WinField® United

Cereal Crop Manual

villa

WinField® United

Cereal Crop Manual

Our comprehensive portfolio of Cereal 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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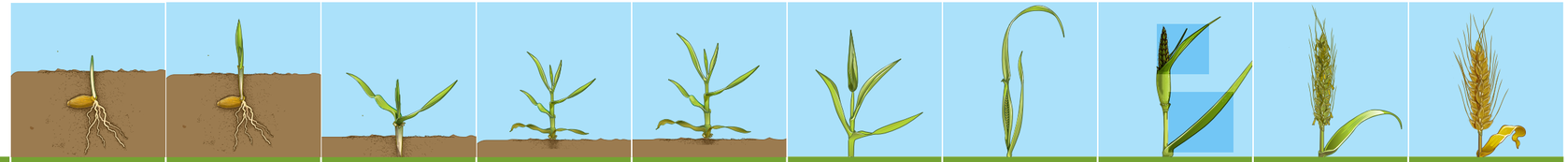
Cereal Growth Stage Spray Programme



Description of stages		Seed Treatment	Plant	Germinate	Second leaf: GS12	Tillering: GS23-26	Jointing: GS30-32	Flagleaf: GS39	Boot: GS45-50	Heading: GS53-59	Flowering: GS61-87	GS93
		Plant	Plant	Vegetative Stage			Reproductive Stage					Grainfill and Harvest
INSECTICIDES												
RUSSIAN WHEAT APHID	OPTION 1	RONSEK 600 FS										
RUSSIAN WHEAT APHID + SMUT DISEASES	OPTION 1	CAPTIVO 360 FS										
CUTWORM	OPTION 1		JUDO 50 EC									
RUSSIAN WHEAT APHID	OPTION 1					DIMETHOATE 400 EC	DIMETHOATE 400 EC	DIMETHOATE 400 EC	DIMETHOATE 400 EC			
	OPTION 2					IMIDOR 350 SC	IMIDOR 350 SC	IMIDOR 350 SC	IMIDOR 350 SC			
	OPTION 3					CHLORPYRIFOS 480 EC	CHLORPYRIFOS 480 EC	CHLORPYRIFOS 480 EC	CHLORPYRIFOS 480 EC	CHLORPYRIFOS 480 EC		
APHIDS	OPTION 1					MAINTAIN 200 SP	MAINTAIN 200 SP	MAINTAIN 200 SP	MAINTAIN 200 SP			
BOLLWORM	OPTION 1									ADDITION 150 SC	ADDITION 150 SC	
	OPTION 2									METHOMYL 90 SP	METHOMYL 90 SP	
	OPTION 3									LINEAR 350 EC	LINEAR 350 EC	
HERBICIDES												
PRE-EMERGENCE GRASSES	OPTION 1		TRIFLURALIN 480 EC									
	OPTION 2		WRESTLER 800 EC									
PRE- AND POST-EMERGENCE BROAD LEAF	OPTION 1		DIFLUDE 500 SC	DIFLUDE 500 SC	DIFLUDE 500 SC							
	OPTION 2		DIGRAN 750 WDG	DIGRAN 750 WDG	DIGRAN 750 WDG							
POST-EMERGENCE BROAD LEAF	OPTION 1					RAMETREX 410 EC	RAMETREX 410 EC					
	OPTION 2					CAMPATOP 225 EC + MCPA 400 SL"	CAMPATOP 225 EC + MCPA 400 SL"					
	OPTION 3					ALLIANTE 600 WDG	ALLIANTE 600 WDG					

** Please note that programme is adjusted according to season and IPM principles.*
** Spray guideline is based on phenological stages. Consult industry MRL list with regard to limitations for export destinations.*
** This programme does not necessarily represent all the products available and must be adjusted to season accordingly.*
** Always read the label before use.*

NEXT PAGE

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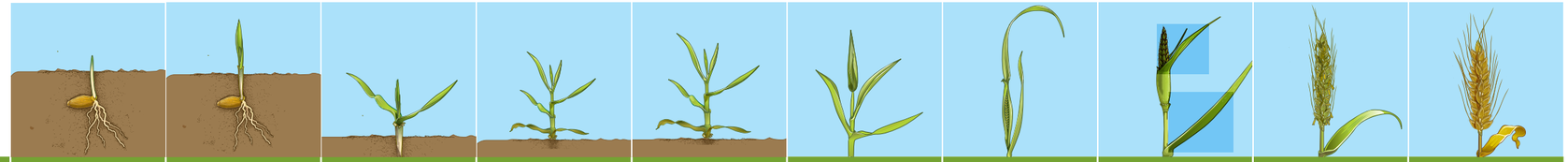
Cereal Growth Stage Spray Programme



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		Plant	Plant	Vegetative Stage			Reproductive Stage					Grainfill and Harvest
FUNGICIDES												
BROWN RUST *(Puccinia triticina)*	OPTION 1						IMPROVE 250 SC	IMPROVE 250 SC				
	OPTION 2						FACULTY TOP 250 SC	FACULTY TOP 250 SC				
	OPTION 3						ACADEMY 250 SC + SANTANA 480 SC	ACADEMY 250 SC + SANTANA 480 SC				
	OPTION 4									TEBUZOLE 250 EW		
STEM RUST *(Puccinia graminis)*	OPTION 1						IMPROVE 250 SC	IMPROVE 250 SC				
	OPTION 2									TEBUZOLE 250 EW		
SPECKLED LEAF BLOTCH *(Septoria spp.)*	OPTION 1						ACADEMY 250 SC + SANTANA 480 SC	ACADEMY 250 SC + SANTANA 480 SC				
	OPTION 2						IMPROVE 250 SC	IMPROVE 250 SC				
	OPTION 3									TEBUZOLE 250 EW		
EYESPOT *(Pseudocercosporella herpotrichoides)*	OPTION 1						FACULTY TOP 250 SC	FACULTY TOP 250 SC				
	OPTION 2						IMPROVE 250 SC	IMPROVE 250 SC				
	OPTION 3									TEBUZOLE 250 EW		
POWDERY MILDEW *(Blumeria graminis)*	OPTION 1						FACULTY TOP 250 SC	FACULTY TOP 250 SC				
	OPTION 2						ACADEMY 250 SC + SANTANA 480 SC	ACADEMY 250 SC + SANTANA 480 SC				
	OPTION 3						IMPROVE 250 SC	IMPROVE 250 SC				
	OPTION 4									TEBUZOLE 250 EW		
YELLLOW RUST / STRIPE RUST *(Puccinia striformis)*	OPTION 1						ACADEMY 250 SC + SANTANA 480 SC	ACADEMY 250 SC + SANTANA 480 SC				
	OPTION 2						IMPROVE 250 SC	IMPROVE 250 SC				
	OPTION 3									TEBUZOLE 250 EW		
ADJUVANTS												
	OPTION 1						DIRECT	DIRECT				
	ALWAYS						INTERLOCK	INTERLOCK				

