WinField® United

Potato Crop Manual

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WinField® United

Potato Crop Manual

Our comprehensive portfolio of Potato products is provided in a quick reference guide. The aim is to communicate a summary positioning in crop phenological stage (timing of application), features of the product, do's and don'ts, and use rates in an easy one-page format.

Note that crop protection advisors and farmers must always comply with the recommendations on the official label according to the Act (Act 36 of 1947).

Integrated crop management is the most important and sustainable approach to designing and managing crop protection systems. It is a careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimise risks to human health and the environment.

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Potato Growth Stage Spray Programme

VOLUNTEER MAIZE AND GRASSES	PENTIUM 960 EC	SERIES 240 EC	SERIES 240 EC			SERIES 240 EC				
BROAD-LEAF WEEDS AND NUTSEDGE	EPTC PLUS 720 EC	HORNET 480 SL	HORNET 480 SL							
BROAD-LEAF WEEDS AND GRASSES										
HAULM DESTRUCTION										SKOFFEL 200 SUPER
										DISRUPT 200 SL
NEMATODES	EDB MO	NEMACUR® 400 EC	PLATOON 310 SL		PLATOON 310 SL		PLATOON 310 SL			
	TRIMPLE 1110 AL	NEMACUR 240 CS								
	MOCAP® 150 GR									
TUBER MOTH		LAMBDA 50 EC	ACEPHATE 750 WDG	METHOMYL 200 SL	SAVAGE 360 SC	MARGIN 300 WDG	MAINTAIN 200 SP	PRIME 50 EC	PRIME 50 EC	LAMBDA 50 EC
APHIDS		IMIDOR 350 SC			APEX 500 WDG	TRIVIA 500 WDG				
LEAF MINERS			BIOMECTIN 18 EC	BIOMECTIN 18 EC	CYROMAZINE 500 WDG	CYROMAZINE 500 WDG	CARTAP 500 SP	CARTAP 500 SP		
EARLY BLIGHT							MYCOBLOCK 250 SC	ACADEMY 250 SC		
LATE BLIGHT				CYMOXAZEB WP	DIMETHOZEB 690 WP	CENTRAL 500 SC				
EARLY & LATE BLIGHT			VILLA UNIZEB 750 WDG	MISSION 720 SC		MISSION 720 SC	VILLA UNIZEB 750 WDG	MISSION 720 SC	VILLA UNIZEB 750 WDG	

** Please note that programme is adjusted according to season and IPM principles.*
** This programme does not necessarily represent all the products available and must be adjusted to season accordingly.*
** Always read the label before use.*

WINFIELD® UNITED

INSECTICIDE

Click on product links above to get to more information on this product.

Trade name	Active Ingredient	Target Species
ACEPHATE 750 WDG	acephate (organophosphate)	Potato tuber moth and aphids
APEX 500 WDG	pirimicarb (carbamate)	Aphids
BIOMECTIN 18 EC	Abamectin (avermectin)	Leaf miner
CARTAP 500 SP	cartap hydrochloride	Potato tuber moth and leaf miner
CYROMAZINE 750 WP	cyromazine	Potato leaf miner
EDB MO	EDB	Nematodes
IMIDOR 350 SC	imidacloprid (chloro-nicotinyl)	Aphids
LAMBDA 50 EC	lambda-cyhalothrin (pyrethroid)	Potato tuber moth and African bollworm
MAINTAIN 200 SP	acetamiprid (acetamidine)	Green peach aphid and white fly
MARGIN 300 WDG	indoxacarb (oxadiazine)	Potato tuber moth
METHOMYL 200 SL	methomyl (carbamate)	Potato tuber moth and African bollworm
MOCAP 150 GR	ethoprophos (organophosphate)	Nematodes
MOCAP 200 EC	ethoprophos (organophosphate)	Nematodes
NEMACUR 240 CS	fenamiphos (organophosphate)	Nematodes
NEMACUR 400 EC	fenamiphos (organophosphate)	Nematodes
PLATOON 100 GR	oxamyl (carbamate)	Nematodes
PLATOON 100 SL	oxamyl (carbamate)	Nematodes and aphids
PLATOON 310 SL	oxamyl (carbamate)	Nematodes
PRIME 50 EC	Lufenuron (benzamide)	Potato tuber moth
REACT 100 EC	novaluron (benzoylurea)	Potato tuber moth
SAVAGE 360 SC	chlorfenapyr (pyrole)	Potato tuber moth
TAMRON 585 SL	methamidophos (organophosphate)	Potato tuber moth
TRIMPLE 1110 AL	1,3 dichloropropene	Nematodes
TRIVIA 500 WDG	pymetrozine (pyridine azomethine)	Aphids

INSECTICIDE

ACEPHATE 750 SP

Active ingredient: Acephate (organophosphate) 750 g/kg
(Reg. No. L7181, Act 36 of 1947)

A systemic and contact water-soluble insecticide for the control of potato tuber moth *(Phthorimaea operculella)* and aphids on potatoes.




Features

- ACEPHATE 750 SP is a systemic insecticide – taken up through leaves (IRAC Insecticide Group Code 1B).
- Converted to metamidiphos by insects, plants, microbes and mammalia, which is slowly hydrolyzed.
- Stable at low pH (hydrolyzed in half-life of 50 d hours at pH 5 and 21°C.
- Long term activity.
- Taken up by leaves and translocated, controlling a wide range of chewing and sucking insects.
- Entire plant is protected.
- Long residual effect in plants for up to 15 days.
- ACEPHATE 750 SP fits in well in an anti-resistance strategy.
- Will not break down in spray mix if the pH is correct, ensures better control of potato tuber moth larvae.
- ACEPHATE 750 SP has a PHI of 14 days in potatoes.

Do's and don'ts

- Do not use ACEPHATE 750 SP or other Group 1B insecticides exclusively in spray programme.
- Ridge at least twice during the season.
- When the aphid infestation is high, use the higher rate to ensure initial control.

USE RATE†

Potato tuber moth

- 500 g/ha ACEPHATE 750 SP (applied in 200 - 500 ℓ water per hectare)
- Apply at first sign of infestation and repeat every 7 days.

Aphids

- 500 - 750 g/ha ACEPHATE 750 SP (as a full cover spray in 200 – 500 ℓ water per hectare)
- Start application when plants are one month old and repeat every 7 - 14 days.

REGISTRATION DETAILS†
ACEPHATE 750 SP
Active ingredient: Acephate (organophosphate) 750 g/kg
Reg. No. L7181, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
1 Kg

ALWAYS READ THE LABEL

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WINFIELD® UNITED

APEX 500 WDG

INSECTICIDE

Active ingredient: Pirimicarb (carbamate) 500 g/kg
(Reg. No. L8475, Act 36 of 1947)

A water dispersible contact granular insecticide for the control of aphids in potatoes.



Features

- APEX 500 WDG is an IRAC group code 1A insecticide.
- Carbamate group of insecticides.
- Fast acting, systemic translaminar insecticide with contact, stomach and respiratory action .
- WDG formulation for excellent stability and compatibility.
- Aerial application registration.
- APEX 500 WDG does not affect most of the natural enemies of aphids.
- APEX 500 WDG has a PHI of 14 days in potatoes.

Do's and don'ts

- Avoid exclusive repeated use of insecticides from the same insecticide group code.
- Integrate other methods of control (cultural, biological) into insect control programmes.
- Ensure thorough coverage.

USE RATE†
- 500 g/ha (10 g/ha/10 ℓ water)
- Apply in 500 ℓ per hectare (ground application) and 30-40 ℓ water per hectare (aerial application).

REGISTRATION DETAILS†
APEX 500 WDG
Active ingredient Pirimicarb (carbamate)
500 g/kg
Reg. No. L8475 Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5ℓ

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WINFIELD® UNITED

BIOMECTIN® 18 EC

INSECTICIDE

Active ingredient: Abamectin (avermectin) 18 g/ℓ
(Reg. No. L7979, Act 36 of 1947)

An emulsifiable concentrate insecticide with translaminar activity for the control of leaf miner *(Liriomyza trifolli)* in potatoes.




Features

- BIOMECTIN 18 EC is a mixture of avermectin B1a and avermectin B1b (IRAC insecticide group code 6).
- Contact and stomach action.
- Compatible with a range of Villa Crop Protection products.
- Soft on natural predators.
- Exhibits strong translaminar movement.
- BIOMECTIN 18 EC has a PHI of 14 days in potatoes.

Do's and don'ts

- Apply BIOMECTIN 18 EC 20 - 30 days after crop emergence, apply as a high volume spray, using 600 ℓ spray mixture per hectare.
- Ensure a full cover spray.
- Thoroughly wet all foliage surfaces to run-off point
- Do not apply captan or sulphur sprays within 2 weeks before or after applying BIOMECTIN 18 EC plus oil as leaf spotting may result.
- Pre-mix the BIOMECTIN 18 EC and mineral oil together before adding to the mixing tank.
- Do not exceed five (5) applications per season.

USE RATE†
Leafminer *(Liriomyza spp.)*
- 500 mℓ/ha BIOMECTIN 18 EC plus < 500 mℓ medium grade mineral oil/ha or 2 ℓ /ha light paraffin oil
(a minimum of 300 ℓ spray mixture per hectare must be applied, to provide a full cover spray)

REGISTRATION DETAILS†
BIOMECTIN 18 EC
Active ingredient: Abamectin (avermectin) 18 g/ℓ
Reg. No. L7979, Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston
Tel: (011) 396 2233

PACKAGING
1 ℓ, 5 ℓ, 20 ℓ

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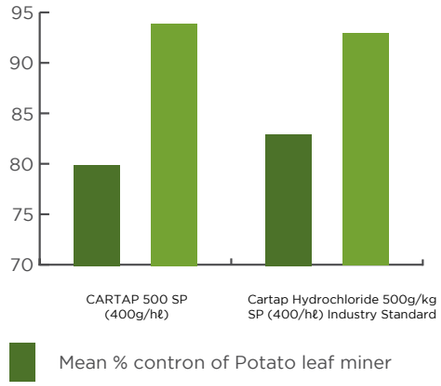
WINFIELD® UNITED

CARTAP 500 SP

INSECTICIDE

Active ingredient: Cartap hydrochloride 500 g/kg
(Reg. No. L7661, Act 36 of 1947)

A soluble powder contact and systemic action insecticide for the control of potato tuber moth larvae *(Phthorimaea operculella)* and potato leaf miner *(Liriomyza huidobrensis)* in potatoes.



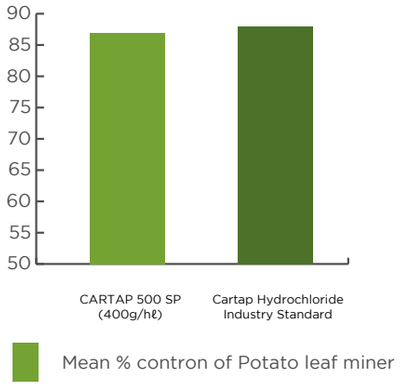


Fig 1.1 (left): Summary of a trial done in the Burgersfort area (2004) showing the performance of CARTAP 500 SP at controlling potato leaf miner (Liriomyza huidobrensis), when applied on potatoes. Fig 1.2 (right): Graph shows the mean percentage overall leaf miner control 9 days after application.

USE RATE†

Potato tuber moth larvae
(Phthorimaea operculella)
- Apply CARTAP 500 SP 400 g per 100 ℓ water (maximum 2 kg/ha)

Potato leaf miner
(Liriomyza huidobrensis)
- 400 g CARTAP 500 SP per 100 ℓ water (maximum 2 kg/ha)
- NB Apply 500 ℓ spray mixture per hectare

REGISTRATION DETAILS†
CARTAP 500 SP
Active ingredient: Cartap hydrochloride 500 g/kg
Reg. No. L7661 Act 36 of 1947
(caution)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

PACKAGING
1 kg

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WINFIELD® UNITED

INSECTICIDE

CARTAP 500 SP

Active ingredient: Cartap hydrochloride 500 g/kg
(Reg. No. L7661, Act 36 of 1947)

A soluble powder contact and systemic action insecticide for the control of potato tuber moth larvae *(Phthorimaea operculella)* and potato leaf miner *(Liriomyza huidobrensis)* in potatoes.

Features

- APEX 500 WDG has a PHI of 14 days in potatoes, interferes with insect nervous system (IRAC Insecticide Group Code 14).
- CARTAP 500 SP is a powder that is readily soluble in water.
- Analogue or propesticide of the natural toxin nereistoxin.
- CARTAP 500 SP is highly systemic in potatoes, with stomach and contact action.
- CARTAP 500 SP is effective on chewing and sucking insects.
- CARTAP 500 SP is not an ASL inhibitor - different mode of action therefore reduces risk of resistance of insect.
- Stable formulation with long shelf life.
- CARTAP 500 SP is easily absorbed by plant.
- Insects stop feeding immediately and die later.
- Long term activity; insects die when eating plant or when in contact with CARTAP 500 SP.
- Excellent control on all tuber moth larvae, leaf miners and other chewing insects.

Do's and don'ts

- Apply first application as soon as the first moths are noticed.
- Apply in a 10 - 14 day interval (tuber moth). Apply in a 7 day interval (leaf miner).
- Do not use dosage rates higher than recommended as phytotoxicity may occur.
- Always ensure that the pH of the spray water is below 6 (buffers may be utilized for desired results).
- Avoid exclusive repeat of insecticides of the same group as CARTAP 500 SP, to avoid development of resistance.
- Do not mix CARTAP 500 SP with products containing organic solvents.

USE RATE†

Potato tuber moth larvae
(Phthorimaea operculella)
- Apply CARTAP 500 SP 400 g per 100 ℓ water (maximum 2 kg/ha)

Potato leaf miner
(Liriomyza huidobrensis)
- 400 g CARTAP 500 SP per 100 ℓ water (maximum 2 kg/ha)
- NB Apply 500 ℓ spray mixture per hectare

REGISTRATION DETAILS†
CARTAP 500 SP
Active ingredient: Cartap hydrochloride 500 g/kg
Reg. No. L7661 Act 36 of 1947
(caution)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

PACKAGING
1 kg

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INSECTICIDE

CYROMAZINE 750 WP

Active ingredient: Cyromazine 750 g/kg (Reg. No. L7424, Act 36 of 1947)

A wettable powder systemic insect growth inhibitor with contact and stomach action for the control of potato leaf miner *(Liriomyza huidobrensis)* in potatoes.

