjie(s) skuins, opwaarts in die blaredek van die vrugteboom. Wanneer die straaltjie(s) enige obstruksie soos vrugte, blare of takkies tref, sal dit in growwe druppels van gewenste grootte opbreek en in die binnekant van die boom versprei. Dit het ook die voordeel dat minimale lokaasreste aan die buitekant van die blaredek af op vrugte versamel of dat opeenvolgende lokaastoedienings op dieselfde vrugte akkumuleer. Dit is belangrik dat die straal nie te grof is nie (soos verkry wanneer 'n spuitplaatjie met 'n te groot opening gebruik word) – hoe dikker die straal hoe hoër moet die toedieningsdruk wees om die gewenste effek te verkry. Die aantal spuitkoppe of kombinasie van spuitplaatjies wat gebruik word sal afhang van die kalibrاسie vereistes vir 'n spesifieke gewas, toerusting, grondspoed, ens.

Nota: Indien aanbevole dosis en druppelgrootte vir **GF-120™ NF** lokaas oorskry word of druppels ineenvloei of lokaas van opeenvolgende toedienings op dieselfde plekke akkumuleer, mag roetskimmel ("sooty mould") op die geakkumuleerde lokaas ontwikkel.

### **Toediening op Tafeldruive en ander soortgelyke opgeleide gewasse:**

Dien **GF-120™ NF** teen 1 – 1.2 liter in 4 – 29 liter water (5 – 30 l lokaasmengsel) per ha aan die onderkant van die priëelkappe toe deur van dieselfde druppelspektrum en toerusting, soos vir vrugteboom beskryf is, gebruik te maak. Voorkom onnodige spatsels (druppels) op die korrels of vrugte deur die toediening by skuinskappe, aan die bokant van die tros-/vrugtelyne, en by dakpriële, tussen die tros-/vrugtelyne, te rig. Waar toediening aan beide rye van 'n werksry (soos by skuinspriële) toegedien word, kan die daaropvolgende 2 – 3 werksrye oorgeslaan word, maar in die geval van dakpriële waar slegs 'n enkelbaan in die werksry behandel word, moet nie meer as 2 werksrye oorgeslaan word nie. Die onbehandelde gedeelte tussen toedieningsbane moet nooit wyer as 10 meter wees nie.

### **Algemeen:**

Lokaasbehandelings teen vrugtevlieë moet deur die hele jaar volgehou word, met die korter intervalle gedurende die somermaande of wanneer moniteringsvalle aandui dat die populasie getalle aan die toeneem is, of vrugte begin ryp word. Herhaal toedienings gedurende somermaande, elke 7 - 14 dae. Gebruik slegs die langer intervalle indien vrugtevlieëgtellings vir 'n geruime tydperk laag bly (minder as 2 vlieë per val oor 3 - 4 weke). Gedurende die wintermaande, wanneer vrugtevlieëpopulasies normaalweg in lae getalle aanwesig is, kan die intervalle na 21 tot 28 dae, verleng word. Handhaaf 7 - 14 dae intervalle vir sitrus wat nog nie geoes is nie, of waar daar nog vrugte aan die bome hang.

GF-120™NF/2023-05-08

Dien vrugtevlieglokaas gedurende die wintermaande verkieslik op warm, sonnige dae toe. Beheer ook vrugtevlieë in huistuine, om plaasopstalle en om werkershuise om her-infestasië vanaf hierdie bronne te voorkom.

### **Belangrike Nota:**

Die suksesvolle beheer van vrugtevlieggetalle kan nie gewaarborg word wanneer enkel boorde, wingerde of rygewasse met lokaas behandel word sonder dat vrugtevliegbeheer nie ook in omliggende boorde, wingerde en lande toegepas word nie. Om die opbou van vrugtevlieggetalle buite ongeoste boorde of wingerde te voorkom, moet alle boorde of wingerde, insluitend klaar geoeste boorde of wingerde, onder 'n vrugtevlieg beheerprogram gehou word totdat die laaste vrugte, groente of druive geoes is.

Sanitasie is krities vir goeie vrugtevliegbeheer. Boorde, gewasse en wingerde moet tydens die oesproses skoon gepluk word en alle oorryp vrugte aan bome en op die grond en groente moet uit die boorde, wingerde en lande verwyder word.

**Die effek van reën:** Alhoewel GF-120™ NF lokaas minder onderhewig is aan afwassing deur dou of ligte reën as konvensionele lokaasmengsels, sal voortdurende swaar dou, reën of oorhoofse besproeiing die doeltreffendheid van GF-120™ NF benadeel en sal opvolgtoedienings vereis word.