** Please note that programme is adjusted according to season and IPM principles.*
** Spray guideline is based on phenological stages. Consult industry MRL list with regard to limitations for export destinations.*
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NEXT PAGE

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INSECTICIDE

Trade name	Active ingredient	Target species
ADDITION 150 SC	indoxacarb (oxadiazine)	Larvae of African bollworm
BIOMECTIN® 18 EC	abamectin (avermectin)	Larvae of leafminer
CAPTIVO 360 FS	Imidacloprid (chloro-nicotinyl) and tebuconazole (triazole)	Russian wheat aphid, wheat aphid, oat aphid, brown wheat ear aphid.
CHLORPYRIFOS 480 EC	chlorpyrifos (organophosphate)	Russian aphid, green and brown aphids
DIMETHOATE 400 EC	dimethoate (organophosphate)	Russian aphid, green and brown aphids
IMIDOR 350 SC	imidacloprid (chloro-nicotinyl)	Wheat aphid, oat aphid, brown wheat ear aphid, Russian wheat aphid, false chinch bugs
JUDO 50 EC/LAMBDA 50 EC	lambda-cyhalothrin (pyrethroid)	African bollwurm, cutworm
MAINTAIN 200 SP	acetamiprid (acetamidine)	Brown ear aphid, common wheat aphid, birdcherry-oat aphid
METHOMYL 90 SP	methomyl (carbamate)	Larvae of African bollworm
RONSEK 600 FS	imidacloprid (chloro-nicotinyl)	Russian wheat aphid

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

ADDITION 150 SC

INSECTICIDE

Active ingredient: Indoxacarb (oxadiazine) 150 g/ℓ
(Reg. No. L9146, Act 36 of 1947)

A suspension concentrate stomach and contact insecticide for the control of African bollworm *(Helicoverpa armigera)* in canola, wheat and barley.



USE RATE†
African bollworm
- Apply 200 - 300 mℓ /ha preventatively/correctively as required, in 300 to 600 ℓ water per hectare, ensuring thorough coverage.

REGISTRATION DETAILS†
ADDITION 150 SC
Active ingredient: Indoxacarb (oxadiazine) 150 g/ℓ
Reg. No. L9146, 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

PACKAGING
1 ℓ

Features

- Unique class of chemistry called oxadiazine with proven efficacy against the Lepidoptera group of insects.
- Low dosage rate required.
- Effective under a wide range of temperatures.
- Absorbs strongly onto the cuticle of leaves.
- Provides an excellent resistance management tool and perfect candidate in IPM systems.
- Low impact on environment and beneficial insects (predators and bees).
- Effective under a wide range of temperatures allowing flexibility of application timing.
- Excellent residual action.
- Rainfast, as soon as product has dried off on the leaf surface.

Do's and don'ts

- Do a block application of two to three consecutive ADDITION 150 SC applications, then switch to products with other modes of action.
- The addition of an organosilicone surfactant (such as BREAK-THRU® S240) is recommended to improve coverage.
- Use the higher dosage rate when applied correctively.
- Use the lower rate for subsequent applications (follow-up) when applied in a regular programme.

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WINFIELD® UNITED

INSECTICIDE

BIOMECTIN 18 EC

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

An emulsifiable concentrate insecticide with translaminar activity for the control of larvae of leafminer *(Agromyza ocularis)* in cereal crops.

Features

- BIOMECTIN 18 EC is an IRAC group code 6 insecticide.
- BIOMECTIN 18 EC is manufactured by a fermentation process of Streptomyces avermitilis and contains the active isomers of avermectin B_{1a} and avermectin B_{1b}
- BIOMECTIN 18 EC contains abamectin and is registered for the control of leaf miner on wheat and barley
- BIOMECTIN 18 EC is an emulsifiable concentrate insecticide with limited plant systemic activity but exhibits translaminar activity.
- The translaminar activity of Biomectin 18 EC enables the active ingredient to reach the target within the leaf tissue ensuring that the leaf miner larvae are controlled.
- BIOMECTIN 18 EC is quickly taken up by the plant. It will not easily be washed off by rain and/or irrigation if the spray mixture has had sufficient time to dry properly.

Do's and don'ts

- Apply BIOMECTIN 18 EC at first signs of infestation.
- Apply in a minimum of 300 litres water per hectare.
- BIOMECTIN 18 EC is only registered for use by members of the Griqualand West Cooperative (GWK Ltd.) for the control of leaf miner in wheat and barley grown under irrigation in the Douglas and Prieska areas.

USE RATE†
- **Wheat and barley** @ 1200 mℓ / ha

REGISTRATION DETAILS†
BIOMECTIN 18 EC
Active ingredient: abamectin (avermectin) 18 g/ℓ.
Reg. No. L 7979 , 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
1ℓ, 5ℓ, 20ℓ,

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CAPTIVO 360 FS

INSECTICIDE

Active ingredient: Imidacloprid (chloro-nicotinyl) 350 g/ℓ and tebuconazole (triazole) 10 g/ℓ
(Reg. No. L10404, Act 36 of 1947)

A systemic insecticide and fungicide seed treatment for the control of insect pests and diseases in cereal crops as indicated.

USE RATE†
- Wheat and Barley @ 400 mℓ / 1.6 ℓ water / 100 kg seed

REGISTRATION DETAILS†
CAPTIVO 360 FS
Active ingredient: Imidacloprid (chloro-nicotinyl) 350 g/ℓ + tebuconazole (triazole) 10 g/ℓ
Reg. No. L10404, 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

Features

- CAPTIVO 360 FS is an IRAC group code 4A insecticides with a FRAC group code 3 fungicide.
- CAPTIVO 360 FS is registered for the control of aphids and smut diseases on wheat and barley.
- CAPTIVO 360 FS provides excellent control against aphids from early stages, including Russian wheat aphid *(Diuraphis noxia)*, wheat aphid *(Schizaphis graminum)*, oat aphid *(Rhopalosiphum padi)*, brown wheat ear aphid *(Sitobion avenae)*.
- Outstanding properties for cereal seed protection against smut diseases such as covered smut *(Ustilago hordei)*, loose smut *(Ustilago nuda)* on barley as well as stinking smut *(Tilletia spp.)*, loose smut *(Ustilago tritici)* on wheat.
- A seed treatment combination where both active ingredients are translocated acropetally.
- Protects the plant from seed phase thereby decreasing stress on the plant.
- Ideal formulated mixture, seed treatment that prevent incompatibility.