Fig 1.1 (left): Summary of a trial done showing the performance of CYROMAZINE 750 WP at controlling leaf miner on potatoes at three consecutive evaluations

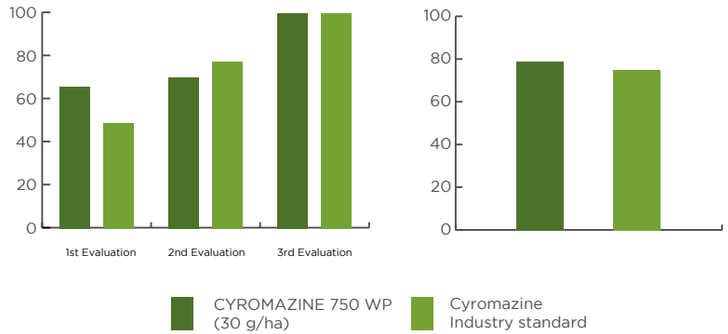

Fig 1.2 (right): Graph shows the mean percentage overall leaf miner control after the third and last evaluation

Features

- CYROMAZINE 750 WP is an insect growth regulator (chitin inhibitor) with contact action, which interferes with moulting and pupation (IRAC insecticide group code 17).
- Highly suitable for use in IPM systems due to the product's selectivity.
- CYROMAZIINE 750 WP is an essential part of leaf tool for the control of leaf miners in potatoes and is highly effective as it translocates systemic and translaminar in plants
- Rapidly metabolized in plants.
- It has no effect on adults and only has a moulting effect on young larvae that prevents pupation.
- CYROMAZINE 750 WP has a PHI of 28 days in potatoes.

Do's and don'ts

- Apply as a complete full cover spray to the point of run-off.
- Apply in a spray programme with ABAMECTIN 18 g/ℓ EC.
- Start with ABAMECTIN 18 g/ℓ EC after emergence of the crop and follow-up with CYROMAZINE 750 WP till flowering.
- Apply at least 2 successive sprays at 7 day intervals.
- Do not alternate CYROMAZINE 750 WP with group 17 insecticides.
- Do not mix CYROMAZINE 750 WP with Lufenuron.

USE RATE†
Potato leaf miner
(Liriomyza huidobrensis)
- Apply 200 g/ha CYROMAZINE 750 WP (apply a high volume application, in up to 600 ℓ water per hectare)

REGISTRATION DETAILS†
CYROMAZINE 750 WP
Active ingredient: Cyromazine 750 g/kg
Reg. No. L7424 Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston
Tel: (011) 396 2233

PACKAGING
1 Kg

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INSECTICIDE

EDB MO

Active ingredient: EDB 1800 g/ℓ
(Reg. No. L4431, Act 36 of 1947)

A soil fumigant for the control of nematodes in potatoes while the field is free of crops.



Features

- EDB MO is an IRAC group code 8 insecticide.
- EDB MO controls nematodes before planting in potatoes.
- Different dosage options.
- Very volatile for thorough fumigation.
- EDB MO contains fumigant insecticidal properties.
- Controls nematode, wireworm and other soil pests.

Do's and don'ts

- The soil must be moist, in good tilth and free of undecomposed plant residues.
- Do not use galvanized containers.
- The soil must be free of EDB MO before planting. This requires at least 2 weeks and can be tested by smelling a handful of soil.
- If EDB MO is still present, the soil should be aerated by cultivation before planting.
- The EDB MO must be placed 15 to 25 cm deep into the soil and the furrows or injection holes must be closed up immediately.
- Fumigation is more effective if the soil is sealed by rolling and overall light irrigation.
- Do not use hard water because the EDB MO may flocculate.

USE RATE†
- EDB MO concentrate:
  Use 20 – 50 ℓ/ha
- Mix in the proportion of one part EDB MO to **three** parts of water to obtain a 450 g/ℓ
  450 g/ℓ mixture: Use 100 ℓ/ha
- Mix in the proportion of one-part EDB MO to **seven** parts of water to obtain a 225 g/ℓ
  225 g/ℓ mixture: Use 200 ℓ/ha

REGISTRATION DETAILS†
EDM MO
Active ingredient: EDB 1800 g/ℓ
Reg. No. L4431, Act 36 of 1947
(toxic)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

PACKAGING
20 ℓ

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INSECTICIDE

IMIDOR 350 SC

Active ingredient: Imidacloprid (chloro-nicotinyl) 350 g/ℓ
(Reg. No. L8019 Act 36 of 1947)

A systemic suspension concentrate insecticide for the control of aphids *(Myzus persicae)* on potatoes.



Features

- IMIDOR 350 SC is an IRAC group code 4A insecticide.
- IMIDOR 350 SC controls aphids *(Myzus persicae)* in potatoes.
- Acts as an antagonist by binding to postsynaptic nicotinic receptors in the insect central nervous system.
- IMIDOR 350 SC is a systemic insecticide with translaminar activity and with contact and stomach action.
- Good systemic root absorption and distributed acropetally.
- Stable to hydrolysis.
- Used as a seed dressing, soil treatment and foliar treatment.
- IMIDOR 350 SC is transported to all parts of the plant. Total plant protection; long term activity.
- Flexibility on application usage. Can be used for various purposes.

Do's and don'ts

- Apply the mixture from ridge-tip to ridge-tip in the planting furrow using 3 – 4 ℓ water per 100 m furrow length.
- Apply before planting of the tubers. IMIDOR 350 SC can also be applied over the row after planting, but before emergence.
- Irrigate immediately afterwards (315 mm water).
- First apply MOCAP 150 GR as a broadcast application prior to planting for the control of nematodes.
- Do not apply IMIDOR 350 SC mixtures directly on to tubers.
- Prevent drift on to surrounding crops where honey bees may be present.

USE RATE†
- 4 mℓ/100 m row or 1 mℓ/25 m row length (small scale farmers).

REGISTRATION DETAILS†
IMIDOR 350 SC
Active ingredient: Imidacloprid (chloro-nicotinyl) 350 g/ ℓ
Reg. No. L8019, Act 36 of 1947
(harmful)

MOCAP 150 GR
Active ingredient: Ethoprophos (organophosphate) 150 g/kg
Reg No. L6985, Act 36 of 1947
(harmful)

Registration holder:
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Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5ℓ and 20ℓ

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WINFIELD® UNITED

INSECTICIDE

LAMBDA 50 EC

Active ingredient: Lambda-cyhalothrin (pyrethroid) 50 g/ℓ
(Reg. No. L7787 Act 36 of 1947)

An emulsifiable concentrate contact insecticide for the control of potato tuber moth (larvae) *(Phthorimaea operculella)* and African bollworm *(Helicoverpa armigera)* in potatoes.



Features

- LAMBDA 50 EC acts on the nervous system of insects, and disturbs the function of neurons by interaction with the sodium channel (IRAC insecticide group code 3).
- LAMBDA 50 EC is a non-systemic insecticide with contact action as well as repellent properties.
- Destroys a wide range of pests (broad-spectrum pest control).
- Provides a rapid knockdown effect.
- Strongly adsorbed to soil and sediment organic matter therefore does not leach into ground water.
- LAMBDA 50 EC has a PHI of 3 days which allows this product to be used throughout the season.
- Excellent compatibility with a wide range of registered Villa products.
- Also registered for the control of cutworm on potatoes.

Do's and don'ts

- Apply 250 – 500 ℓ water per ha (ground application), depending on plant size.
- Apply first treatment when plants are one month old, earlier if infestation occurred.
- Repeat treatment every 10 – 14 days.
- Ridge at least twice during the growing season.
- Do not apply more than two applications per growing season to avoid African bollworm resistance.
- Larvae should not exceed 10 mm in length, at time of application to ensure optimal control of susceptible bollworm populations.
- Don't use LAMBDA 50 EC or insecticides from the same group code exclusively. Alternate tank-mix with products from different insecticide group codes.
- Water quality influences the effectiveness of LAMBDA 50 EC, pH should be between 5 and 8 and water used with preferably less than 1,000 p.p.m salt solutes.
- COMMODOBUFF is compatible with LAMBDA 50 EC should the pH be too high.

USE RATE†
Potato tuber moth (larvae) and African bollworm
- 120 mℓ/ha or 5 mℓ/10 ℓ water
  A spray mixture of between 250-500 ℓ/ha must be applied to provide a full cover spray (ground application),
- 132 mℓ/ha LAMBDA 50 EC, apply >30ℓ/ha (aerial application).

REGISTRATION DETAILS†
LAMBDA 50 EC
Active ingredient: Lambda-cyhalothrin (pyrethroid) 50 g/ℓ
Reg. No. L7787 Act 36 of 1947
(harmful)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

COMMODOBUFF
Active ingredient: Organic acid and alkali 660g/ ℓ
Reg. No. L5390, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Co. Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
1 ℓ, 5 ℓ

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MAINTAIN 200 SP

INSECTICIDE

Active ingredient: Acetamiprid (acetamidine) 200 g/kg
(Reg. No. L9225, Act 36 of 1947)

A water soluble powder systemic, contact and stomach insecticide for the control of green peach aphid *(Myzus persicae)* and whitefly *(Bemisia tabaci)* in potatoes.




Features

- MAINTAIN 200 SP is an IRAC group code 4A insecticide.
- Neonicotinoid and acts on the central nervous system of insects.
- MAINTAIN 200 SP controls aphids *(Myzus persicae)* and Whitefly *(Bemisia tabaci)* in potatoes.
- Contact, translaminar as well as upward systemic.
- Low dosage rates required (50 g/ha) for effective control.
- Rapid knockdown.
- Good residual activity.
- Aerial application registration.

Do's and don'ts

- Very toxic to honeybees.
- Do not use with triazole fungicides as it significantly enhances bee toxicity.
- Do not use more than 3 applications per season for resistance management.
- Dust and other covering of the leaf surface reduces systemic uptake.
- Upward systemic and therefore canopy penetration is vital.
- Use with 500 ℓ water.
- Buffer between 4.5 and 5,5 pH.

USE RATE†
- 50 g/ha + 50 mℓ/100 ℓ water
  VILLA 51 in 500 ℓ water.

REGISTRATION DETAILS†
MAINTAIN 200 SP
Active ingredient: Acetamiprid (acetamidine) 200 g/kg
Reg. No. L9225 Act 36 of 1947
(caution)

VILLA 51
Active ingredient: Isotridecanol (alkylpolyethylene glycol ether) 918 g/ℓ
Reg. No. L8050, Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
1 kg

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WINFIELD® UNITED

INSECTICIDE

MARGIN 300 WDG

Active ingredient: Indoxacarb (oxadiazine) 300 g/kg (Reg. No. L9009 Act 36 of 1947)

A water dispersible granule insecticide with contact and stomach action for the control of potato tuber moth (larvae) *(Phthorimaea operculella)* on potatoes.

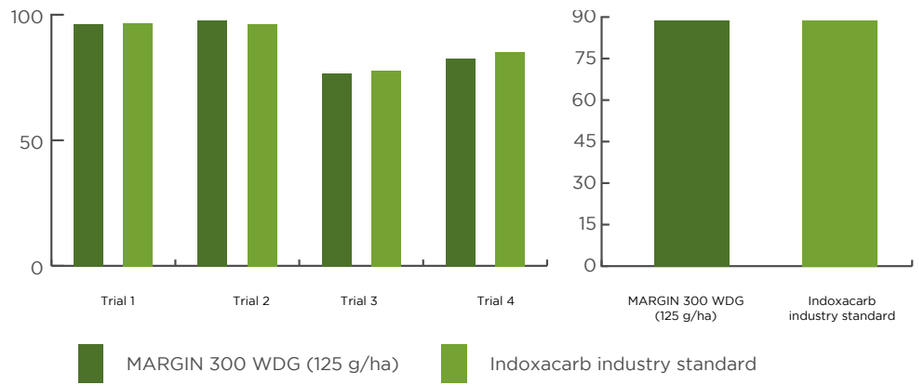

Fig 1.1 (left): Summary of four (4) trials done showing the performance of MARGIN 300 WDG at controlling potato tuber moth (Phthorimaea operculella) on potatoes.

Fig1.2 (right): Graph shows the mean percentage overall potato tuber moth control in all 4 areas.

USE RATE†
Potato tuber moth larvae
(Phthorimaea operculella)
- Ground application:
  125 g/ha MARGIN 300 WDG (apply in 500 - 1000 ℓ water per hectare)
- Aerial application: 150 g/ha MARGIN 300 WDG + 18 mℓ VILLA 51 per 100 ℓ water (apply in at least 30 ℓ water per hectare)

REGISTRATION DETAILS†
MARGIN 300 WDG
Active ingredient: Indoxacarb (oxadiazine) 300 g/kg
Reg. No. L9009 Act 36 of 1947
(caution)

VILLA 51
Active ingredient: Isotridecanol (alkylpolyethylene glycol ether) 918 g/ℓ
Reg. No. L8050, Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
250 g

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WINFIELD® UNITED

MARGIN 300 WDG

INSECTICIDE

Active ingredient: Indoxacarb (oxadiazine) 300 g/kg
(Reg. No. L9009 Act 36 of 1947)

A water dispersible granule insecticide with contact and stomach action for the control of potato tuber moth (larvae) *(Phthorimaea operculella)* on potatoes.

Features

- MARGIN 300 WDG has a voltage dependent sodium channel blocker in insect nerve cells (IRAC insecticide group code 22).
- Insecticide active by contact and ingestion, very quick feeding cessation and immobilisation of target pests.
- Proven class of chemistry, unique chemistry in this class making it an integral part of a IPM strategy.
- Insects stop feeding, due to poor co-ordination, paralysis and ultimately death.
- Effective performance under wide temperature ranges.
- MARGIN 300 WDG is lipophilic and therefore absorbs onto the waxy cuticle of the leaf making the product rainfast within hours of application.
- Consistently active on all larval stages. Thus, is not dependent on the size of the pest.
- Highly selective insecticide, that has little effect on beneficial insects.
- Will also control Bollworm if present at the time of application.
- MARGIN 300 WDG has no withholding period in potatoes.