**Aangemaakte lokaas moet binne 12 uur gebruik word.**

### **SKOONMAAK VAN TOERUSTING:**

**Meng- en toedieningstoerusting moet na gebruik deeglik skoon gemaak word.** Mikrobe-groei kan op lokaas-reste in die toerusting ontwikkel en daaropvolgende lote kontamineer, asook vaste materiaal tot gevolg hê wat spuitkoppe kan verstop. Drievoudige spoel met louwarm water is voldoende. Indien aangemaakte lokaas vir 3 of meer dae in die toerusting bly staan het, moet die toerusting die eerste maal met 0.1 % chloor of bleikmiddel gespoel word om enige bakteriese groei te verwyder.

### **LUGTOEDIENING:**

Lugtoediening mag slegs deur 'n geregistreerde lugbespuitingsoperateur met 'n geregistreerde en gesertifiseerde korrek gekalibreerde vliegtuig, volgens instruksies van SANS Kode 10118 ("Aerial Application of Agricultural Remedies") gedoen word. Dit is belangrik om te verseker dat die spuitmengsel eweredig oor die teikenarea versprei word en dat die verlies aan spuitmengsel tydens toediening tot die minimum beperk word. Die volgende kriteria moet nagekom word:

#### **Toerusting:**

- Gebruik geskikte atomiseringsapparaat (bv hidrouliese ofspuitkoppe) wat die vereiste druppelgrootte sal produseer om bedekking van die teiken area te verseker, maar wat terselfdertyd die minste verlies van produk deur wegdrywing tot gevolg sal hê.
- Die operateur moet 'n spuitstelsel gebruik wat 'n druppelspektrum van 1-6 mm of 1000- 6000 mikron met die kleinste moontlike relatiewe span sal produseer.
- Om die beweging van druppels in die vlerkvortex te beperk, moet alle spuitkoppe en atomiseerders binne die binneste 75 % van die vlerkspan geplaas word.

## Riglyne vir spuitkopkeuses om aan die vereistes vir lugtoediening van GF-120™ NF vrugtevlieglokaas te voldoen:

- ❖ Spuitkoppe met 'n soliede straal wat in die rigting van die lugvloei (180° na agter) gemonteer is, lewer tans die beste resultate om die verlangde spektrum van groter druppels vir lugtoediening van GF-120 vrugtevlieglokaas te verkry. **Spuitkoppe met plat waaier- of kegel spuitpatrone moet nie oorweeg word nie.**
- ❖ As voorbeeld kan die volgende spuitkopoptipes oorweeg word:
  - a. Die mees geskikte spuitkoppe wat tot hede vir lugtoediening van **GF-120™ NF** vrugtevlieglokaas vir gebruik by vastevlerk-vliegtuie en helikopters getoets is, is pasmaakspuitkoppe wat gemaak word deur 15 – 25 cm lange vlekvrystaal pypies (of hidroliese pype) met 4 – 6 mm binnemaat aan standaard “Spraying System” brons basisse te monteer. Dit kan gedoen word deur die basisse te masjineer of oop te boor waarin die staalpypies dan stewig geforseer word om lekvrystaal te pas. Vir beter ondersteuning kan die basis gesweis/soldeer word. Die spuitkoppe word dan met groot standaard bronsmoere aan die standaard hidroliese kleppe geheg.
  - b. Spuitpunte, toegerus met “Spraying System” D-tipe holkegel (“hollow cone”) spuitplaatjies met 3 – 8 mm opening, sonder die warrelplaatjies. Om die spuitplaatjies sonder die warrelplaatjies te monteer sal 'n 2 – 3 mm wasser of O-ring benodig word. Werk goed by gyrocopters wanneer 90° afwaarts gemonteer word.
  - c. Alhoewel die “Stream Jet” spuitpunte SJ3-15 tot SJ3-20 of “Solid Stream” spuitpunte TP0020-55 tot TP0030-55, wat vir die toediening van vloeibare kunsmis gebruik word, ook oorweeg kan word. Voorlopige toetse met groot en vinnige vastevlerk vliegtuie het egter getoon dat bogenoemde spuitkoppe nie aan onderstaande vereistes vir druppelgrootte en druppelspektrum voldoen nie. Verdere evaluasies is egter nodig.
  - d. Roterende spuitkoppe (“Rotary atomizers”), wat op kleiner vliegtuigies gemonteer is kan ook oorweeg word. Die spuitkoppe moet egter na 'n stadige rotering verstel word om groter druppels te produseer.
- ❖ Die aantal spuitkoppe wat links of regs van die romp gebruik word mag verskil van 2 – 4 per kant (4 – 8 per spuitbalk), afhangend van die verlangde toedieningsvolume, tipe, grootte en operasionele vliegspoed van die tuig. Die spuitkoppe moet aan die binneste 75% van die vlerkspan van vastevlerk vliegtuie en 90% van die span van rotorlemme van helikopters, gemonteer word.
- ❖ Om 'n meer direkte vloei na die spuitpunte te verseker kan die filter tussen die pomp en spuitbalk verwyder word, mits slegs vooraf-gefiltreerde water gebruik word.
- ❖ Kontak die registrasiehouer vir meer inligting oor die gebruik van mees geskikte tipe spuitkoppe vir lugtoediening van **GF-120™ NF**