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CAPTIVO 360 FS

INSECTICIDE

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Reg. No. L10404, 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

Do's and don'ts

- DO NOT use CAPTIVO 360 FS on wheat & barley seed that has been treated with VITAVAX® FS (L 2910) as this may adversely affect germination. However, treatment is permitted on seed treated with VITAVAX® PLUS (L 3695).
- Treated seed must be planted correctly and covered completely with soil.
- Sufficient soil moisture is required, to ensure uptake of the active ingredient during germination.
- Use only for the treatment of high quality certified seed.
- It is recommended to treat the seed a few days before planting.
- Mix the required volume of CAPTIVO 360 FS with a small volume of water to form a smooth cream before adding the balance of the water. Mix thoroughly before adding to the seed.

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WINFIELD® UNITED

INSECTICIDE

CHLORPYRIFOS 480 EC

Active ingredient: Chlorpyrifos (organophosphate) 480 g/ℓ
(Reg. No. L7183, Act 36 of 1947)

An emulsifiable concentrate, contact insecticide with a respiratory action for the control of the Russian aphid, green aphid and brown aphids in wheat.



Features

- CHLORPYRIFOS 480 EC is an IRAC group code 1B organophosphate insecticide.
- As an organophosphate insecticide, chlorpyrifos acts by inactivating the enzyme acetylcholinesterase, resulting in paralysis and death of the insect.
- CHLORPYRIFOS 480 EC is a contact insecticide with stomach and respiratory action.
- CHLORPYRIFOS 480 EC may be applied as a foliar application for the control of aphids in wheat.
- CHLORPYRIFOS 480 EC is an emulsifiable concentrate, contact and stomach insecticide with a respiratory action for the control of the Russian aphid *(Diuraphos noxia)* and the green aphid *(Schizaphis graminum)* and the brown ear aphid *(Sitobion avenae)* in wheat.
- The respiratory action of chlorpyrifos assists with control of aphids in wheat – particularly the Russian aphid.
- May be applied by aerial application.

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Do's and don'ts

- Use the higher dosage rate for the first application and where high infestation occurs. Repeat application if re-infestation occurs.
- Start spraying when the first signs of infestation are observed.
- Repeat sprays 8 to 10 days later if necessary, using the lower dosage rate of 750 ml per hectare.
- Apply 200 to 300 litres water per hectare, depending on size of plants.
- Always wear correct protective clothing including masks and follow practices that minimise user exposure.
- CHLORPYRIFOS 480 EC is a pH sensitive insecticide, therefore apply in combination with a Villa registered pH buffer.

USE RATE†
- **Russian wheat aphid** *(Diuraphis noxia)* -750 mℓ to 1.0 ℓ/ha.
- Ground application: Apply as an overall spray. Apply 200 to 300 ℓ water per hectare, depending on size of plants.
- Aerial application: Apply not less than 30 ℓ water per hectare.
- Green and Brown aphids – 750 mℓ/ha Spray if the aphid population is on the increase, and very few ladybird predators and parasites are present.
- Ground application: Apply in a minimum of 300 ℓ water per hectare. Repeat after 10 to 14 days if necessary.
- Aerial application: Apply not less than 30 ℓ water per hectare.

REGISTRATION DETAILS†
CHLORPYRIFOS 480 EC
Active ingredient: chlorpyrifos 480 g/ℓ.
Reg. No. L7183 , 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 ℓ

DIMETHOATE 400 EC

INSECTICIDE

Active ingredient: Dimethoate (organophosphate) 400 gℓ
(Reg. No. L8455, Act 36 of 1947)

An emulsifiable concentrate systemic and contact insecticide for the control of aphids on wheat and barley.

Summary of two trials showing the performance of DIMETHOATE 400 EC at controlling aphids on wheat. The graph shows the mean percentage overall aphid control on wheat.

USE RATE†

Barley

Russian aphid:

750 mℓ /ha DIMETHOATE 400 EC

- Green and brown aphids:
  500 to 750 mℓ /ha
  DIMETHOATE 400 EC (use higher dosage under dry conditions).

Wheat:

Russian aphid:

750 mℓ/ha (winter rainfall regions only)
960 mℓ/ha DIMETHOATE 400 EC plus
640 mℓ/ha PARATHION 500 EC

Green and brown aphid:

500 to 750 mℓ/ha
or
300 to 500 mℓ/ha plus
200 to 300 mℓ/ha
PARATHION 500 EC (use higher dosage on wheat under irrigation and dryland wheat, after early piping stage).

REGISTRATION DETAILS†
DIMETHOATE 400 EC,
Active ingredient: Dimethoate (organophosphate) 400 g/ℓ
Reg. No. L8455, Act 36 of 1947
(toxic)

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

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5 ℓ and 20 ℓ

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DIMETHOATE 400 EC

INSECTICIDE

Active ingredient: Dimethoate (organophosphate) 400 gℓ
(Reg. No. L8455, Act 36 of 1947)

An emulsifiable concentrate systemic and contact insecticide for the control of aphids on wheat and barley.

Features

- DIMETHOATE 400 EC is an organophosphate, IRAC group code 1B insecticide containing dimethoate.
- DIMETHOATE 400 EC functions by interfering with cholinesterase, an enzyme essential for the proper functioning of the nervous system of insects.
- Systemic insecticide that acts on the central nervous system of insects through both contact and ingestion (stomach).
- Broad spectrum insecticide.
- Fast acting knockdown insecticide, that is a good candidate for use in an IPM system.
- Unlike organochlorine pesticides, organophosphorus insecticides, such as dimethoate, do not persist in the environment.
- Absorbed and translocated within the plant in sufficient concentrations to kill insects that feed on the plant.
- Controls a large number of different aphids.

Do's and don'ts

- Apply at first signs of infestation when few ladybird beetles and other predators are present..
- Optimal results obtained if applied when the crops are actively growing.
- Integrate other control methods (chemical, cultural and biological) into insect control programme to limit resistance development.
- A minimum of 30 ℓ/ha water is required for aerial applications to avoid phytotoxicity.
- Compatible with other registered Villa Crop Protection products.
- Do not apply if undersown with other crops.

USE RATE†

Barley

Russian aphid:

750 mℓ /ha DIMETHOATE 400 EC

- Green and brown aphids:
  500 to 750 mℓ /ha
  DIMETHOATE 400 EC (use higher dosage under dry conditions).

Wheat:

Russian aphid:

750 mℓ/ha (winter rainfall regions only)
960 mℓ/ha DIMETHOATE 400 EC plus
640 mℓ/ha PARATHION 500 EC

Green and brown aphid:

500 to 750 mℓ/ha
or
300 to 500 mℓ/ha plus
200 to 300 mℓ/ha
PARATHION 500 EC (use higher dosage on wheat under irrigation and dryland wheat, after early piping stage).