Do's and don'ts

- Apply as a preventative or early corrective treatment.
- Apply when moths or first "mine tunnels" are observed on the leaves.
- Do regular scouting to determine when follow-up treatments should be applied.
- When infestations recur continuously, it is recommended to apply MARGIN 300 WDG at 8 - 14 day intervals.
- Apply at shorter intervals when plants are growing actively early in the season.
- Apply as a block spray programme of 2-3 consecutive applications before alternating with different chemistry.
- Do not apply late in the season when foliage is dying, as this may result in insufficient control.
- Do not exceed five applications per season.
- Ridge at least two times during the season.

USE RATE†
Potato tuber moth larvae
(Phthorimaea operculella)
- Ground application:
  125 g/ha MARGIN 300 WDG
  (apply in 500 - 1000 ℓ water per hectare)
- Aerial application: 150 g/ha
  MARGIN 300 WDG + 18 mℓ VILLA 51
  per 100 ℓ water (apply in at least 30 ℓ water per hectare)

REGISTRATION DETAILS†
MARGIN 300 WDG
Active ingredient: Indoxacarb (oxadiazine) 300 g/kg
Reg. No. L9009 Act 36 of 1947
(caution)

VILLA 51
Active ingredient: Isotridecanol (alkylpolyethylene glycol ether) 918 g/ℓ
Reg. No. L8050, Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
250 g

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INSECTICIDE

METHOMYL 200 SL

Active ingredient: Methomyl (carbamate) 200 g/ℓ
(Reg. No. L7100, Act 36 of 1947)

A water-soluble liquid insecticide for the control of potato tuber moth *(Phthorimaea operculella)* and African bollworm *(Helicoverpa armigera)* on potatoes.




Features

- METHOMYL 200 SL is a cholinesterase inhibitor (IRAC insecticide group code 1A).
- Systemic insecticide and acaricide with contact action.
- Rapidly degraded to CO_2 and acetonitrile, with incorporation into natural plant components.
- Highly soluble liquid molecule.
- Insect gets disorientated and stops feeding immediately.
- Participate on CO_2 development to be used by the plant.
- Easily mixes with water for applications.
- METHOMYL 200 SL has a PHI of 3 days in potatoes.

Do's and don'ts

- For tuber moth, begin application as soon as the plant is one month old or sooner with early infestations.
- Repeat applications weekly throughout the growing season.
- Use higher dosage if the spray intervals exceed one week.
- Cover tubers by ridging particularly against tuber moth.
- Do ridging at least twice during growing season.
- For African bollworm, one application is adequate. If further outbreaks occur, repeat application.
- Ensure a good coverage of the plants.

USE RATE†
Potato tuber moth and African bollworm
- Aerial application
  Apply 1350 - 2250 mℓ/ha METHOMYL 200 SL (apply in 30 ℓ water per hectare)
- Ground application
  225 mℓ METHOMYL 200 SL per 100 ℓ of water (apply up to 1000 ℓ spray mixture per hectare)

REGISTRATION DETAILS†
METHOMYL 200 SL
Active ingredient: Methomyl (carbamate) 200 g/ℓ
Reg. No. L7100, Act 36 of 1947
(very toxic)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

PACKAGING
5 ℓ

ALWAYS READ THE LABEL

villa | www.villacrop.co.za

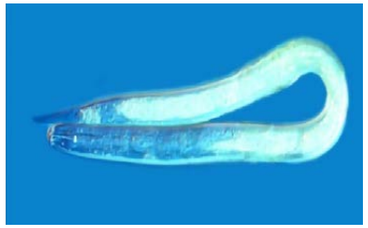
WINFIELD® UNITED

MOCAP 150 GR

INSECTICIDE

Active ingredient: Ethoprophos (organophosphate) 150 g/kg
(Reg No. L6985, Act 36 of 1947)

A granular contact nematicide for the control of nematodes in potatoes.



Features

- MOCAP 150 GR is an IRAC group code 1B insecticide.
- MOCAP 150 GR controls a wide spectrum of plant-parasitic nematodes in potatoes.
- Very stable in neutral and weakly acid soil.
- Granular formulation (GR) is indicated as a yellow band (harmful) product.

Do's and don'ts

- Use in conjunction with a fumigation programme.
- Use in conjunction with a foliar applied nematicide programme.
- Incorporate granules into the soil to a depth of 15 to 25 cm.
- Do not use on soils of pH 9 or above or where irrigation water has pH of 9 or above.
- Only apply to well-prepared seed beds.

USE RATE†
- Table Potatoes; 35 kg/ha (Low infestation) / 50 kg/ha (High infestation)
- Seed & Chipping Potatoes: 50 kg/ha
- Apply as a broadcast application prior to planting or the formation of ridges and beds.
- Incorporate granules into the soil to a depth of 15 to 25 cm.
- Plant potatoes soon after application, but not later than 7 days post application.

REGISTRATION DETAILS†
MOCAP 150 GR
Active ingredient: Ethoprophos (organophosphate) 150 g/kg
Reg No. L6985, Act 36 of 1947 (harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
15 kg

ALWAYS READ THE LABEL

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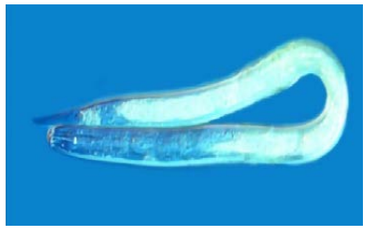
WINFIELD® UNITED

MOCAP 200 EC

INSECTICIDE

Active ingredient: Ethoprophos (organophosphate) 200 g/ℓ
(Reg. No. L10667, Act 36 of 1947)

An emulsifiable concentrate, contact nematicide for the control of nematodes in potatoes.



Features

- MOCAP 200 EC is an IRAC group code 1B insecticide.
- MOCAP 200 EC controls a wide spectrum of plant-parasitic nematodes in potatoes.
- Very stable in neutral and weakly acid soil.
- Liquid formulation (EC) is indicated as a red band (very toxic) product.

Do's and don'ts

- Use in conjunction with a fumigation programme.
- Use in conjunction with a foliar applied nematicide programme.
- Incorporate liquid into the soil to a depth of 15 to 25 cm.
- Do not use on soils of pH 9 or above or where irrigation water has pH of 9 or above.
- Only apply to well-prepared seed beds.

USE RATE†
- Table potatoes; 26,3 ℓ /ha (Low infestation) / 37,5 ℓ /ha (High infestation)
- Apply as a broadcast application prior to planting or the formation of ridges and beds.
- Incorporate liquid into the soil to a depth of 15 to 25 cm.
- Plant potatoes soon after application, but not later than 7 days post application.

REGISTRATION DETAILS†
MOCAP 200 EC
Active ingredient: Ethoprophos (organophosphate) 200 g/ℓ
Reg. No L10667, Act 36 of 1947
(very toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. Nr. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
20 ℓ

ALWAYS READ THE LABEL

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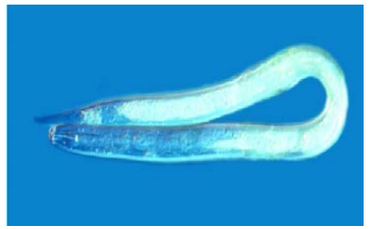
WINFIELD® UNITED

NEMACUR® 240 CS

INSECTICIDE

Active ingredient: Fenamiphos (organophosphate) 240 g/ℓ
(Reg. No. L7247, Act 36 of 1947)

A systemic micro-encapsulated suspension concentrate nematicide and insecticide for the control of nematodes on potatoes and as a foliar application on potatoes for the control of nematodes.



Features

- NEMACUR 240 CS is an IRAC group code 1B insecticide.
- Systemic nematicide with contact action.
- Effective against all nematode species that will attack potatoes.
- Soil and foliar applications.
- NEMACUR 240 CS, an encapsulated formulation, is designated as a yellow band product.
- NEMACUR 240 CS has secondary activity against sucking insects.
- Protection against spreading of viruses.
- Non-phytotoxic when applied to soil.
- Low solubility in water with reduced risk to groundwater
- Do not apply directly onto tubers.
- Use in conjunction with a fumigation programme for increased efficacy.
- Use in conjunction with a foliar applied nematicide programme.
- Only apply to well-prepared seed beds.
- Do not apply under stress conditions.

Do's and don'ts

ALWAYS READ THE LABEL

USE RATE†
- Soil: 25 ℓ to 42 ℓ/ha in 250 ℓ to 500 ℓ of water per hectare.
- Foliar: (Western Cape only) 6,7 ℓ/ha in 500 ℓ water per hectare.
- Apply a total of 6 foliar sprays.

REGISTRATION DETAILS†
NEMACUR 240 CS
Active ingredient: fenamiphos (organophosphate) 240 g/ℓ
Reg. No. L7247, Act 36 of 1947 (harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

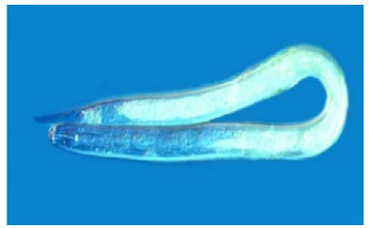
PACKAGING
5 ℓ, 20 ℓ

NEMACUR® 400 EC

INSECTICIDE

Active ingredient: Fenamiphos (organophosphate) 400 g/ℓ
(Reg. No. L0367, Act 36 of 1947)

A systemic emulsifiable concentrate nematicide and insecticide for the control of nematodes on potatoes and as a foliar application on potatoes for the control of nematodes in the Western Cape only.


Features

- NEMACUR 400 EC is an IRAC group code 1B insecticide.
- Systemic nematicide with contact action.
- Effective against all nematode species that will attack potatoes.
- Soil and foliar applications.
- NEMACUR 400 EC has secondary activity against aphids.
- Protection against spreading of viruses.
- Non-phytotoxic when applied to soil.
- Low solubility in water with reduced risk to groundwater.

Do's and don'ts

- Do not apply directly onto tubers.
- Use in conjunction with a fumigation programme for increased efficacy.
- Use in conjunction with a foliar applied nematicide programme.
- Only apply to well-prepared seed beds.
- Do not apply under stress conditions.
- Use the lower rate only on table potatoes in the Eastern Highveld of Gauteng/Mpumalanga.

USE RATE†
- Soil: 15 ℓ to 25 ℓ/ha in 250 ℓ to 500 ℓ of water per hectare.
- Apply to the total furrow area.
- Foliar: (Western Cape only) 4 ℓ/ha in 500 ℓ water per hectare.
- Apply a total of 6 foliar sprays.

REGISTRATION DETAILS†
NEMACUR 400 EC
Active ingredient: Fenamiphos (organophosphate) 400 g/ℓ
Reg. No. L0367, Act 36 of 1947
(very toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5 ℓ, 20 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INSECTICIDE

PLATOON® 100 GR

Active ingredient: Oxamyl (carbamate) 100 g/kg
(Reg. No. L10559, Act 36 of 1947)

A granular nematicide/insecticide for protection against nematode species as listed and the suppression of aphids on potatoes.

Features

- PLATOON 100 GR is an IRAC group code 1A insecticide.
- PLATOON 100 GR controls nematodes and suppresses aphids *(Myzus persicae)* in potatoes.
- Highly systemic translocating rapidly upwards and downwards.
- Immediate disorientation and ceasing of feeding.
- GR formulation acidified for stability in high pH soils.
- Granular formulation most stable to high soil pH (above 5.5).
- Carbamate group of insecticides stimulate root development.
- Lateral and vertical movement of the active in the soil profile is very good.

Do's and don'ts

- PLATOON 100 GR forms part of a comprehensive nematode management programme.
- Only apply PLATOON 100 GR to moist soil.
- Apply PLATOON 100 GR into planting furrow before closing.
- Follow up with 3 foliar sprays of PLATOON 310 SL at 4 week intervals.

USE RATE†
- 350 g / 100 m row.

REGISTRATION DETAILS†
PLATOON 100 GR
Active ingredient: Oxamyl (carbamate) 100 g/kg
Reg. No. L10559, Act 36 of 1947
(very toxic)

PLATOON 310 SL
Active ingredient: Oxamyl (carbamate) 310 g/ℓ
Reg. No. L7370, Act 36 of 1947
(very toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
10 kg

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INSECTICIDE

PLATOON 100 SL

Active ingredient: Oxamyl (carbamate) 100 g/ℓ
(Reg. No. L10649, Act 36 of 1947)

A water soluble liquid systemic nematicide/insecticide for protection against nematodes and insect pests on potatoes.

Features

- PLATOON 100 SL is an IRAC Group Code 1A Insecticide.
- PLATOON 100 SL controls nematodes and suppresses aphids *(Myzus persicae)* in potatoes.
- Highly systemic translocating rapidly upwards and downwards.
- Immediate disorientation and ceasing of feeding.
- Carbamate group of insecticides stimulate root development.
- Lateral and vertical movement of the ai in the soil profile is very good.

Do's and don'ts

- Buffer spray water to pH 5.5.
- Apply with the prescribed volume of water.
- Platoon forms part of a comprehensive nematode management programme.
- Nematodes controlled by PLATOON 100 SL excludes *Meloidogyne chitwoodi* and M. fallax.

USE RATE†
- 2.48 ℓ /100 ℓ water.
- Apply first treatment in 250 ℓ water/ Ha.
- Apply second treatment 4 weeks later in 600 ℓ water/Ha.
- Repeat with third treatment after 4 weeks in 600 ℓ water/Ha.

REGISTRATION DETAILS†
PLATOON 100 SL
Active ingredient: Oxamyl (carbamate) 100 g/ℓ
Reg. No. L10649, Act 36 of 1947
(very toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
20ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INSECTICIDE

PLATOON® 310 SL

Active ingredient: Oxamyl (carbamate) 310 g/ℓ
(Reg. No. L7370, Act 36 of 1947)

A water soluble liquid systemic nematicide/insecticide for protection against nematodes and insect pest on potatoes.



Features

- PLATOON 310 SL is an IRAC group code 1A insecticide.
- PLATOON 310 SL controls nematodes and suppresses aphids *(Myzus persicae)* in potatoes.
- Highly systemic translocating rapidly upwards and downwards.
- Immediate disorientation and ceasing of feeding.
- Controls leaf miner and suppresses aphids.
- Carbamate group of insecticides stimulate root development.
- Lateral and vertical movement of the ai in the soil profile is very good.