### **Toedieningsvereistes:** (*Die toedieningsvereistes vir lugtoediening van GF-120™ NF vir vrugtevlieg beheer in area-wye operasies was in samewerking met Fruit Fly Africa ontwikkel*)

- 'n Lae volume van 2 – 4 l spuitmengsel / ha word aanbeveel.
- 'n Druppelspektrum van 1000 - 6000µ (1 – 6 mm) word aanbeveel. Verseker dat druppels kleiner as 1000µ tot 'n minimum beperk word. Vrugtevlieg lokaasdruppels dien as klein lokstasies. Lokaasdruppels kleiner as 1000µ kan nie as lokstasies ge-ag word nie. Dit word aanbeveel dat 80% van die toegediende volume binne die spektrum van 2000 - 5000µ druppelgrootte moet wees.
- Druppeldigtheid van 100 – 500/m<sup>2</sup> van aanbevole spektrum moet binne die druppelherwinningsbaan van die teikenarea gehandhaaf word.

- Die aanbevole operasionele vlieghoogte vir vastevlerk vliegtuie en helikopters toegerus met hidroliese spuitkoppe is 25 – 35 m bo die teikenarea. Vir kleiner vliegtuie wat met roterende spuitkoppe toegerus is word 'n vlieghoogte van 10 – 15 m bo die teikenarea aanbeveel. Die hoër operasionele hoogtes word aanbeveel vir toedings tydens windstil toestande en die laer hoogte vir toedienings tydens winderige toestande.
- Moet nie spuit wanneer die vliegtuig aan die bopunt van 'n draai is of tydens duik of terwyl dit uitklim of draai nie.
- Aangesien die spuitbaanwydte (swath width) vir lokaastoedienings wyer as die van gewasbespuiting is, moet die effektiewe wydte van die druppelherwinningbaan vir GF-120 vir elke tipe vliegtuig en tipe spuitkoppe wat gebruik gaan word bepaal word. Die operasionele spuitbaanwydte (swath width) word soos volg bereken: Die gemiddelde wydte van die effektiewe druppelherwinningsbaan plus 20m (bv. 18m druppelherwinningsbaan + 20m = 38m operasionele spuitbaan wydte)

#### **Meteorologiese beperkings:**

- Moenie toedien as die verskil tussen nat- en droëbollesing van 'n swaaihigrometer meer as 8° C is nie of as die lugvoglesing van 'n digitale meter minder as 40% is nie.
- Moenie toedien as die temperatuur 30° C oorskry nie
- Moenie toedien as die windspoed meer as 15 km/u is nie
- Moenie tydens turbulente en onstabiele weerstoestande of bo 'n inversielaag, toedien nie

#### **Algemeen:**

- Verseker dat areas waar lokaas toegedien moet word, duidelik gemerk is sodat die operateur presies weet watter area(s) behandel moet word.
- Verkry versekering van die operateur dat aan bogenoemde vereistes voldoen sal word en dat die GPS-toestel vir die korrekte baanwydte vir toediening van **GF-120 NF™** ingestel is.