REGISTRATION DETAILS†
DIMETHOATE 400 EC,
Active ingredient: Dimethoate (organophosphate) 400 g/ℓ
Reg. No. L8455, Act 36 of 1947
(toxic)

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

PACKAGING
5 ℓ and 20 ℓ

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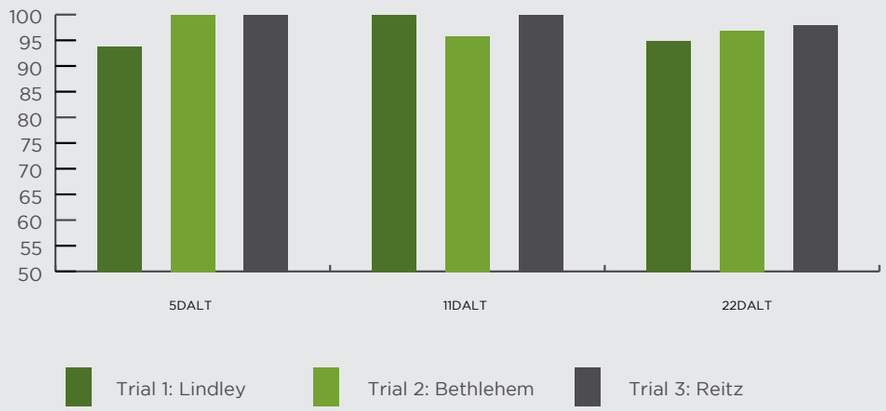
IMIDOR 350 SC

INSECTICIDE

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

A suspension concentrate, systemic insecticide for use in wheat and barley against wheat aphid *(Schizaphis graminum)*, oat aphid *(Rhopalosiphum padi)*, brown wheat ear aphid *(Sitobion avenae)*, Russian wheat aphid *(Diuraphis noxia)* and false chinch bugs.



Summary of three trials performed in Lindley, Bethlehem and Reitz, Free State (2011) showing the performance of IMIDOR 350 SC at controlling Brown ear wheat aphid (Sitobion avenae). The graph shows the mean percentage (%) control of Brown ear wheat aphid in at 5, 11 and 22 days after the last treatment (5, 11 and 22 DALT).

USE RATE†
Apply 200 mℓ /ha on crops that are actively growing for the control of wheat-, oat-, brown wheat- and Russian wheat aphid, as well as false chinch bugs.

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

RONSEK 600 FS
Active ingredient: Imidacloprid (chloro-nicotinyl) 600 g/ℓ
Reg. No. L8573, Act 36 of 1947
(caution)

Registration holder:
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PACKAGING
1 ℓ, 5 ℓ and 20 ℓ

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IMIDOR 350 SC

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

A suspension concentrate, systemic insecticide for use in wheat and barley against wheat aphid *(Schizaphis graminum)*, oat aphid *(Rhopalosiphum padi)*, brown wheat ear aphid *(Sitobion avenae)*, Russian wheat aphid *(Diuraphis noxia)* and false chinch bugs.

Features

- Systemic insecticide that acts on the central nervous system of insects through both contact and ingestion (stomach) action.
- Imidacloprid exhibits excellent translaminar movement in plants and can penetrate the leaf cuticle and move readily into leaf tissue.
- Due to paralysis insects stop feeding, although death only occurs some time later.
- Excellent residual control.
- Mixes well with various fungicides.
- Not sensitive to fluctuations in water pH.

Do's and don'ts

- Do not apply onto crops when honey bees are present, also prevent drift onto surrounding areas where bees are active.
- Make sure plants are actively growing to facilitate uptake of the product.
- Not registered for aerial application.
- When an imidachloprid (RONSEK 600 FS) seed treatment is used, consider an alternative mode of action to avoid resistance development.

INSECTICIDE

USE RATE†
Apply 200 mℓ /ha on crops that are actively growing for the control of wheat-, oat-, brown wheat- and Russian wheat aphid, as well as false chinch bugs.

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

RONSEK 600 FS
Active ingredient: Imidacloprid (chloro-nicotinyl) 600 g/ℓ
Reg. No. L8573, Act 36 of 1947
(caution)

Registration holder:
Villa Crop Protection (Pty) Ltd. Co.
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PACKAGING
1 ℓ, 5 ℓ and 20 ℓ

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WINFIELD® UNITED

INSECTICIDE

JUDO 50 EC/LAMBDA 50 EC

Active ingredient: Lambda-cyhalothrin (pyrethroid) 50 g/ℓ
(Reg. No. L7785, JUDO 50 EC and L7787, LAMBDA 50 EC, Act 36 of 1947)

JUDO 50 EC/LAMBDA 50 EC is a synthetic pyrethroid insecticide with a contact and stomach action for the control of cutworm *(Agrotis ipsilon)* and African bollworm *(Helicoverpa armigera)* in wheat.



Figure 1. Cutworm, Figure 2 and 3. African Bollworm on wheat ear

Features

- JUDO 50 EC/LAMBDA 50 EC is a synthetic pyrethroid, IRAC group code 3 insecticide.
- As a pyrethroid, Lambda cyhalothrin affects the nervous system of an insect resulting in paralysis and death.
- Highly effective at relatively low dosage rates.
- Compatible with a Villa approved buffer and surfactant adjuvants.
- JUDO 50 EC/LAMBDA 50 EC is a contact and stomach insecticide with a rapid knockdown effect and a long residue.
- As a contact insecticide it is absorbed quickly through the outer cuticle (exoskeleton) of the insect.
- Affected larvae rapidly cease feeding and may fall off the crop.
- May be applied by aerial application.
- Provides control of cutworm at the time of planting. Also controls African bollworm on wheat.

Do's and don'ts

- Do not mix JUDO 50 EC/LAMBDA 50 EC with seaweed extracts.
- Apply as soon as an infestation is noticed and repeat if necessary.
- Do not exceed the maximum of 3 applications per season.
- For cutworm control apply only if the top 3 cm of the soil is moist.
- When planting in dry soil poor control of cutworms can be expected.

USE RATE†
- **Cutworm:** 70 mℓ/ha
- **Wheat – African bollworm:** 100 mℓ/ha
- Ground Application: Apply in 250 to 500 ℓ water per hectare and ensure thorough wetting of the crop.
- Aerial application: Apply at least 30 ℓ water per hectare.