Do's and don'ts

- Do not apply PLATOON 310 SL to the soil -pH sensitive.
- Buffer spray water to pH5.5.
- Apply with the prescribed volume of water.
- Do not exceed 3 applications per season or a total of 12 ℓ / ha/season.
- Repeat every 4 weeks.
- PLATOON 310 SL forms part of a comprehensive nematode management programme.

USE RATE†
- 800 mℓ/100 ℓ water.
- Apply 250 ℓ spray mixture 7 days after emergence.
- Repeat after 4 weeks in 600 ℓ water/ Ha.
- A third treatment must be made after a further 4 weeks in 600 ℓ water/Ha.

REGISTRATION DETAILS†
PLATOON 310 SL
Active ingredient: Oxamyl (carbamate) 310 g/ℓ
Reg. No. L7370, Act 36 of 1947
(very toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5ℓ and 20ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INSECTICIDE

PRIME 50 EC

Active ingredient: Lufenuron (benzamide) 50 g/ℓ
(Reg. No. L8660, Act 36 of 1947)

An emulsifiable concentrate contact and stomach insecticide for the control of potato tuber moth larvae *(Pthorimoea operculella)* in potatoes.

Fig 1. Damage caused by potato tuber moth larvae.

Features

- PRIME 50 EC is an IRAC group code 15 insecticide.
- Benzoylurea group of insecticides.
- Prime 50 EC is an insect growth regulator.
- Inhibitor of chitin biosynthesis.
- Stop moulting by preventing cuticle formation.
- Long residual effect on the leaf .
- Ovicidal effect on freshly laid eggs.
- Very low soil mobility and very low leaching.
- PRIME 50 EC has no withholding period.
- Ideal option as part of an IPM spray programme with low impact on beneficial insects.
- PRIME 50 EC has no withholding period.
- Ideal option as part of an IPM spray programme with low impact on beneficial insects.

Do's and don'ts

- Avoid exclusive repeated use of insecticides from the same insecticide group code.
- Acceptable control will only be achieved by applying multiple, successive applications of PRIME 50 EC.
- Do not apply more than six (6) consecutive treatments per crop season.
- Do not use PRIME 50 EC in tank mixtures with mancozeb, carbamates, and compounds containing copper.
- Do not apply during the heat of the day or if rain is pending.
- Commence application after flowering at the start of senescence.

USE RATE†
- 800 mℓ/ha
- Apply in 500 ℓ per hectare. (ground application) and 30-40 ℓ water per hectare (aerial application).
- Repeat at two weekly intervals until leaves stop growing.

REGISTRATION DETAILS†
PRIME 50 EC
Active ingredient: Lufenuron (benzoylurea) 50 g/ ℓ
Reg. No. L8660, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5 ℓ, 20 ℓ

ALWAYS READ THE LABEL

villa | www.villacrop.co.za

WINFIELD® UNITED

REACT 100 EC

INSECTICIDE

Active ingredient: Novaluron (benzoylurea) 100 g/ℓ
(Reg No. L9155, Act 36 of 1947)

An emulsifiable concentrate stomach insecticide for the control of potato tuber moth *(Phthorimaea operculella)* larvae in potatoes.



Features

- REACT 100 EC is an IRAC group code 15 insecticide.
- REACT 100 EC controls potato tubermoth larvae in potatoes.
- Chitin biosynthesis inhibitor (Insect Growth regulator – IGR).
- It has no effect on the adult insect but acts as a sterilant on the adult females.
- Moderate contact action.
- Strong stomach activity.
- Low effect on beneficial predators.
- Good for resistance control as the mode of action differs from pyrethroids, organophosphates and carbamates.
- It's residual activity on leaves and translaminar action is excellent - not systemic.
- Aerial application registration.
- African Bollworm will also be controlled if present at the time of application.

Do's and don'ts

- Should be present on the target surface when eggs are laid or soon after, or when the first larvae are noticed.
- It prevents the first larval molt in the egg to take place. It therefore prevents egg hatching.
- Do not exceed 4 applications per season.
- Use the product in an application window of 1-3 successive applications in 2 week intervals, depending on the infestation.

USE RATE†
- 350 mℓ / ha in 500 ℓ water (ground application).
- 350 mℓ / ha in 40 ℓ water (aerial application).

REGISTRATION DETAILS†
REACT 100 EC
Active ingredient: Novaluron (benzoylurea) 100 g/ℓ
Reg. No. L9155, Act 36 of 1947 (caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
1 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

SAVAGE 360 SC

INSECTICIDE

Active ingredient: Chlorfenapyr (pyrole) 360 g/ℓ
(Reg. No. L8533 Act 36 of 1947)

A suspension concentrate contact and stomach insecticide with translaminar activity for the control of potato tuber moth (larvae) *(Phthorimaea operculella)* in potatoes.

Summary of 2 trials done showing the performance 100 of SAVAGE 360 SC at controlling potato tuber moth (Phthorimaea operculella) in potatoes at 3 consecutive assessments. The graph shows the mean percentage control of potato tuber moths by comparing the mean percentage of haulms with living larvae of the treated plots to the untreated control plots.

USE RATE†
Larvae of the potato tuber moth (Phthorimaea operculella):
- Apply 300 mℓ/ha SAVAGE 360 SC (in at least 500 ℓ spray mixture per hectare - ground application)
- Apply 400 mℓ/ha SAVAGE 360 SC (in 40 ℓ water per hectare - aerial application)

REGISTRATION DETAILS†
SAVAGE 360 SC
Active ingredient: Chlorfenapyr (pyrole) 360 g/ ℓ
Reg. No. L8533 Act 36 of 1947
(harmful)

COMMODOBUFF
Active ingredient: Organic acid and alkali 660g/ ℓ
Reg. No. L5390, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
1 ℓ

ALWAYS READ THE LABEL

villa | www.villacrop.co.za

WINFIELD® UNITED

SAVAGE 360 SC

INSECTICIDE

Active ingredient: Chlorfenapyr (pyrole) 360 g/ℓ
(Reg. No. L8533 Act 36 of 1947)

A suspension concentrate contact and stomach insecticide with translaminar activity for the control of Potato tuber moth (larvae) *(Phthorimaea operculella)* in potatoes.

Features

- SAVAGE 360 SC uncouples oxidative phosphorylation via disruption of hydrogen proton gradient (IRAC insecticide group code 13).
- Insecticide and acaricide with both stomach and contact action on all stages of insects and; exhibits good translaminar, but very limited systemic action.
- SAVAGE 360 SC has a unique mode of action as it interferes with respiration by acting on mitochondria within the cells.
- SAVAGE 360 SC only becomes active once it enters the insects system through ingestion of treated plant tissue, making it harmless to predatory mites and parasites, thus making it the ideal tool for IPM system.
- SAVAGE 360 SC exhibits good translaminar activity allowing it to control pests on the lower side of the leaf.
- Control species that are resistant to carbamate, organo-phosphate and pyrethroid insecticides
- SAVAGE 360 SC can be rotated with other compounds with alternative modes of action to prevent the development of resistance.
- SAVAGE 360 SC has a PHI of 14 days in potatoes.

Do's and don'ts

- Apply preventively as a full cover spray from when the first moth activity is noticed.
- Repeat application every 2 weeks.
- Reduce the spray interval to 7 days under conditions of rapid crop growth or high infestations of tuber moth larvae.
- Do ridging at least twice during the growing season of the crop.
- DO NOT exceed 5 applications of SAVAGE 360 SC on potatoes, to limit the development of resistance.
- SAVAGE 360 SC is compatible with COMMODOBUFF so as to buffer the spray mixture to assist in leaf penetration.

USE RATE†

Larvae of the potato tuber moth (Phthorimaea operculella):

- Apply 300 mℓ/ha SAVAGE 360 SC (in at least 500 ℓ spray mixture per hectare - ground application)
- Apply 400 mℓ/ha SAVAGE 360 SC (in 40 ℓ water per hectare - aerial application)

REGISTRATION DETAILS†

SAVAGE 360 SC
Active ingredient: Chlorfenapyr (pyrole) 360 g/ ℓ
Reg. No. L8533 Act 36 of 1947
(harmful)

COMMODOBUFF
Active ingredient: Organic acid and alkali 660g/ ℓ
Reg. No. L5390, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
1 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

TAMRON 585 SL

INSECTICIDE

Active ingredient: Methamidophos (organophosphate) 585 g/ℓ
(Reg No. L8251, Act 36 of 1947)

A water-soluble concentrate, contact and systemic insecticide for the control of insect pests on potatoes.



Features

- TAMRON 585 SL is an IRAC group code 1B insecticide.
- TAMRON 585 SL controls potato tuber moth larvae. *(Phthorimaea operculella)* and aphids in potatoes.
- Controls cutworm in Western Cape only.
- TAMRON 585 SL has both systemic and contact action.
- Simultaneous control of aphids and potato tuber moth.
- Fast knockdown action.
- Rarely bio accumulates or causes major environmental effects.
- Aerial registration.

Do's and don'ts

- Apply preventatively at 10 to 14-day intervals.
- Ridge at least twice during the growing season.
- TAMRON 585 SL may not control the peach aphid *(Myzus persicae)* in certain areas where organophosphates resistance is common.

USE RATE†

Aphids
- 50 mℓ/100 ℓ water in 200 ℓ to 500 ℓ water per hectare (ground application).
- 250 mℓ per hectare (aerial application).

Tuber moth larvae
- 100 mℓ/100 ℓ water in 200 ℓ to 500 ℓ water per hectare (ground application).
- 500 mℓ per hectare (aerial application)

REGISTRATION DETAILS†
TAMRON 585 SL
Active ingredient: Methamidophos (organophosphate) 585g/ℓ
Reg. No. L8251, Act 36 of 1947
(toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5ℓ and 20ℓ

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WINFIELD® UNITED

TRIMPLE 1110 AL

INSECTICIDE

Active ingredient: 1,3 Dichloropropene 1110 g/ℓ
(Reg. No. L9224, Act 36 of 1947)

A flowable fumigant for the control of plant parasitic nematodes in soil.



Features

- TRIMPLE 1110 AL is an IRAC group code 8A insecticide.
- TRIMPLE 1110 AL controls nematodes in potatoes.
- Registered for table and seed potatoes.
- Non residual liquid soil fumigant.
- AL Formulation – to be applied undiluted.
- Has secondary soil insect and fungal activity.
- Excellent fumigant activity at low soil temperatures.

Do's and don'ts

- Fumigant application is an essential part of a nematicide programme.
- Fill pumps and meters with new motor oil or a 50 % motor oil/fuel oil (two stroke oil) mixture, before storing. Do not use water.
- Soil temperature must not be below 6'C at application.
- Treat soil at least two weeks before planting.
- Apply to a well prepared, moist seedbed, free of debris and clods.
- Soil must be well sealed during application to avoid fumigant loss.
- A suitable tine or mouldboard plough should be used for application.
- Outlet depth should be at least 30cm below final soil surface.
- Tines must be spaced 30cm apart.

USE RATE†
- 100 ℓ per hectare undiluted

REGISTRATION DETAILS†
TRIMPLE 1110 AL
Active ingredient: 1,3 Dichloropropene 1110 g/ ℓ
Reg. No. L9224 Act 36 of 1947
(toxic)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
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Tel. (011) 396-2233

PACKAGING
50 ℓ

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WINFIELD® UNITED

TRIVIA 500 WDG

INSECTICIDE

Active ingredient: Pymetrozine (pyridine azomethine) 500 g/kg
(Reg. No. L9969, Act 36 of 1947)

A wettable dispersable granular systemic insecticide for the control of potato aphid *(Macrosiphum euphorbiae)* in potatoes.



USE RATE†
- 60 g/100 ℓ + CHARGE 40 mℓ / 100 ℓ.
- Apply in 500 to 1 000 ℓ water/Ha.

REGISTRATION DETAILS†
TRIVIA 500 WDG
Active ingredient: Pymetrozine (pyridine azomethine) 500 g/kg
Reg. No. L9969, Act 36 of 1947
(caution)

CHARGE
Active ingredient: Polyether-polymethylsiloxane-copolymer 1000 g/ℓ
Reg. No. L9100, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
1 kg

Features

- TRIVIA 500 WDG is an IRAC group code 9B insecticide.
- TRIVIA 500 WDG is an insecticide with a mode of action differing from most current insecticides.
- TRIVIA 500 WDG controls potato aphids *(Macrosiphum euphorbiae)* and green peach aphid *(Myzus persicae)* in potatoes.
- TRIVIA 500 WDG adversely affects the feeding of the aphid causing an immediate cessation of feeding.
- The insects stay alive for a few days after treatment, but are unable to feed and will die due to starvation.
- Toxicity towards birds, fish, earthworms, bacteria and bees is practically non-significant.
- TRIVIA 500 WDG will not have an adverse effect on natural predators.
- TRIVIA 500 WDG is especially suitable for inclusion in IPM programmes for control of sucking insects resistant to current insecticides.
- TRIVIA 500 WDG has a PHI of 7 days in potatoes.

Do's and don'ts

- Apply when aphids first appear, before populations reach damaging levels.
- Apply as a full cover application and ensure good coverage.
- The addition of a non-ionic surfactant to the spray mixture is recommended.
- To obtain optimum control of persistent aphid populations, a follow up application can be done 14 days after the first treatment.
- The addition of the adjuvant CHARGE, is essential to ensure good coverage.

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WINFIELD® UNITED

HERBICIDE

Trade name	Active Ingredient	Target Species
DISRUPT 200 SL	diquat (bipyridyl)	Haulm destruction
EPTC PLUS 720 SC	EPTC (thiocarbamate) , dichlormid (safener)	Nutsedges, annual grasses and certain broad-leaf weeds
HORNET 480 SL	bendioxide (thiadiazine)	Annual broad-leaved weeds and yellow nutsedge
PENTIUM 960 EC	s-metolachlor (chloroacetamide)	Annual grasses and certain broad-leaved weeds
SERIES 240 SC	clethodim	Grass weeds and volunteer maize
SKOFFEL 200 SUPER	paraquat (bipyridyl)	Haulm destruction

Click on product links above to get to more information on this product.