GEWAS/PLAAG	DOSIS/HA	OPMERKINGS
<p><b>ALLE VRUGTE- EN BESSIE-GEWASSE</b>  Meditereense Vrugtevlieg (<i>Ceratitis capitata</i>),  Natale Vrugtevlieg (<i>Ceratitis rosa</i>), Maroela Vrugtevlieg (<i>Ceratitis cosyra</i>)  Olyfvlieg (<i>Bactrocera oleae</i>)  Asiatiese vrugtevlieg (<i>Bactrocera invadens</i>)</p>	<p>1.0 - 1.2 l  <b>GF-120™ NF</b> in  4 - 29 l water  (5 – 30 l  lokaasmengsel  per ha)</p>	<p>Dien <b>GF-120™ NF</b> lokaas as 'n growwe druppel toe (met 'n gewenste druppelgrootte van 4 mm deursnee). Dien 'n totale volume van 5 tot 30 liter aangemaakte lokaas per geplante ha toe. Gebruik alleenlik gekalibreerde toerusting, wat aangepas is om aan toedieningsvereistes te voldoen. Sien <b>“Toediening op Vrugtebome”</b> hierbo.</p> <p>Dien as 'n band van verspreide druppels, ongeveer 1 - 2.5 m bo die grondvloer, aan ten minste een kant van elke ry bome toe. Dien daaropvolgende toedienings op alternatiewe kante van rye toe <b>(sien ook "ALGEMENE INSTRUKSIES " hierbo)</b>.</p> <p>Herhaal lokaastoedienings minstens elke 7 – 14 dae afhangend van populasiedruk. Gebruik die korter interval op rypwordende vrugte.</p> <p>Behandel alle vatbare boorde, wingerde en aangrensende plante. Hou ook alle klaar geoeste boorde en wingerde onder 'n vrugtevliegbeheerprogram totdat minstens alle vatbare gewasse klaar geoes is.</p>

GEWAS/PLAAG	DOSIS/HA	OPMERKINGS
<p><b>TAFELDRUIWE, WYNDRUIWE EN ANDER SOORTGELYKE OPGELEIDE GEWASSE:</b>  Meditereense Vrugtevlieg (<i>Ceratitis copitata</i>)  Natale Vrugtevlieg (<i>Ceratitis rosa</i>)  Maroela Vrugtevlieg (<i>Ceratitis cosyra</i>)  Asiatiese Vrugtevlieg (<i>Bactrocera invadens</i>)</p>	<p>1.0 – 1.2 l  <b>GF-120™ NF</b> in  4 – 29 l water  (5– 30 l  lokaasmengsel  per ha)</p>	<p>Dien <b>GF-120™ NF</b> as growwe druppels (met 'n gewenste druppelgrootte van 4 mm deursnee) in 'n totale volume van 5 tot 30 liter aangemaakte lokaas per geplante ha toe. Gebruik alleenlik gekalibreerde toerusting wat aangepas is om aan toedieningsvereistes te voldoen. <b>Sien ook „Algemene Instruksies“ en „Toediening op Tafeldruiwe“ hierbo.</b></p> <p><b>TAFELDRUIWE en ander soortgelyke opgeleide gewasse: Moenie lokaas direk op die druiwe trosse toedien nie.</b>  Behandel minstens elke tweede tot derde ry deur die lokaas aan die onderkant van die priëelkappe toe te dien. Voorkom onnodige spatsels (druppels) op die korrels of vrugte deur die toediening by skuinskappe, aan die bokant van die tros-/vrugtelyn, en by dakpriële, tussen die troslyne, na die blaredek te rig. Die soliede straal metode soos onder „<b>Toediening op vrugtebome</b>“ beskryf word kan oorweeg word, mits spuitplaatjies met 'n klein opening teen relatief hoë druk gebruik word. Dien daaropvolgende toedienings op alternatiewe rye toe.</p> <p><b>WYNDRUIWE:</b> Behandel minstens twee rye aan weerskante van elke tweede of derde werksry, afhangend van heersende vrugtevlieg populasiedruk. Gebruik die soliede straal metode soos onder „<b>Toediening op vrugtebome</b>“ beskryf word. Die strale moet teen 'n redelike hoë druk direk in die blaredek gespuit word sodat wanneer die strale blare of ander obstruksies tref dit in kleiner druppels aan die binnekant van die blaredek opbreek. Dien daaropvolgende toedienings in alternatiewe werksrye toe.</p> <p>Herhaal lokaastoedienings minstens elke 7 – 14 dae afhangend van populasiedruk. Gebruik die korter interval op rypwordende druiwe.</p> <p>Behandel alle vatbare boorde, wingerde en aangrensende plante. Hou ook alle klaar geoeste boorde en wingerde onder 'n vrugtevliegbeheerprogram totdat minstens alle gewasse klaar geoes is.</p>