REGISTRATION DETAILS†
JUDO 50 EC/LAMBDA 50 EC
Active ingredient: Lambda cyhalothrin (pyrethroid) 50 g/ℓ.
Reg. No. L7785, JUDO 50 EC and L7787, LAMBDA 50 EC,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 ℓ, 5 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

INSECTICIDE

MAINTAIN 200 SP

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 aphids in wheat, barley, oats and canola.

Features

- MAINTAIN 200 SP is an IRAC group code 4A insecticide
- MAINTAIN 200 SP controls various aphids in wheat, barley and oats which includes brown ear aphid *(Sitobion avenae)*, common wheat aphid, *(Schizaphis graminum)* and birdcherry-oat aphid *(Rhapalosiphum padi)*.
- MAINTAIN 200 SP also controls the cabbage aphid *(Brevicoryne brassicae)* in canola.
- MAINTAIN 200 SP is a systemic insecticide that acts on the central nervous system of insects through both contact action and ingestion (stomach action).
- MAINTAIN 200 SP translocates to the apical meristems in the plant (acropetal movement) protecting the new growth.
- Controls the pest even when hidden within the leaves.
- MAINTAIN 200 SP provides a rapid knockdown with a good residual activity.
- Rapid paralysis of the insect stops feeding rapidly and is followed by eventual death.
- Good residual activity results in a longer period of effective control.
- Low dosage rates required (50g/ha) for effective control.

USE RATE†

Wheat and Barley

- Brown ear aphid and common wheat aphid- 50 g/ha
  MAINTAIN 200 SP + VILLA 51
  (Apply minimum 100 ℓ /ha water)

Canola

- Cabbage aphid- 50 g/ha
  MAINTAIN 200 SP + VILLA 51
  (Apply minimum 100 ℓ /ha water)

REGISTRATION DETAILS†
MAINTAIN 200 SP
Active ingredient: Acetamiprid (acetamidine) 200 g/kg
Reg. No. L9225 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
500 g

ALWAYS READ THE LABEL

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WINFIELD® UNITED

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 aphids in wheat, barley, oats and canola.

Do's and don'ts

- Apply at first signs of infestation.
- Optimal results obtained if applied when the crops are actively growing.
- Ensure that application is complete before a dense crop canopy is formed (before stem elongation: GS30) stage.
- Do not apply later than ear emergence in wheat and barley and not after flowering in canola.
- Do not apply on to crops as a foliar spray when honey bees are present.
- Do not alternate with insecticides with a similar mode of action (e.g. Imidacloprid).
- To minimize development of resistance do not exceed two (2) applications per season.
- Integrate other control methods (chemical, cultural and biological) into insect control program to limit resistance development.
- DO NOT mix with triazole fungicides as bee toxicity is dramatically synergized.

USE RATE†

Wheat and Barley

- Brown ear aphid and common wheat aphid- 50 g/ha
  MAINTAIN 200 SP + VILLA 51
  (Apply minimum 100 ℓ /ha water)

Canola

- Cabbage aphid- 50 g/ha
  MAINTAIN 200 SP + VILLA 51
  (Apply minimum 100 ℓ /ha water)

REGISTRATION DETAILS†
MAINTAIN 200 SP
Active ingredient: Acetamiprid (acetamidine) 200 g/kg
Reg. No. L9225 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
500 g

ALWAYS READ THE LABEL

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WINFIELD® UNITED

METHOMYL 90 SP

Active ingredient: Methomyl (carbamate) 900 g/kg
(Reg. No. L5931, Act 36 of 1947)

A water-soluble powder insecticide for the control of African bollworm in wheat.



Features

- METHOMYL 90 SP is an IRAC group code 1A insecticide.
- METHOMYL 90 SP is a cholinesterase inhibitor, with contact and stomach action against African bollworm *(Helicoverpa armigera)* in wheat.
- METHOMYL 90 SP has a short withholding period of 7 days.
- Rapidly degraded to CO_2 and acetonitrile, with incorporation into natural plant components.

Do's and don'ts

- Apply at first signs of infestation of African bollworm.
- Integrate other control methods (chemical, cultural and biological) into insect control programme to limit resistance development.
- Red label insecticide – take care in use and be environmentally conscious.

INSECTICIDE

USE RATE†
Wheat
- 200 g/ha METHOMYL 90 SP (Aerial and Ground Application)
  OR
- 50 g METHOMYL 90 SP per 100 ℓ water (apply in up to 400 ℓ/ha spray mixture)

REGISTRATION DETAILS†
METHOMYL 90 SP
Active ingredient: Methomyl (carbamate) 900 g/kg
Reg. No. L5931 Act 36 of 1947
(very toxic)

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

PACKAGING
1 kg

ALWAYS READ THE LABEL

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WINFIELD® UNITED

RONSEK 600 FS

INSECTICIDE

Active ingredient: Imidacloprid (chloro-nicotinyl) 600 g/ℓ
(Reg. No. L8573, Act 36 of 1947)

A systemic insecticide seed treatment for the control of Russian wheat aphid *(Diuraphis noxia)* in wheat and barley.



USE RATE†
- Wheat and barley only 230 mℓ / 1 ℓ/ 100kg seed

REGISTRATION DETAILS†
RONSEK 600 FS
Active ingredient: Imidacloprid (chloro-nicotinyl) 600 g/ℓ
Reg. No. L8573, 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

Features

- RONSEK 600 FS is an IRAC group code 4A insecticide.
- RONSEK 600 FS acts as an insect neurotoxin and belongs to a class of chemicals called the neonicotinoids which act on the central nervous system of insects.
- RONSEK 600 FS is highly effective in controlling Russian wheat aphid *(Diuraphis noxia)*.
- Readily taken up by the plant and further redistributed acropetally.
- Control of Russian wheat aphid can be expected for a period of 8 to 10 weeks.
- Early establishment of healthy seedlings and improved stand.
- Decreases stress on the plant during germination.

Do's and don'ts

- Do not use RONSEK 600 FS on seed treated with VITAVAX FS.
- Use permitted for seed treated with VITAVAX PLUS.
- Treated seed may be poisonous to seed-eating birds.
- Treated seed must be correctly planted and covered completely with soil.
- Sufficient soil moisture is required, to ensure uptake of the active ingredient during germination.
- Use only for the treatment of high quality certified seed.