DISRUPT 200 SL

Active ingredient: Diquat (bipyridyl) 200 g/ℓ
(Reg. No. L9180, Act 36 of 1947)

A water-soluble herbicide for haulm destruction in potatoes.



Features

- DISRUPT 200 SL is a non-selective contact herbicide (HRAC herbicide group code D).
- DISRUPT 200 SL functions as a desiccant in potatoes (aimed at total haulm destruction).
- DISRUPT 200 SL has no residual action as it is inactivated rapidly on contact with the soil (DT50 ranged between 0.4 and 21 days).
- Extremely fast onset after application.
- Limits the development of resistance.
- Reduces the time from crop maturity to harvest, reduces the spread of late season pests and diseases, aids the planning and control of harvest timing and helps maintain crop quality during storage.
- The potential risk to leach into ground water is negligible.
- Rapid uptake by green plant parts (30 minutes after application), thus rainfast 30 minutes after application.

Do's and don'ts

- Do not apply if haulms show signs of wilting, as tuber damage may occur.
- Spray only if at least 5 hours sunshine is expected.
- Ensure good even coverage on the foliage before spraying
- Do not use muddy water.
- Avoid application equipment which results in formation of fine spray mist, i.e. mist blowers.
- Avoid drift onto adjacent crops, as green plant tissue will be damaged by the spray. (Do not spray buds or green parts of any crop).
- Do not spray in overcast weather.

ALWAYS READ THE LABEL

HERBICIDE

USE RATE†
Desiccation/Haulm destruction
- Apply 2.0 - 5.0 ℓ/ha DISRUPT 200 SL (Use 200 – 500 ℓ water per hectare).
- NB Add SUMMIT SUPER at 0.3 % (300 mℓ in 100 ℓ spray mixture) or VILLA 51 at 0.05 % (50 mℓ in 100 ℓ spray mixture) of the spray solution.

REGISTRATION DETAILS†
DISRUPT 200 SL
Active ingredient: Diquat (bipyridyl) 200 g/ℓ
Reg. No. L9180, Act 36 of 1947
(harmful)

VILLA 51
Active ingredient: Isotridecanol (alkylpolyethylene glycol ether) 918 g/ℓ
Reg. No. L8050, Act 36 of 1947
(harmful)

SUMMIT SUPER
Active ingredient: nitrogen solution/ non-ionic surfactant929 g/ℓ
Reg. No. L 8539 Act 36 of 1947 (caution)

Registration holder:
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PACKAGING
20 ℓ

EPTC PLUS 720 EC

Active ingredient: EPTC (thiocarbamate) 720 g/ℓ,
Dichlormid (safener) 76 g/ℓ
(Reg. No. L4504, Act 36 of 1947)

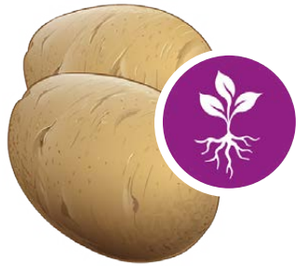
An emulsifiable concentrate herbicide with dichlormid, which must be incorporated into the soil, for the control of nutsedges, annual grasses and certain broadleaf weeds in potatoes.

Features

- EPTC PLUS 720 EC is an HRAC group code N15 Herbicide.
- EPTC PLUS 720 EC controls yellow and purple nutsedge as well as annual grasses and certain broad-leaf weeds in potatoes.
- Provides excellent control of *(Cyperus spp)*.
- Volatile liquid for fumigating the soil.
- Selective soil incorporated herbicide.
- Absorbed by germinating roots & shoots.
- Short residual activity.

Do's and don'ts

- Do not use above 30% clay.
- Apply to a well-prepared seedbed.
- Overall application at the recommended rates must be crossed disc mixed into the soil to a depth of 15cm and sealed by applying light pressure to the soil.
- Sealing must be done immediately after application, preferably on the same implement as the applicator, not with irrigation.



USE RATE†
- 3,5 – 5,3 ℓ/ha in 200 ℓ - 450 ℓ water (Depending on clay content).

REGISTRATION DETAILS†
EPTC PLUS 720 EC
Active ingredient: EPTC (thiocarbamate) 720 g/ℓ, dichlormid 76 g/ℓ
Reg. No. L4504, Act 36 of 1947
(harmful)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
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PACKAGING
20 ℓ

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WINFIELD® UNITED

HORNET 480 SL

HERBICIDE

Active ingredient: Bendioxide (thiadiazine) 480 g/ℓ
(Reg. No. L7708, Act 36 of 1947)

A selective contact soluble liquid herbicide for the post-emergence control of certain annual broad-leaved weeds and yellow nutsedge *(Cyperus esculentus)* in potatoes.

Cyperus esculentus (yellow nutsedge)

Tribulus terrestris (common dubbeltjie)
Variable control.

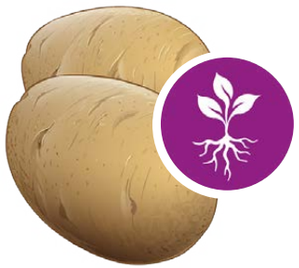
Portulaca oleracea (common purslane)

Features

- HORNET 480 SL is an HRAC group code C3 herbicide.
- HORNET 480 SL gives post-emergence control of yellow nutsedge and certain broadleaf weeds in potatoes.
- Selective contact liquid herbicide.
- Absorbed by foliage with little translocation in the plant.
- No residual action.
- Excellent control of morning glory *(Ipomoea pupurea)* and yellow nutsedge *(Cyperus esculentus)*.

Do's and don'ts

- Warm and humid weather (above 65% humidity) is required for optimal weed control. A decrease in efficacy can be expected under dry conditions.
- Apply at a rate of 2 ℓ/ha to 3 ℓ/ha in a minimum of 300 ℓ/ha.
- Apply only after the potato crop has fully emerged but before flower buds develop.
- Only for use on Up To Date, BPI and Van der Plank.
- HORNET 480 SL may cause temporary leaf burn but will not affect the yield.
- Ensure good coverage.
- HORNET 480 SL does not control Cape pigweed *(Amaranthus hybridus)*.



USE RATE†
- 2 ℓ/ha - 3 ℓ/ha PLUS a suitable wetter / spreader adjuvant.

REGISTRATION DETAILS†
HORNET 480 SL
Active ingredient: bendioxide (thiadiazine) 480 g/ℓ
Reg. No. L7708, Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
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PACKAGING
5 ℓ

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WINFIELD® UNITED

PENTIUM 960 EC

Active ingredient: s-metolachlor (chloroacetamide) 960 g/ℓ
(Reg. No. L9830, Act 36 of 1947)

A pre-emergence emulsifiable concentrate herbicide for the control of most annual grasses and certain broad-leaved weeds in potatoes.




Features

- PENTIUM 960 EC is a pre-emergence herbicide of the HRAC group K3.
- Compatible with a wide range of registered products.
- Both ground and aerial application registrations.
- Can also be used as an early post- emergence herbicide in potatoes.

Do's and don'ts

- Apply 1.2 litres per hectare, under dry land conditions, pre-emergence to potatoes and weeds, after the first summer rains.
- PENTIUM 960 EC is a pre-emergence herbicide. However, for early post weed emergence apply 1.2 litres per hectare under dry land conditions, after the first summer rains in a tank mixture with SKOFFEL® 145 SL at 1 to 2 litres per hectare.
- PENTIUM 960 EC / SKOFFEL® 145 SL mixtures must not be applied after 10 % potato emergence.
- A rate of 1.0 litres per hectare PENTIUM 960 EC can be applied under irrigation.
- PENTIUM 960 EC can also be applied post-emergence to the potatoes after ridging.
- 10-20 mm rain within 7-10 days after application is necessary for good results, but flood rains /irrigation may reduce efficacy.
- Do not apply PENTIUM 960 EC to poorly drained or compact soils.

HERBICIDE

USE RATE†
Pre-emergence application
- 1.2 ℓ/ha PENTIUM 960 EC

REGISTRATION DETAILS†
PENTIUM 960 EC
Active ingredient: s-metolachlor (chloroacetamide) 960 g/ℓ
Reg. No. L9830, Act 36 of 1947
(harmful)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

SKOFFEL 200 SUPER
Active ingredient: Paraquat 200 (bipyridyl) g/ℓ
Reg. No. L6328, Act 36 of 1947
(toxic)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ, 10 ℓ

ALWAYS READ THE LABEL

SERIES 240 EC

HERBICIDE

Active ingredient: Clethodim (cyclohexanedione) 240 g/ℓ
(Reg. No. L8913, Act 36 of 1947)

A selective systemic herbicide for post-emergence control of grass weeds and volunteer maize (including glyphosate tolerant maize) in potatoes.

Features

- SERIES 240 EC is an HRAC group code A herbicide.
- Selective, systemic, post emergence grass herbicide.
- SERIES 240 EC controls volunteer glyphosate tolerant maize and some annual grasses in potatoes.
- High 240 g/ℓ active ingredient load.
- Excellent range of annual grasses controlled.

Do's and don'ts

- Do not use with paraquat as clethodim needs time to be absorbed by the leaf cuticles to be translocated.
- Take note of the weed's growth stages for optimal efficacy.
- The use of oil adjuvants and ammonium sulphate enhances efficacy.
- Good coverage with at least 200 ℓ/ha water is necessary.
- Rain within 1 hour of application may require a repeat application.

USE RATE†
- 0,5 ℓ to 1,0 ℓ per hectare with adjuvants and water conditioners applied in 200 ℓ water.

REGISTRATION DETAILS†
SERIES 240 EC
Active ingredient: Clethodim (cyclohexanedione) 240 g/ℓ
Reg. No. L8913, Act 36 of 1947 (caution)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
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PACKAGING
5 ℓ

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WINFIELD® UNITED

SKOFFEL® 200 SUPER

Active ingredient: Paraquat ion (bipyridyl) 200 g/ℓ
(Reg. No. L6328, Act 36 of 1947)

A water-soluble herbicide for haulm destruction in potatoes.



Features

- SKOFFEL® 200 SUPER is a non-selective contact herbicide (HRAC herbicide group code D).
- SKOFFEL® 200 SUPER functions as a desiccant in potatoes (aimed at total haulm destruction).
- SKOFFEL® 200 SUPER has no residual action as it is inactivated rapidly on contact with the soil (DT50 ranged between 0.4 and 21 days).
- Extremely fast onset after application.
- Limits the development of resistance.
- Reduces the time from crop maturity to harvest; reduces the spread of late season pests and diseases aids the planning and control of harvest timing and helps maintain crop quality during storage.
- The potential risk to leach into ground water is negligible.
- Rapid uptake by green plant parts (30 minutes after application), thus rainfast 30 minutes after application.

Do's and don'ts

- Do not apply if haulms show signs of wilting, as tuber damage may occur.
- Spray only if at least 5 hours sunshine is expected.
- Ensure good even coverage on the foliage before spraying.
- Do not use muddy water.
- Avoid application equipment which results in formation of fine spray mist, i.e. mist blowers.
- Avoid drift onto adjacent crops, as green plant tissue will be damaged by the spray. (Do not spray buds or green parts of any crop).

HERBICIDE

USE RATE†
- Apply 2.5 - 5.0 ℓ/ha SKOFFEL® 200 SUPER (Use 200 – 500 ℓ water per hectare)
- NB Add SUMMIT SUPER at 0.3 % (300 mℓ in 100 ℓ spray mixture) or VILLA 51 at 0.05 % (50 mℓ in 100 ℓ spray mixture) of the spray solution.

REGISTRATION DETAILS†
SKOFFEL 200 SUPER
Active ingredient: Paraquat ion (bipyridyl) 200 g/ℓ
Reg. No. L6328, Act 36 of 1947
(toxic)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

VILLA 51
Active ingredient: Isotridecanol (alkylpolyethylene glycol ether) 918 g/ℓ
Reg. No. L8050, Act 36 of 1947
(harmful)

Registration holder:
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PACKAGING
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WINFIELD® UNITED

FUNGICIDE

Trade name	Active Ingredient	Target Species
ACADEMY 250 SC	picoxystrobin (strobilurin)	Early blight
ARIA 188 SC	carbendazim (benzimidazole), difenoconazole (triazole)	Early blight
CENTRAL 500 SC	azoxystrobin (strobilurine), cymoxanil (cyanoacetamide-oxime)	Late blight
DIMETHOZEB 690 WP	dimethomorph (cinnamic acid derivative), mancozeb (dithiocarbamate)	Late blight
KOCIDE® 2000	copper hydroxide	Early blight
MISSION 720 SC	chlorothalonil (phthalonitrile)	Early blight and late blight
MYCOBLOCK 250 SC	azoxystrobin (strobilurin)	Early blight
TYPHOON 250 SC	procymidone (dicarboximide)	Early blight
UNIZEB 750 WDG	mancozeb (dithiocarbamate)	Early blight and late blight
UNIZEB 800 WP	mancozeb (dithiocarbamate)	Early blight and late blight

Click on product links above to get to more information on this product.

ACADEMY 250 SC

Active ingredient: Picoxystrobin (strobilurin) 250 g/ℓ
(Reg. No. L10034, Act 36 of 1947)

A suspension concentrate, systemic and translaminar action fungicide for the preventative control of early blight *(Alternaria solani)* in potatoes.



Features

- ACADEMY 250 SC is a FRAC group code 11 fungicide.
- ACADEMY 250 SC controls early blight *(Alternaria solani)* in potatoes.
- A new superior strobilurin fungicide.
- Provides excellent preventative and curative activity against early blight.
- Ideal mixing partner for mancozeb (VILLA UNIZEB 750 WDG) and chlorotalonil (MISSION 720 SC).
- Aerial application registration.

Do's and don'ts

- Start with a weekly programme application one week after the potatoes have emerged.
- Use alternative effective fungicides as registered on potatoes up to week 5 in a 7 day spray interval.
- Apply ACADEMY 250 SC at 14 day intervals during week 5, 7 and 9 alternated with either mancozeb containing fungicides or MISSION 720 SC during week 6, 8 and 10.
- Revert back to alternative effective fungicides in a 7-day spray programme until such time when disease control is no longer required .
- DO NOT apply more than three ACADEMY 250 SC applications per growing season.