GEWAS/PLAAG	DOSIS/HA	OPMERKINGS
<p><b>ALLE GROENTEGEWASSE, INSLUITEND TAMATIES</b>  Meditereense Vrugtevlieg (<i>Ceratitis copitata</i>)  Natale Vrugtevlieg (<i>Ceratitis rosa</i>)  Maroela Vrugtevlieg (<i>Ceratitis cosyra</i>)  Asiatiese Vrugtevlieg (<i>Bactrocera invadens</i>)</p> <p><b>TAMATIES EN SOETRISSIES</b>  vir 0 dae voor oes onthoudingsperiode.</p>	<p>1.0 – 1.2 l  <b>GF-120™ NF</b> in  4 – 29 l water  (5 – 30 l  lokaasmengsel  per ha)</p>	<p>Dien <b>GF-120™ NF</b> as growwe druppels (met 'n gewenste druppelgrootte van 4 mm deursnee) in 'n totale volume van 5 – 30 liter aangemaakte lokaas per geplante hektaar toe. Dien toe op gewasse in drag. Gebruik alleenlik gekalibreerde toerusting, wat aangepas is om aan toedieningsvereistes te voldoen. Gebruik toerusting wat 'n soliede dun straal kan lewer.</p> <p>Herhaal lokaastoedienings minstes elke 7 – 14 dae afhangend van populasiedruk. Gebruik die korter interval op rypwordende vrugte.</p> <p><u>Opgeleide tamaties:</u> Behandel een kant van elke ry met lokaasmengsel. Dien toe in dun strook.</p> <p><u>Alle ry groentegewasse insluitende Fabriekstamaties (nie opgelei):</u> Dien toe op draende gewas. Beweeg in land in reguit bane, terwyl kolbehandeling van 40 – 120 ml elke 4 m toegedien word in baan. Bane moet 10 m uitmekaar wees. Dit sal meebring dat op 1 hektaar daar 250 kolbehandelings toegedien word.</p> <p><b>Sien ook “Algemene instruksies” hierbo.</b></p> <p><b>Behandel ook vatbare en geoeste lande wat grens aan behandelde lande.</b></p>

GEWAS/PLAAG	DOSIS/HA	OPMERKINGS
<p><b>PAMPOEN- EN VERWANTE GEWASSE</b> Pampoenvlieë (<i>Dacus</i> spp.)</p>	<p>1.0 - 1.2 l <b>GF-120™ NF</b> in 4 - 29 l water (5 – 30 l lokaasmengsel per ha)</p>	<p>Dien <b>GF-120™ NF</b> as 'n growwe druppel toe (met 'n gewenste druppelgrootte van 4 mm deursnee) op plante in drag. Dien 'n totale volume van 5 tot 30 liter aangemaakte lokaas per geplante ha toe. Gebruik alleenlik gekalibreerde toerusting wat aangepas is om aan toedieningsvereistes te voldoen.</p> <p>Beweeg in land in reguit bane, terwyl kolbehandeling van 40 - 120 ml elke 4 m toegedien word in baan. Bane moet 10 m uitmekaar wees. Dit sal meebring dat op 1 hektaar daar 250 kolbehandelings toegedien sal word. <b>(sien ook "ALGEMENE INSTRUKSIES " hierbo).</b></p> <p>Behandel ook vatbare lande, boorde, wingerde en plante wat grens aan behandelde pampoenlande.</p>
<p><b>LUGTOEDIENING ALLE GEWASSE HIERBO GENOEM</b></p> <p><b>KERNVRUGTE, STEENVRUGTE EN DRUIWE</b> vir 0 dae voor oes onthoudingsperiode</p>	<p>1 l <b>GF-120™ NF</b> + 1 tot 3 l water (2 – 4 l lokaasmengsel per ha)</p>	<p>Die <b>GF-120™ NF</b> moet deeglik met die aanbevole hoeveelheid water gemeng word, voordat dit in die vliegtuig se spuittenk oorgeplaas word.</p> <p>Die buiterante van die boorde of wingerde (ongeveer 30 m) asook enige aangrensende bron van vrugtevlug infestasië, moet indien moontlik ook gespuit word.</p> <p>Die eerste toediening en die tussenposes tussen bespuitings word bepaal deur die weeklikse vrugtevluglokval tellings.</p> <p><b>NOTA:</b> *Reën binne 'n dag of twee na toediening mag die residuele nawerking van die behandeling verminder. *Hoe groter die gebied wat terselfdertyd behandel word, hoe beter die resultate wat verwag kan word. *Sien “<b>Lugtoediening</b>” onder “<b>Algemene Instruksies</b>”.</p>

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