ALWAYS READ THE LABEL

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WINFIELD® UNITED

HERBICIDE

Trade Name	Active Ingredient	Target Species
ALLIANTE 600 WDG	metsulfuron-methyl (sulfonyl urea)	Post-emergence broad leaves
CAMPATOP 225 EC	bromoxynil octanoate (nitrile)	Post-emergence broad leaves
DIFLUDE 500 SC	diflufenican (nicotinanilide)	Pre- and earle post-emergence broad leaves
DISGRAN 750 WDG	triasulfuron (sulfonyl urea)	Pre- and earle post-emergence broad leaves
RAMETREX 410 EC	bromoxynuil (octanoate ester) + dicamba (sodium salt) + MCPA (iso-octyl ester)"	Post-emergence broad leaves
TRIFLURALIN 480 EC	trifluralin (dinitroaniline)	Pre-emergence grass control
WRESTLER 800 EC	prosulfocarb (thiocarbamate)	Pre-emergence grass control

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

ALLIANTE 600 WDG

HERBICIDE

Active ingredient: Metsulfuron-methyl (sulfonyl urea) 600 g/kg
(Reg. No. L9917, Act 36 of 1947)

A selective water-dispersible granular herbicide for the post emergence control of broad-leaved weeds in cereal crops.



Features

- ALLIANTE 600 WDG is an HRAC group code B herbicide.
- ALLIANTE 600 WDG is a fast-acting sulfonyl urea herbicide that functions by inhibiting cell division in shoots and roots in target plants in crops such as wheat and barley.
- Systemic compound with both foliar and soil activity.
- Compatible with numerous other foliar herbicides.
- Controls a wide range of broad leaf weeds.

Do's and don'ts

- Do not use ALLIANTE 600 WDG on soils with a pH (KCl) of 6.5 or higher, and/or on soils containing free lime.
- Apply when wheat, oats or barley are in the 3- to 5- leaf stage.
- Refer to the growth stage of each weed (on the product label) for the timing of application to ensure optimal control.
- Do not apply ALLIANTE 600 WDG in combination with insecticides containing chlorpyrifos.

USE RATE†
- 3.5 or 4.0 g/ha PLUS 300 mℓ / 100 ℓ WATER SUMMIT SUPER
  OR
- 3.5 g/ha PLUS 8 g GLEAN® 75 DF PLUS 300 mℓ / 100 ℓ WATER SUMMIT SUPER.
- 500 mℓ/ha MCPA 400 SL can be added for improved control.

REGISTRATION DETAILS†
ALLIANTE 600 WDG
Active ingredient: Metsulfuron-methyl (sulfonyl urea) 600 g/kg
Reg. No. L9917, Act 36 of 1947
(caution)

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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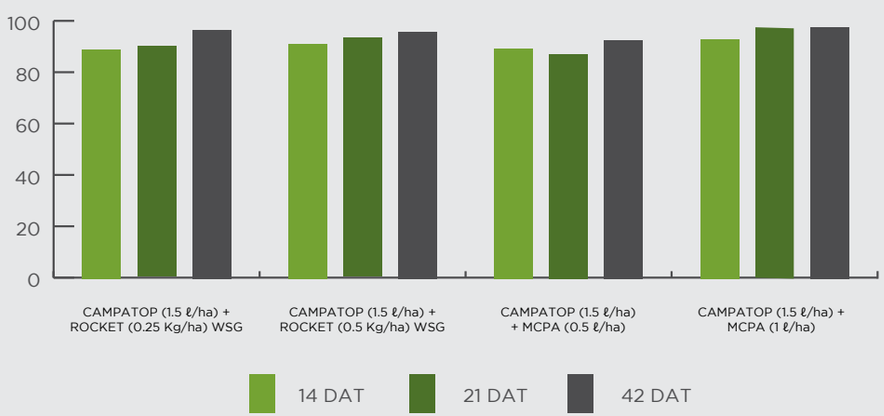
WINFIELD® UNITED

CAMPATOP 225 EC

Active ingredient: Bromoxynil 225 g/ℓ
(Reg. No. L5320, Act 36 of 1947)

A selective emulsifiable concentrate herbicide for the post-emergence control of annual broad-leaved weeds in cereals.



Summary of a trial done showing the performance of CAMPATOP 225 EC in tank mixtures with various other Villa Crop Protection products, in the post emergent control of wild radish in winter wheat.

HERBICIDE

USE RATE†
- Apply 1.5 to 2.0 ℓ/ha solo or 0.6 – 0.75 ℓ/ha in a mixture with DISGRAN 750 WDG (triasulfuron)
- Use 1.5 ℓ/ha plus 500 mℓ/ha MCPA for weed control in wheat and barley (note growth stage)

REGISTRATION DETAILS†
CAMPATOP 225 EC
Active ingredient: Bromoxynil 225 g/ℓ
Reg. No. L5320, Act 36 of 1947
(toxic)

DISGRAN 750 WDG
Active ingredient: Triasulfuron (sulfonyl urea) 750 g/kg.
Reg. No. L7473, 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
20 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

CAMPATOP 225 EC

Active ingredient: Bromoxynil 225 g/ℓ
(Reg. No. L5320, Act 36 of 1947)

A selective emulsifiable concentrate herbicide for the post-emergence control of annual broad-leaved weeds in cereals.

HERBICIDE

Features

- CAMPATOP 225 EC is an HRAC group code C3 herbicide.
- Controls more than 35 broad-leaved weeds.
- Bromoxynil is a fast-acting nitrile herbicide that works on contact by inhibiting photosynthesis in the target plants.
- Selectivity allows for a broad application window.
- Compatibility with numerous other grass and broadleaf herbicides.
- No known resistance in South Africa.
- Allows for product usage at varying weed growth stages without having to alter weed control program.
- Enables weed control spectrum to be expanded based on the existing weed pressure.
- Can replace SU products where resistance has been proven in research.

Do's and don'ts

- When CAMPATOP 225 EC and MCPA are applied as a tank mixture, the wheat must be between growth stage 7-13.
- Do not apply in heavy winds or when target is covered in dew (wet).
- Aerial dose rates may need to be higher than ground application.
- Minimum of 40 ℓ/ha is recommended for aerial applications
- Poor control may be obtained when weeds are under stress, therefore apply at correct stage for optimum control.
- To ensure optimum control apply at the correct stage of weed growth.

USE RATE†
- Apply 1.5 to 2.0 ℓ/ha solo or 0.6 – 0.75 ℓ/ha in a mixture with DISGRAN 750 WDG (triasulfuron)
- Use 1.5 ℓ/ha plus 500 mℓ/ha MCPA for weed control in wheat and barley (note growth stage)

REGISTRATION DETAILS†
CAMPATOP 225 EC
Active ingredient: Bromoxynil 225 g/ℓ
Reg. No. L5320, Act 36 of 1947
(toxic)

DISGRAN 750 WDG
Active ingredient: Triasulfuron (sulfonyl urea) 750 g/kg.
Reg. No. L7473, 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
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ALWAYS READ THE LABEL

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WINFIELD® UNITED

DIFLUDE 500 SC

HERBICIDE

Active ingredient: Diflufenican (nicotinanilide) 500 g/ℓ
(Reg. No. L9458, Act 36 of 1947)

A suspension concentrate pre- and post-emergence herbicide for the selective control of certain broad leaf weeds in wheat.