USE RATE†
- Potatoes: 300mℓ/ha plus 50 mℓ/100 ℓ water LINK
- Apply in 500 ℓ water per hectare (ground application) and 30-50 ℓ per hectare (aerial application)

REGISTRATION DETAILS†
ACADEMY 250 SC
Active ingredient: Picoxystrobin (strobilurin) 250 g/ℓ
Reg. No. L10034, Act 36 of 1947
(harmful)

MISSION 720 SC
Active ingredient: Chlorothalonil (phthalonitrile) 720 g/ℓ
Reg. No. L8432, Act 36 of 1947
(caution)

VILLA UNIZEB 750 WDG
Active ingredient: Mancozeb (dithiocarbamate) 7350 g/kg
Reg. No. L8812 Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
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PACKAGING
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WINFIELD® UNITED

FUNGICIDE

ARIA 188 SC

Active ingredient: Carbendazim (benzimidazole) 125 g/ℓ, difenoconazole (triazole) 62.5 g/ℓ
(Reg. No. L7943, Act 36 of 1947)

A suspension concentrate, systemic fungicide mixture for the preventative control of early blight *(Alternaria solani)* in potatoes.



Features

- ARIA 188 SC is a FRAC group code 1 and 3 fungicide.
- ARIA 188 SC controls early blight *(Alternaria solani)* in potatoes.
- Two active ingredients for efficacy and resistance management.
- Multiple sights of action activity.
- Preventative and curative action.
- Excellent systemic and translaminar movement of actives.
- Aerial application registration.

Do's and don'ts

- Commence applications immediately before flowering (or earlier if the disease starts to develop) and continue until the plants start to senescence (end of flower drop).
- For low early blight pressure areas and where other diseases are not a problem: Apply ARIA 188 SC at 14-day intervals.
- For moderate to heavy early blight pressure areas and/or where other diseases need to be controlled: - Alternate every 7 days between ARIA 188 SC and a suitable broad-spectrum fungicide (e.g. mancozeb, chlorothalonil or copper). Commence applications during the flowering stages (about 8 weeks after planting) or earlier if the disease starts to develop.
- Ensure complete coverage of the entire plant mass with spray mixture, at all times.
- ARIA 188 SC does not control late blight *(Phytophthora infestans).*

USE RATE†
- 1.2 ℓ/ha plus a suitable wetter / penetrating adjuvant.

REGISTRATION DETAILS†
ARIA 188 SC
Active ingredient: Carbendazim (benzimidazole) 125 g/ℓ difenoconazole (triazole) 62.5 g/ℓ
Reg. No. L7943, Act 36 of 1947 (caution)

Registration holder:
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WINFIELD® UNITED

CENTRAL 500 SC

Active ingredient: Azoxystrobin (strobilurine) 150 g/ℓ
& cymoxanil (cyanoacetamide-oxime) 350 g/ℓ
(Reg. No. L10289, Act 36 of 1947)

A suspension concentrate preventive fungicide for the control of late blight *(Phytophthora infestans)* on potatoes.



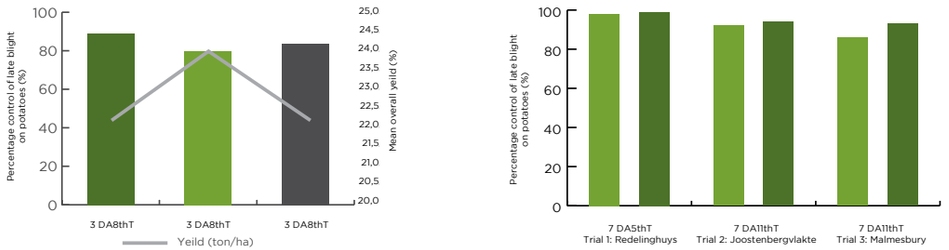



Fig 1.: Summary of 3 trials performed in Redelinghuys, Joostenbergvlakte and Malmesbury, Western Cape (2014) showing the performance of Central 500 SC, applied as part of a 12 spray program, at controlling late blight in potatoes. The graph shows the mean overall percentage control of late blight in potatoes at specific times (days) after an application within the program

Fig 1.1 :Summary of a trial performed in Merrivale, Kwa-Zulu Natal (2011) showing the performance of Central 500 SC when applied in a 10 spray program, as stated on the label. The graph shows both the percentage control of late blight (Phytophthora infestans) in potatoes as well as the yield differences in tonnes per hectare (ton/ha)

ALWAYS READ THE LABEL

FUNGICIDE

USE RATE†
Late Blight *(Phytophthora infestans)*
- 0.5 ℓ CENTRAL 500 SC per hectare

Week 1 – 5
- Use alternative effective fungicides as registered on potatoes up to week 5 after emergence in 7-day spray intervals

Week 7 – 11
- Apply CENTRAL 500 SC at 14-day intervals during week 6, 8 and 10 alternated with either mancozeb or chlorothalonil containing fungicides, during week 7, 9 and 11.

Week 11 and up
- Revert back to alternative effective fungicides in a 7-day spray program until such time when disease control is not required anymore

REGISTRATION DETAILS†
CENTRAL 500 SC
Active ingredient: Azoxystrobin (strobilurine) 150 g/ℓ, and cymoxanil (cyanoacetamide-oxime) 350 g/ℓ
Reg. No. L10289 Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ

CENTRAL 500 SC

Active ingredient: Azoxystrobin (strobilurine) 150 g/ℓ
& cymoxanil (cyanoacetamide-oxime) 350 g/ℓ
(Reg. No. L10289, Act 36 of 1947)

A suspension concentrate preventive fungicide for the control of late blight *(Phytophthora infestans)* on potatoes.

Features

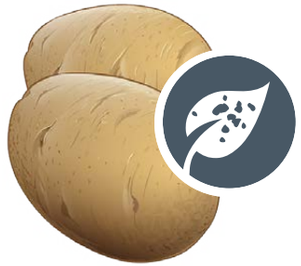
- CENTRAL 500 SC is a locally systemic fungicide with both preventative as well as curative action (FRAC fungicide group code 27 and 11).
- CENTRAL 500 SC is a unique formulation of two active ingredients, cymoxanil (cyanoacetamideoxime) and azoxystrobin (strobilurin) both with different modes of action.
- Strobilurin (QoI's) fungicides are known for improving plants ability to assimilate CO_2 and hereby enhancing the photosynthesis process (greening effect).
- Cymoxanil is considered to be one of the most systemic compounds on the market, making it perfect for curative control of late blight (from infestation up to before symptom expression).
- Ideal candidate as an anti-resistance management tool, when sprayed in a program with other products with varying modes of action.
- Position specifically during tuber initiation and growth (7, 9 and 11 weeks after emergence) and alternate it with a contact fungicide (Chlorothalonil or Mancozeb) for optimal control of late blight.
- Synergism between actives provides better residual control than the solo strobilurine and cyanoacetamide-oxime compounds in one ready formulated product.
- CENTRAL 500 SC has a PHI of 7 days in potatoes.

Do's and don'ts

- Do not use on hydroponical or container-grown crops.
- Do not apply CENTRAL 500 SC when potatoes are under severe drought or fertility stress conditions, as uptake and activity may be reduced.
- If rain occurs within 2 hours after treatment, the products performance may be affected.
- Apply in sufficient water per hectare for thorough coverage.
- Use CENTRAL 500 SC in a preventive spray programme alternating with registered fungicides from unrelated mode of action groups (thus not Groups 27 or 11).
- Do not apply more than three CENTRAL 500 SC applications per growing season.
- It is advisable to start the spray programme not later than one week after potato plants have emerged and apply preventatively at 7 day intervals.

ALWAYS READ THE LABEL

FUNGICIDE



USE RATE†

Late Blight *(Phytophthora infestans)*
- 0.5 ℓ CENTRAL 500 SC per hectare

Week 1 – 5
- Use alternative effective fungicides as registered on potatoes up to week 5 after emergence in 7-day spray intervals

Week 7 – 11
- Apply CENTRAL 500 SC at 14-day intervals during week 6, 8 and 10 alternated with either mancozeb or chlorothalonil containing fungicides, during week 7, 9 and 11.

Week 11 and up
- Revert back to alternative effective fungicides in a 7-day spray program until such time when disease control is not required anymore

REGISTRATION DETAILS†
CENTRAL 500 SC
Active ingredient: Azoxystrobin (strobilurine) 150 g/ℓ, and cymoxanil (cyanoacetamide-oxime) 350 g/ℓ
Reg. No. L10289 Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ

DIMETHOZEB 690 WP

Active ingredient: Dimethomorph (cinnamic acid derivative) 90 g/kg
mancozeb (dithiocarbamate) 600 g/kg
(Reg. No. L7985, Act 36 of 1947)

A wettable powder fungicide with preventive and local systemic properties for the control of late blight *(Phytophthora infestans)* in potatoes.



Features

- DIMETHOZEB 690 WP is a FRAC group code 40 and M3 fungicide.
- DIMETHOZEB 690 WP controls late blight *(Phytophthora infestans)* in potatoes.
- Two active ingredients for efficacy and resistance management.
- Multiple sights of action.
- Preventative and curative action.
- Provides good protection under high disease pressure.

Do's and don'ts

- Apply DIMETHOZEB 690 WP at least once in every 4-week period, even during low disease pressure.
- Reduce the spray interval to 7 days, when conditions of rapid crop growth overlaps with environmental conditions, favourable for development of the disease.
- DIMETHOZEB 690 WP should be used in a programme with alternative fungicides for the control of early blight *(Alternaria solani)*.
- Ensure complete coverage of the entire plant mass with spray mixture, at all times.
- Should be used in a preventive spray programme and be applied during the early part of the season, when protection at the flowering and early fruit formation stages is critical.

ALWAYS READ THE LABEL

FUNGICIDE

USE RATE†
- 2 kg / ha plus a suitable wetter / penetrating adjuvant.

REGISTRATION DETAILS†
DIMETHOZEB 690 WP
Active ingredient: dimethomorph (cinnamic acid derivative) 90 g/kg
mancozeb (dithiocarbamate) 600 g/kg
Reg. No. L7985, Act 36 of 1947
(caution)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

PACKAGING
10 kg

FUNGICIDE

KOCIDE® 2000

Active ingredient: copper hydroxide 538 g/kg, copper equivalent 250 g/kg (Reg. No. L7805, Act 36 of 1947)

A water dispersible granule contact fungicide and bactericide to control early blight *(Alternaria solani)* in potatoes.



Features

- KOCIDE® 2000 is a FRAC Group Code M1 Fungicide.
- KOCIDE® 2000 controls early blight *(Alternaria solani)* in potatoes.
- KOCIDE® 2000 is tenacious and persists on the leaf surface for prolonged protection.
- KOCIDE® 2000 is a preventative contact fungicide.
- Copper Hydroxide is the most effective source of copper ions for disease control.
- 50% reduction in metallic copper applied per hectare.
- KOCIDE® 2000 mixes and handles easily and can be measured out by weight or volume.
- KOCIDE® 2000 is highly compatible with other chemicals.
- Less likely to give rise to phytotoxicity.

Do's and don'ts

- Do not acidify a spray solution containing KOCIDE® 2000.
- Use KOCIDE® 2000 in a resistance management programme together with other contact and systemic fungicide groups.
- Spray before or just when the first disease symptoms are noticed. Repeat at 7-10 day intervals and after rain.
- Depending on plant size use 500-1 500 ℓ spray mixture per hectare.
- Always apply as a full cover spray.

USE RATE†
- 150g / 100 ℓ water to a maximum of 2,25 kg/ha.

REGISTRATION DETAILS†
KOCIDE® 2000
Active ingredient: copper hydroxide 538 g/kg
Reg. No. L7805, Act 36 of 1947 (caution)

Registration holder:
Mitsui & Co
Europe Plc, Johannesburg Branch
PO Box 652948,
Benmore 2010

PACKAGING
10 kg

ALWAYS READ THE LABEL

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WINFIELD® UNITED

MISSION 720 SC

Active ingredient: Chlorothalonil (phthalonitrile) 720 g/ℓ
(Reg. No. L8432, Act 36 of 1947)

A suspension concentrate contact fungicide for the preventative control of early blight *(Alternaria solani)* and late blight *(Phytophthora infestans)* disease on potatoes.

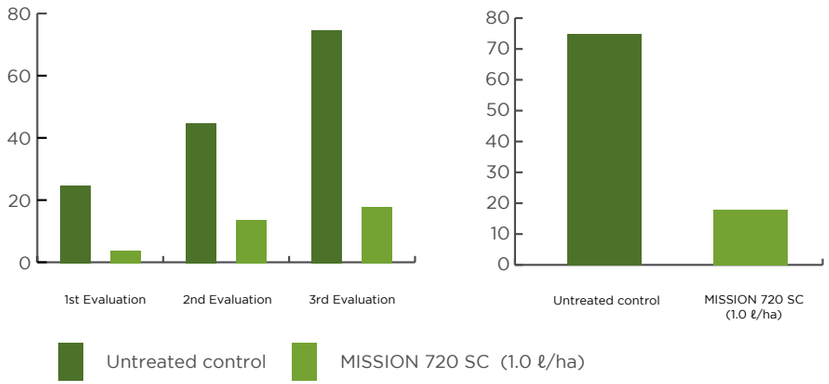


Fig 1.1 (left): Summary of a trial done in the, Karkloof, KwaZulu-Natal area (2015) showing the performance of MISSION 720 SC at controlling late blight (Phytohpthera infestans) on potatoes at 3 consecutive evaluations after spray programme

Fig 1.2 (right): The graph shows the overall percentage of late blight leaf blighting on the potato plants after 3 evaluations, hence showing a 76.67% increase in late blight control

USE RATE†
Early blight *(Alternaria spp.)* and late blight *(Phytohpthera infestans)*
- Low infection: 0.7 - 1.0 ℓ per ha MISSION 720 SC (ground application) and 1 ℓ per ha (aerial application)
- High infection: 2 ℓ per ha MISSION 720 SC (ground application) and 2 ℓ per ha (aerial application)
- Centre pivot application: 2 ℓ per ha MISSION 720 SC

REGISTRATION DETAILS†
MISSION 720 SC
Active ingredient: Chlorothalonil (phthalonitrile) 720 g/ℓ
Reg. No. L8432, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ, 20 ℓ

ALWAYS READ THE LABEL

villa | www.villacrop.co.za

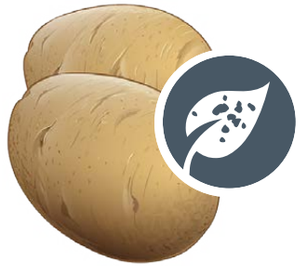
WINFIELD® UNITED

MISSION 720 SC

FUNGICIDE

Active ingredient: Chlorothalonil (phthalonitrile) 720 g/ℓ
(Reg. No. L8432, Act 36 of 1947)

A suspension concentrate contact fungicide for the preventative control of early blight *(Alternaria solani)* and late blight *(Phytophthora infestans)* disease on potatoes.