Figure 1. Raphanus raphanistrum,
Figure 2. Polygonum aviculare.

Features

- DIFLUDE 500 SC is an HRAC Group Code F1 Herbicide
- DIFLUDE 500 SC acts by inhibiting the enzyme phytoene desaturase (PDS) in the carotenoid biosynthesis pathway resulting in stunting, bleaching and finally necrosis in sensitive plants.
- Used at varying rates depending on the time of application and the stage of weeds growth at the time of application.
- Provides control of certain problem broad leaf weeds.
- May be applied pre- or early post emergent of weeds.
- Depending on the rate of application DIFLUDE 500 SC provides control of the following problem broad leaf weeds up to the 4 leaf stage: *Raphanus raphanistrum* (Wild radish) 90 – 100% control, *Anagallis arvensis* (Pimpernel) 90 – 100% control, Polygonum aviculare (Prostrate knotweed) 80 – 90% control and *Chenopodium album* (White goosefoot) 80 – 90% control.
- Compatible in a tank mixture with other grass and broad leaf herbicides (e.g. WRESTLER 800 EC, TRIFLURALIN 480 EC).

USE RATE†
- **Wheat** (ground application):
- Pre-emergence:
  200 mℓ/ha - Apply pre-plant or before broadcast sowing in tank mixture with TRIFLURALIN 480 EC or WRESTLER 800 EC. Refer to product labels for "DIRECTIONS FOR USE" and "USE RESTRICTIONS".
- Post-emergence:
  50mℓ/ha - Apply only to well-established wheat plants. Apply on wild radish plants smaller than the 2-leaf stage.
  150 mℓ/ha - Apply before weeds exceed the 4-leaf stage.

REGISTRATION DETAILS†
DIFLUDE 500 SC
Active ingredient: diflufenican (nicotinanilide) 500 g/ℓ.
Reg. No. L9458, Act 36 of 1947
(Caution)

WRESTLER 800 EC
Active ingredient: Prosulfocarb (thiocarbamate) 800 g/ℓ
Reg. No. L8758 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

TRIFLURALIN 480 EC
Active ingredient: Trifluralin (dinitroaniline) 480 g/ℓ
Reg. No. L4555, 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 ℓ,5 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

DIFLUDE 500 SC

Active ingredient: Diflufenican (nicotinanilide) 500 g/ℓ
(Reg. No. L9458, Act 36 of 1947)

A suspension concentrate pre- and post-emergence herbicide for the selective control of certain broad leaf weeds in wheat.

Do's and don'ts

- Necrosis may occur on wheat foliage after application of DIFLUDE 500 SC. The plants usually outgrow these symptoms and yields are not affected adversely.
- Crop damage may increase if the crop is stressed due to drought, cold, nutrient deficiency or insect/nematode damage.
- Apply only during moist conditions, when the weeds are actively growing.
- Poor weed control will be obtained when weeds are stressed or larger than specified for a specific dosage rate.
- Ensure thorough coverage of weeds when post-emergence applications are made.
- Do not apply DIFLUDE 500 SC alone in situations where weed resistance has been confirmed.
- Ineffective application of DIFLUDE 500 SC will lead to inferior weed control and may assist in development of herbicide resistance

HERBICIDE

USE RATE†
- **Wheat** (ground application):
- Pre-emergence:
  200 mℓ/ha - Apply pre-plant or before broadcast sowing in tank mixture with TRIFLURALIN 480 EC or WRESTLER 800 EC. Refer to product labels for "DIRECTIONS FOR USE" and "USE RESTRICTIONS".
- Post-emergence:
  50mℓ/ha - Apply only to well-established wheat plants. Apply on wild radish plants smaller than the 2-leaf stage.
  150 mℓ/ha - Apply before weeds exceed the 4-leaf stage.

REGISTRATION DETAILS†
DIFLUDE 500 SC
Active ingredient: diflufenican (nicotinanilide) 500 g/ℓ.
Reg. No. L9458, Act 36 of 1947
(Caution)

WRESTLER 800 EC
Active ingredient: Prosulfocarb (thiocarbamate) 800 g/ℓ
Reg. No. L8758 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

TRIFLURALIN 480 EC
Active ingredient: Trifluralin (dinitroaniline) 480 g/ℓ
Reg. No. L4555, 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 ℓ,5 ℓ

ALWAYS READ THE LABEL

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WINFIELD® UNITED

DISGRAN 750 WDG

Active ingredient: Triasulfuron (sulfonyl urea) 750 g/kg
(Reg. No. L7473, Act 36 of 1947)

A selective water-dispersible granular herbicide, packed in water-soluble bags, for the control of broad leaf weeds as indicated in wheat, oats and barley in the Western and Eastern Cape and wheat in the Free State.




Features

- DISGRAN 750 WDG is an HRAC group code B herbicide.
- DISGRAN 750 WDG functions by inhibiting plant amino acid synthesis leading ultimately to plant death.
- DISGRAN 750 WDG expands the control of difficult to control broad leaf weeds.
- Selectivity allows for product usage at varying growth stages without having to alter the weed control program.
- Compatible in a tank mixture with numerous other grass and broad leaf herbicides.
- Growth ceases immediately after uptake by the leaves of the weed.

Do's and don'ts

- Do not use DISGRAN 750 WDG on soils with a pH (H_2O) of 7 or higher, and/or on soils containing free lime.
- Re-cropping intervals must be taken into consideration if DISGRAN 750 WDG is to be used in a tank mixture with metsulfuron-methyl.
- For post-emergent applications, apply strictly when wheat, oats and barley are in the 2- to 6- leaf stage.
- The use of a suitable surfactant/penetrant in the spray mixture, will improve wetting and penetration of the leaf.