Features

- MISSION 720 SC reduces fungal intracellular glutathione molecules to different forms that cannot participate in essential enzymatic reactions, ultimately leading to cell death (FRAC fungicide group code M).
- MISSION 720 SC is a contact fungicide with protective activity.
- No crop damage on potatoes even at double dosages.
- The active is evenly distributed in the spray mix and can be easily mixed with other systemic products.
- Preventative disease protection with multi-site activity limits resistance development to MISSION 720 SC.
- Excellent tank mix partner with numerous Villa registered products.
- MISSION 720 SC controls both early and late blight, thus making it a vital part of many preventative spray programmes.
- MISSION 720 SC has a PHI of 3 days in potatoes.

Do's and don'ts

- Use at least 500 ℓ water per hectare (ground application).
- Use lower dosage under dry land conditions.
- Repeat application weekly, with higher dosage rate to be applied every 10 days.
- Use at least 30 ℓ water per ha (all aerial applications).
- Repeat at 5 - 7 day intervals under high infection pressure.
- Commence spray programme 14 days after emergence.
- Do not allow more than 10 days between applications.
- Continue treatment until plant parts above soil start dying back.
- Ensure complete coverage of targeted plants.
- Always shake MISSION 720 SC thoroughly before use.

USE RATE†

Early blight *(Alternaria spp.)* and late blight *(Phytohpthera infestans)*

- Low infection: 0.7 - 1.0 ℓ per ha MISSION 720 SC (ground application) and 1 ℓ per ha (aerial application)
- High infection: 2 ℓ per ha MISSION 720 SC (ground application) and 2 ℓ per ha (aerial application)
- Centre pivot application: 2 ℓ per ha MISSION 720 SC

REGISTRATION DETAILS†

MISSION 720 SC
Active ingredient: Chlorothalonil (phthalonitrile) 720 g/ℓ
Reg. No. L8432, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ, 20 ℓ

ALWAYS READ THE LABEL

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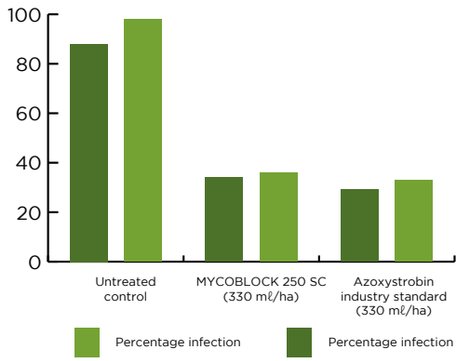
WINFIELD® UNITED

MYCOBLOCK 250 SC

Active ingredient: Azoxystrobin (strobilurin) 250 g/ℓ
(Reg. No. L8591, Act 36 of 1947)

A suspension concentrate, systemic fungicide with contact and translaminar action for the preventative control of early blight *(Alternaria solani)* disease in potatoes.



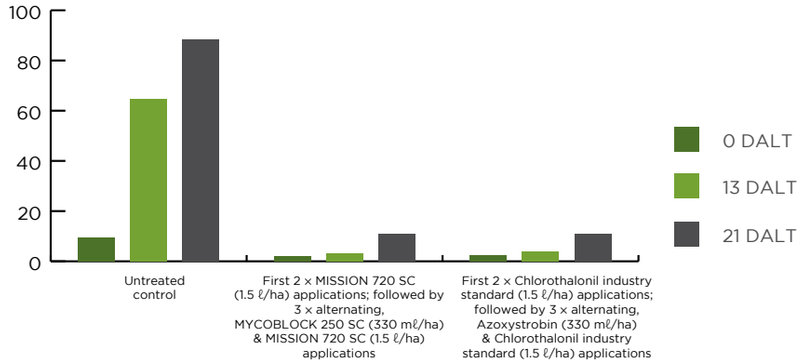


Fig 1.1 (top): Summary of a trial performed in Hartebeespoort, North West Province (2008) showing the performance of three MYCOBLOCK 250 SC applications at controlling early blight (Alternaria infestans) in potatoes. The graph shows the mean infection percentage (%), as seen by blight lesions on the potato plants, at eight days after the first treatment (8 DA1stT) and seven days after the third and final treatment (7 DA3rdT) respectively.

Fig 1.2 (bottom): Summary of a trial performed in Nelspruit, Mpumalanga (2008) showing the performance of MYCOBLOCK 250 SC sprayed in a programme with MISSION 720 SC (8 respective applications a week apart) at controlling Early blight (Alternaria infestans) in potatoes. The graph shows the intensity of early blight attack at 0, 13 and 21 days after the last treatments respectively.

ALWAYS READ THE LABEL

FUNGICIDE

USE RATE†
Early blight *(Alternaria solani)*
- Apply 300 mℓ /ha (Ground application)
- Apply 330 mℓ /ha (Aerial application)NB: Do not spray if disease is established.

REGISTRATION DETAILS†
MYCOBLOCK® 250 SC
Active ingredient: Azoxystrobin 250 g/ℓ
Reg. No. L8591, Act 36 of 1947
(caution)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

SANTANA 480 SC
Active ingredient: Prothioconazole (triazole) 480 g/lReg. No. L10049 Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Co. Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

DIRECT
Active ingredient: polyether-polymethylsiloxane-copolymer (300 g/ℓ) and vegetable oil 650 g/ℓ
Reg. No. L8680, Act 36 of 1947
(caution)

Registration holder:
Winfield Solutions Registration Holdings (Pty) Ltd.
Reg. No. 2015/312008/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
4 ℓ

MYCOBLOCK 250 SC

Active ingredient: Azoxystrobin (strobilurin) 250 g/ℓ
(Reg. No. L8591, Act 36 of 1947)

A suspension concentrate, systemic fungicide with contact and translaminar action for the preventative control of early blight *(Alternaria solani)* disease in potatoes.

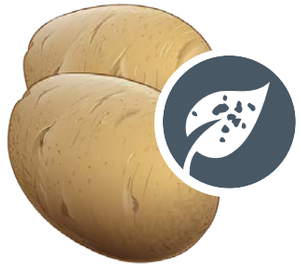
Features

- MYCOBLOCK® 250 SC prevents the respiration of fungi by disrupting the electron transport chain and ATP synthesis (FRAC fungicide group code 11).
- MYCOBLOCK® 250 SC shows both systemic and translaminar movement within the plant.
- MYCOBLOCK® 250 SC is primarily a preventative product but also shows anti-sporulant activity therefore reducing reinfection.
- Inhibits mitochondrial respiration by blocking electron transfer within the fungi, resulting in slower development of the fungi.
- MYCOBLOCK® 250 SC is an excellent product for use in combination with other products in a programme for the control of early-blight.
- Strobilurin (QoI's) fungicides are known for improving plants ability to assimilate CO_2 and hereby enhancing the photosynthesis process resulting in "green for longer" effects.
- MYCOBLOCK 250 SC has a PHI of 7 days in potatoes.

Do's and don'ts

- Commence application before infestation – PREVENTATIVE; or if conditions favorable for Early blight *(Alternaria solani)* development occurs.
- Do not apply more than three MYCOBLOCK® 250 SC sprays per season.
- Always alternate with or use in combination with D-ZOLE 250 EC.
- Do not mix MYCOBLOCK® 250 SC with any heavy metal containing products.
- Do not apply MYCOBLOCK 250 SC as the first or last treatment in the spray programme.

FUNGICIDE



USE RATE†
Early blight *(Alternaria solani)*
- Apply 300 mℓ/ha in >500 ℓ/ha water volume (ground application).
- Apply 330 mℓ/ha in 30 ℓ-40 ℓ/ha water volume (aerial application).
NB: Do not spray if disease is established.

REGISTRATION DETAILS†
MYCOBLOCK® 250 SC
Active ingredient: Azoxystrobin 250 g/ℓ
Reg. No. L8591, Act 36 of 1947
(caution)

Registration holder:
Universal Crop Protection (Pty) Ltd.
Reg. No. 1983/008184/07
PO Box 801, Kempton Park, 1620.
Tel. (011) 396-2233

SANTANA 480 SC
Active ingredient: Prothioconazole (triazole) 480 g/lReg. No. L10049 Act 36 of 1947
(harmful)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Co. Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

DIRECT
Active ingredient: polyether-polymethylsiloxane-copolymer (300 g/ℓ) and vegetable oil 650 g/ℓ
Reg. No. L8680, Act 36 of 1947
(caution)

Registration holder:
Winfield Solutions Registration Holdings (Pty) Ltd.
Reg. No. 2015/312008/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
4 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

TYPHOON 250 SC

Active ingredient: Procymidone (dicarboximide) 250 g/ℓ
(Reg. No. L8397, Act 36 of 1947)

A suspension concentrate systemic fungicide with translaminar action for the control of early blight *(Alternaria solani)* on potatoes.




Features

- TYPHOON 250 SC is a FRAC group code 2 fungicide.
- Inhibits the cell wall functionality of plant cells.
- TYPHOON 250 SC controls early blight *(Alternaria solani)* in potatoes.
- Systemic fungicide with protective and curative properties.
- Absorbed through the roots, with translocation to leaves and flowers.
- Flexible application options (can be applied via a ground rig as well as aerially).
- Compatibility with numerous fungicides used to control early blight (i.e. VILLA UNIZEB 750 WDG).
- Flexible usage of TYPHOON 250 SC makes it an ideal partner in programmes specifically used to target early bight control.

Do's and don'ts

- Apply as part of a spray programme to avoid the development of resistance.
- Use sufficient spray mixture to obtain good coverage of the plants.
- Use the higher dosage rate if the infection is severe.
- Add VILLA UNIZEB 750 WDG in the mixture to provide good protection against early blight *(Alternaria solani)* disease.
- Efficacy of TYPHOON 250 SC may be reduced by water with a high pH as well as hard water (>1000 ppm solutes).
- Optimum efficacy of TYPHOON 250 SC is obtained at a pH of 4.5 to 5.5

USE RATE†
- 0,5 – 1,0 ℓ TYPHOON 250 SC per 100ℓ water + 2,0 kg/ha VILLA UNIZEB 750 WDG. Apply in 500 ℓ to 750 ℓ water (ground application).
- 0,6 – 1,2 ℓ TYPHOON 250 SC per 100ℓ water + 2,0 kg/ha VILLA UNIZEB 750 WDG. Apply in 30 ℓ to 40 ℓ water (aerial application).

REGISTRATION DETAILS†
TYPHOON 250 SC
Active ingredient: Procymidone (dicarboximide) 250 g/ℓ
Reg. No. L8397, Act 36 of 1947
(harmful)

VILLA UNIZEB 750 WDG
Active ingredient: Mancozeb (dithiocarbamate) 7350 g/kg
Reg. No. L8812 Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

VILLA UNIZEB 750 WDG

Active ingredient: Mancozeb (dithiocarbamate) 750 g/kg
(Reg. No. L8812, Act 36 of 1947)

A waterdispersable granular fungicide for the prevention and control of early blight *(Alternaria solani)* and late blight *(Phytophthora infestans)* on potatoes.




Features

- VILLA UNIZEB 750 WDG is a FRAC group code M3 fungicide.
- VILLA UNIZEB 750 WDG controls early blight *(Alternaria solani)* and late blight *(Phytophthora infestans)* on potatoes.
- Contact action, with excellent preventative action.
- Aerial application registration.
- Low toxicity to most non-target & beneficial insects.
- Additional source of magnesium and zinc as trace nutrients.
- Dust free wettable granular formulation.

Do's and don'ts

- Do not use with alkaline products, e.g. lime sulphur and Bordeaux mixture.
- Apply as a preventative application at 7 to 10 day intervals.
- Re-apply after rainfall.

USE RATE†
- 2 kg to 3 kg per hectare.
- Apply in 1 000 ℓ spray mixture per hectare

REGISTRATION DETAILS†
VILLA UNIZEB 750 WDG
Active ingredient: Mancozeb (dithiocarbamate) 7350 g/kg
Reg. No. L8812 Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
10 kg

ALWAYS READ THE LABEL

villa | www.villacrop.co.za

WINFIELD® UNITED

VILLA UNIZEB 800 WP

Active ingredient: Mancozeb (dithiocarbamate) 800 g/kg
(Reg. No. L8056, Act 36 of 1947)

A wettable powder fungicide for the prevention and control of early blight *(Alternaria solani)* and late blight *(Phytophthora infestans)* on potatoes.




Features

- VILLA UNIZEB 800 WP is a FRAC group code M3 fungicide.
- VILLA UNIZEB 800 WP controls early blight *(Alternaria solani)* and late blight *(Phytophthora infestans)* on potatoes.
- Contact only, with excellent preventative action.
- Aerial application registration.
- Low toxicity to most non-target & beneficial insects.
- Additional source of magnesium and zinc as trace nutrients.

Do's and don'ts

- Do not use with alkaline products, e.g. lime sulphur and Bordeaux mixture.
- Do not allow VILLA UNIZEB 800 WP to be exposed to damp and then warm conditions.
- May generate flammable vapours under these conditions.
- Apply preventively at 7 to 10 day intervals.

FUNGICIDE

USE RATE†
- 2 kg to 3 kg per hectare.
- Apply in 1 000 ℓ spray mixture per hectare

REGISTRATION DETAILS†
VILLA UNIZEB 800 WP
Active ingredient: Mancozeb (dithiocarbamate) 800 g/kg
Reg. No. L8056, Act 36 of 1947 (caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
25 kg

ALWAYS READ THE LABEL

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WINFIELD® UNITED

ADJUVANT

Trade name	Active Ingredient	Target Species
AQUABUFF PLUS	Mixed organic buffer system and alcohol ethoxylate surfactant	A pH buffer with wetting and spreading properties for use with alkaline-sensitive agro-chemicals or agro-chemicals that require the use of a buffer.
COMMODOBUFF	orgnic acid and alkali	Buffering agent for correction of pH.
DIRECT	polyether-polymethylsiloxane-copolymer and vegetable oil	Direct is a non-ionic adjuvant with spreading and penetrating properties for use with postemergence crop protection product applications, especially fungicides.
INTERLOCK	Vegetable oils, polyoxy ethylene fatty acid esters	A deposition-agent adjuvant that improves spray deposition and canopy penetration while reducing spray drift and evaporation of spray droplets.

Click on product links above to get to more information on this product.

AQUABUFF PLUS

Active ingredient: Organic acid and alkali 660 g/ℓ
(Reg. No. L5451, Act 36 of 1947)

A buffering agent for the correction of water pH in alkaline or very acidic spray mixtures of pesticides.

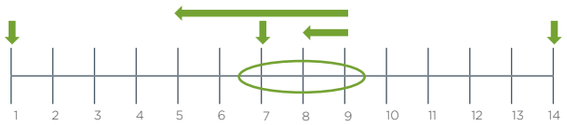


Figure 1: pH-Scale

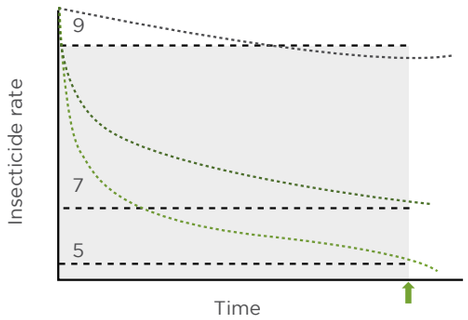


Figure 2: Alkaline hydrolysis

Features

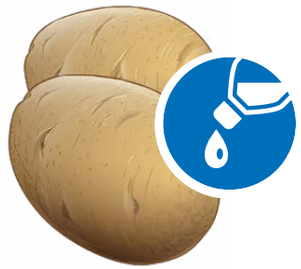
- Used mainly to decrease alkaline hydrolysis (degradation of insecticides in high pH water).
- True buffer that reduces and stabilizes the spray solution pH to between 4 and 6 (typically pH 4.5 – 5.5), where most insecticides are most stable.
- Will not decrease the pH to extremely low levels, especially when using water with a low buffering capacity.
- Used mainly with insecticides that are prone to alkaline hydrolysis to extend the half-life in alkaline water.
- Contains a surfactant for improved retention and spreading of spray droplets.
- Rate calculation according to water analysis.

Do's and don'ts

- Add to the spray tank before the alkaline hydrolysis-sensitive insecticide.
- Do not use as a standard practice, but only when labels specifically recommend acidification.

ALWAYS READ THE LABEL

ADJUVANT



USE RATE†
- 0.04 – 0.1 % (40 – 100 mℓ/100 ℓ spray solution).
- Use the higher rate in water with a high alkalinity (buffering capacity) or when a water analysis indicates it.

REGISTRATION DETAILS†
AQUABUFF PLUS
Active ingredient: Mixed organic buffer system and alcohol ethoxylate surfactant 585 g/ℓ
Reg. No.L9210, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ, 20 ℓ

COMMODOBUFF

Active ingredient: Organic acid and alkali 660 g/ℓ
(Reg. No. L5390, Act 36 of 1947)

A buffering agent for the correction of the water pH in alkaline spray mixtures.

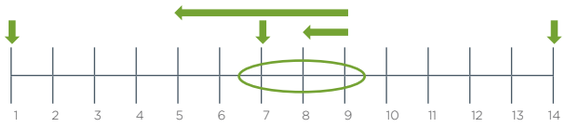


Figure 1: pH-Scale

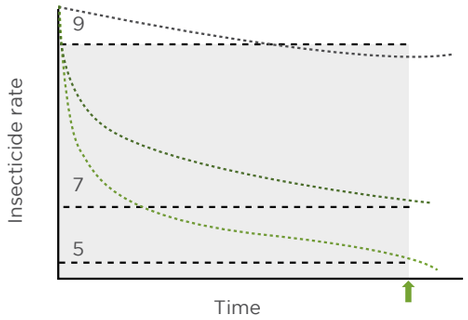


Figure 2: Alkaline hydrolysis

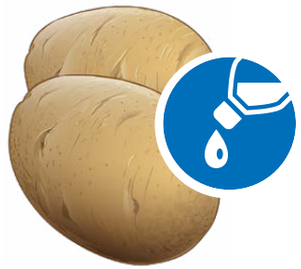
Features

- Used mainly to decrease alkaline hydrolysis (degradation of insecticides in high pH water).
- True buffer that reduces and stabilizes the spray solution pH to between 4 and 6 (typically pH 4.5 – 5.5), where most insecticides are most stable.
- Will not decrease the pH to extremely low levels, especially when using water with a low buffering capacity.

Do's and don'ts

- Add to the spray tank before the alkaline hydrolysis-sensitive insecticide.
- Do not use as a standard practice, but only when labels specifically recommend acidification.

ADJUVANT



USE RATE†
- 0.05 – 0.1 % (50 – 100 mℓ/100 ℓ spray solution).
- Use the higher rate in water with a high alkalinity (buffering capacity).

REGISTRATION DETAILS†
COMMODOBUFF
Active ingredient: Organic acid and alkali 660 g/ℓ
Reg. No. L5390, Act 36 of 1947, (caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630
Tel: 011 396 2233

PACKAGING
5 ℓ and 20 ℓ

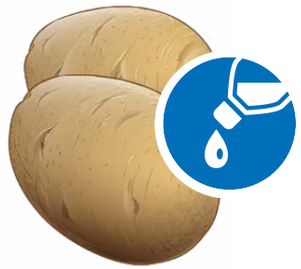
ALWAYS READ THE LABEL

DIRECT

ADJUVANT

Active ingredient: polyether-polymethylsiloxane-copolymer 300 g/ℓ and vegetable oil 650 g/ℓ
(Reg. No. L8680, Act 36 of 1947)

Direct is a non-ionic adjuvant with spreading and penetrating properties for use with post emergence crop protection product applications, especially fungicides.



Features

- Fungicide adjuvant, if label recommended .
- Excellent spreading.
- Assists with the absorption process.
- Used with clethodim.

Do's and don'ts

- Normally 0.05 % for ground and 0.1% for aerial fungicide applications.
- Use only if fungicide label specifically recommends an adjuvant.
- Add to the spray tank after the crop protection products.

USE RATE†
- 0.05 - 0.1 % (50 - 100 mℓ/100 ℓ spray solution).
- For use with fungicides.
- For use with selected herbicides like clethodim.
- Normally used in conjunction with Velocity-DryMax with -dim herbicides.
- Use the higher rate for herbicides.

REGISTRATION DETAILS†
DIRECT
Active ingredient: polyether-polymethylsiloxane-copolymer (300 g/ℓ) and vegetable oil 650 g/ℓ
Reg. No. L8680, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
1 ℓ, 5 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INTERLOCK

ADJUVANT

Active ingredient: Vegetable oils, polyoxy ethylene fatty acid ester 880g/ℓ (Reg. No. L10254, Act 36 of 1947)

INTERLOCK is a deposition-agent adjuvant that improves spray deposition and canopy penetration while reducing spray drift and evaporation of spray droplets.

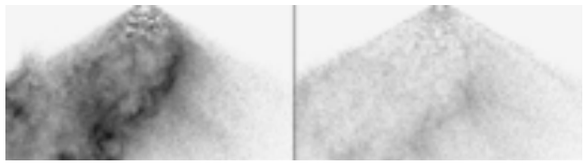


Figure 1: XR nozzle without and with INTERLOCK

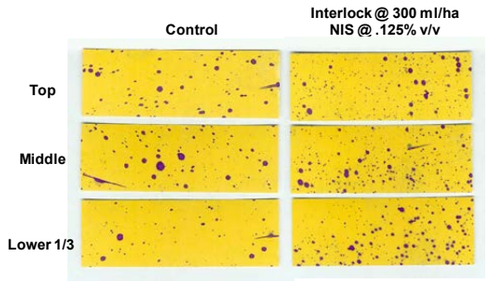


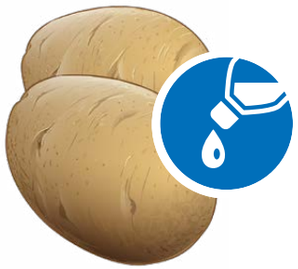
Figure 2: Depth of canopy penetration with Interlock applied to a canopied crop

Features

- Drastically reduces the ultra and very fine spray droplets.
- Increases mean droplet velocity at canopy height.
- Increases canopy penetration.
- Increases retention and coverage.
- Decreases drift and evaporation.
- Can be used with herbicides, fungicides and insecticides.
- Does not increase the spray solution viscosity.
- Suitable for both ground and aerial application.

Do's and don'ts

- Do not use with crop protection products that restrict the use of an adjuvant.
- Does not replace other adjuvants because it should be used in conjunction with the recommended adjuvant.
- Do not mix in an induction system or container when the products are undiluted.



USE RATE†
- 0.2 – 0.3 ℓ/ha Ground and > 0.5% Aerial rates.
- Compatible with most commonly used crop protection products. However, a jar test is recommended prior to large scale mixing.
- Add after crop protection products or other adjuvants but prior to complete filling of the spray

REGISTRATION DETAILS†
INTERLOCK
Active ingredient: Vegetable oils, polyoxy ethylene fatty acid ester 880g/ℓ
Reg. No. L10254 , Act 36 of 1947
(caution)

Registration holder:
Winfield Solutions Registration Holdings (Pty) Ltd.
Reg. No. 2015/312008/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
10 ℓ

ALWAYS READ THE LABEL

PLANT GROWTH REGULATOR

Trade name	Active Ingredient	Target Species
KELPX-5	Natural Free IAA	A natural plant growth promoter which improves root growth, crop growth and yields

Click on product links above to get to more information on this product.

KELPX-5

Active ingredient: Natural Free IAA
(IAA is the dominant natural free Auxin) 357 µg/kg
(Reg. No. M 24, Act 36 of 1947)

A natural plant growth promoter which improves root growth, crop growth and yields.

Features

- KELPX-5 is a concentrated kelp extract manufactured from *Ecklonia Maxima* kelp - known for its high auxin content, specifically Free IAA (Indole 3 Acetic Acid).
- Auxins improve cell wall elasticity and subsequent cell expansion, with Free IAA being a thousand times more effective than conjugated and bounded auxins.
- KELPX-5 is a super concentrate that can be used at a 5 times dilution or 1/5 dosage when compared to standard kelp extract dosages to obtain comparable results in general – making it very cost effective.
- Preserved without biocides. Once KELPX-5 is diluted in the spray medium, the bacteriostatic effect disappears, rendering beneficial microorganisms unharmed.
- KELPX-5 is compliant with almost all application methods: foliar spray, drip irrigation, in-furrow, through fertigation systems, soil drench, plant dip and seed treatment.

Do's and don'ts

- **At planting:** Dipping of tubers in 4ml/litre water before planting OR treat seed potatoes with a 0.1% KelpX-5 solution before planting, OR In-furrow application at 400 mℓ/litre.
- **21 Days after Emergence:** 400 mℓ/ha application.
- **35 Days after emergence:** 400 mℓ/ha application.
- **Don't spray after 42 days of emergence**.

ALWAYS READ THE LABEL

PLANT GROWTH REGULATOR

USE RATE†
- 4 mℓ / 10 ℓ water or
  40 mℓ / 100 ℓ water.
- Standard industry application rate is
  400 mℓ/ha.

REGISTRATION DETAILS†
KELPX-5
Active ingredient: Natural Free IAA
(IAA is the dominant natural free Auxin)
357 µg/kg
Reg. No. M 24, Act 36 of 1947.

Registration holder:
KelpX (Pty) Ltd
Reg. No. 2017/531270/07
PO Box 11355, Tiegerpoort, 0056
Tel: 060 913 9902

PACKAGING
20 ℓ

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WINFIELD® UNITED

TANK CLEANER

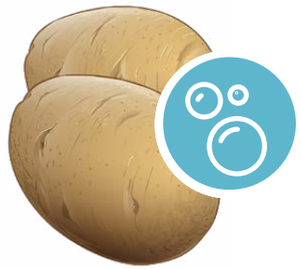
Trade name	Active ingredient	Target species
PROTANK LIQUID CLEANER	Proprietary blend of phosphate and carbonate salts, sequestering agents, surfactants and solvents.	Spray tank cleaner for commercial use on farm only.

Click on product links above to get to more information on this product.

PROTANK® LIQUID CLEANER

Active ingredient: proprietary blend of phosphate and carbonate salts, sequestering agents, surfactants and solvents 100%

Spray tank cleaner for commercial or farm use only.



Features

- PROTANK LIQUID CLEANER decreases contamination when changing from one chemical to another.
- Assures accurate dosage by removing chemicals from the previous batch.
- Removes scale, dirt, etc.
- Protects pump and valves.
- Reduces strainer clogging.
- Minimizes nozzle wear.

Do's and don'ts

- Use a hand boom to wash down the tank interior and cover.
- Once the pump and interior has been cleaned, open boom valve and empty tank by spraying out through boom and nozzles.
- Take care to observe proper disposal of spray solution.
- Rinse tank by following the same procedure using water only.
- A three-minute rinse using cold water is necessary, however if you are changing over to a different chemical, a second rinse will lessen the chance of contamination.
- Use as directed but in addition allow the rinse solution to remain in the sprayer and its parts overnight.

USE RATE†

Large Tanks (380- 1100 ℓ)

- Close boom valve and add 190 ℓ water to tank, then turn on agitation and add 470 mℓ of PROTANK LUQUID CLEANER.

Smaller tanks

- Fill tank half full of water and use 25 mℓ or more for every 10 ℓ of tank volume.

DETAILS†

PROTANK LIQUID CLEANER
Active ingredient: Proprietary blend of phosphate and carbonate salts, sequestering agents, surfactants and solvents 100%.

Distributor:
Villa Crop Protection (Pty) Ltd.
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PACKAGING
1 ℓ

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