ALWAYS READ THE LABEL

HERBICIDE

USE RATE†

Wheat (ground applications):
- Pre-emergent application - 37.5 g/ha
  Pre plant application:
- 1.5 ℓ TRIFLURALIN 480 EC + 30 g/ha DISGRAN 750 WDG + 2.0 ℓ WRESTLER 800 EC (Apply pre-plant, pre-emergence).
  Split pre & post plant application:
- 1.5 ℓ TRIFLURALIN 480 EC pre-plant followed post plant* by
- 30 g DISGRAN 750 WDG + 2.0 ℓ WRESTLER 800 EC

Wheat and Barley (ground applications):
- Post-emergent application - 13 g/ha
- Post-emergent application of DISGRAN 750 WDG in tank mixtures
- 13 g/ha + 0.6 to 0.75 ℓ/ha CAMPATOP 225 EC and
- 13-15 g/ha + 7g/ha METSULFURON-METHYL 20 WG (wheat and barley only) (*Emex australis* control)

REGISTRATION DETAILS†

DISGRAN 750 WDG
Active ingredient: Triasulfuron (sulfonyl urea) 750 g/kg.
Reg. No. L7473, 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

TRIFLURALIN 480 EC
Active ingredient: Trifluralin (dinitroaniline) 480 g/ℓ
Reg. No. L4555, 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
150 g

RAMETREX 410 EC

Active ingredient: Bromoxynil (octanoate ester) 100 g/ℓ, dicamba (sodium salt) 30 g ae/ℓ & MCPA (iso-octyl ester) 280 g/ℓ (Reg. No. L 10080, Act 36 of 1947)

A selective emulsifiable concentrate herbicide for the post-emergence control of annual broad-leaved weeds as listed in wheat & barley.




Fig 1. Prostrate knotweed,
Fig 2. Spiney emex,
Fig 3. Wild radish,
Fig 4. Cape marigold.

Features

- RAMETREX 410 EC is an HRAC group code C3 and group code O Herbicide.
- RAMETREX 410 EC is a unique combination of 3 active ingredients with two different modes of action.
- RAMETREX 410 EC was developed as a specialist herbicide for controlling SU resistant wild radish (*Raphanus raphanistrum*) and spiney emex (*Emex australis*).
- Multiple modes of action:
  - Gives the product superior efficacy against a wide spectrum of broadleaf weeds.
  - Provides an opportunity to address difficult to control weeds with a single product.
  - Makes RAMETREX 410 EC an ideal candidate for use in IPM strategies aimed at combatting the development of resistance.

Do's and don'ts

- Apply RAMETREX 410 EC in the cotyledon to 3- leaf stage to effectively control wild radish, spiney emex, fumitory, prostrate knotweed and field speedwell.
- Do not apply later than the 6- leaf stage for the other listed weeds.
- Avoid application when weeds are covered with heavy dew.
- For effective weed control ensure thorough coverage of weeds. (Crop canopy could result in shielding of weeds from spray with poor control of low growing weeds such as spiney emex).
- Do not apply RAMETREX 410 EC by aerial application.
- Do not apply when rain is expected within the following 12 hours.
- Irrigation should be withheld for 48 hours after a RAMETREX 410 EC application.
- Apply during favorable growing conditions.
- Poor weed control may result if RAMETREX 410 EC is applied when weeds are stressed.

ALWAYS READ THE LABEL

HERBICIDE

USE RATE†
Wheat and Barley
- 1.4 ℓ/ha

REGISTRATION DETAILS†
RAMETREX 410 EC
Active ingredient: Bromoxynil (octanoate ester) 100 g/ℓ, dicamba (sodium salt) 30 g ae/ℓ & MCPA (iso-octyl ester) 280 g/ℓ
Reg. No. L 10080 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
20 ℓ

TRIFLURALIN 480 EC

Active ingredient: Trifluralin (dinitroaniline) 480 g/ℓ
(Reg. No. L4555, Act 36 of 1947)

A selective emulsifiable concentrate herbicide for pre-plant soil incorporation for the control of annual grasses, including herbicide resistant ryegrass *(Lolium spp)* and certain broad leaf weeds in wheat.




Features

- TRIFLURALIN 480 EC is an HRAC group code K1 herbicide.
- TRIFLURALIN 480 EC controls grasses in cereals when applied pre-emergence.
- The mechanism of action is the inhibition of cell mitosis on germinating grasses.
- TRIFLURALIN 480 EC is one of the most important and effective pre-plant herbicides, worldwide in cereal production.
- Control of ryegrass *(Lolium spp.)*, including ALS & ACCase resistant.
- Can be used in mixtures for better grass and broad leaf control (e.g. WRESTLER 800 EC and DISGRAN750 WDG).

Do's and don'ts

- Incorporate into soil within 10 minutes.
- Do not use in fields where seed was sown.
- Use only in fields planted using a suitable planter, Ausseeder (Ausplow), "Voorplanter" or a similar planter.
- Do not use on stony soils or fields with a slope.
- Avoid spraying TRIFLURALIN 480 EC if heavy rains are forecast.
- Always adhere to the waiting period for follow up crops.
- Follow up with alternative herbicides as post plant applications, within 2-3 days after planting and before emergence of weeds and crop.

ALWAYS READ THE LABEL

HERBICIDE

USE RATE†
Wheat and Barley
- Pre-plant application:
  TRIFLURALIN 480 EC: 1 - 2 ℓ/ha
- Pre-plant application:
  TRIFLURALIN 480 EC 1.5 ℓ/ha + WRESTLER 800 EC 2 ℓ/ha
  OR
  TRIFLURALIN 480 EC 1.5 ℓ/ha + WRESTLER 800 EC 2 ℓ/ha + DISGRAN 750 WDG 30 g/ha
- Split pre- & post-plant application:
  TRIFLURALIN 480 EC 1.5 ℓ/ha pre-plant followed post plant* by WRESTLER 800 EC 2 ℓ/ha
  OR
  TRIFLURALIN 480 EC 1.5 ℓ/ha pre-plant followed post plant* by WRESTLER 800 EC 2 ℓ/ha + DISGRAN 750 WDG 30 g/ha

REGISTRATION DETAILS†
TRIFLURALIN 480 EC
Active ingredient: Trifluralin (dinitroaniline) 480 g/ℓ
Reg. No. L4555, 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

DISGRAN 750 WDG
Active ingredient: Triasulfuron (sulfonyl urea) 750 g/kg.
Reg. No. L7473, Act 36 of 1947
(caution)

WRESTLER 800 EC
Active ingredient: Prosulfocarb (thiocarbamate) 800 g/ℓ
Reg. No. L8758 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
20 ℓ

WRESTLER 800 EC

HERBICIDE

Active ingredient: Prosulfocarb (thiocarbamate) 800 g/ℓ
(Reg. No. L8758, Act 36 of 1947)

An emulsifiable concentrate herbicide for pre- or post-plant soil application for the control of herbicide resistant annual ryegrass in wheat and barley.



Fig 1, 2 & 3 Lolium spp. (annual ryegrass)

Features

- WRESTLER 800 EC is an HRAC group code N herbicide.
- WRESTLER 800 EC is specifically aimed at the control of annual ryegrass (*Lolium spp.*) resistant to the post-emergence grass herbicides (fops and dims) and the sulfonyl urea herbicides in wheat and barley.
- WRESTLER 800 EC inhibits lipid synthesis, inhibiting growth in the meristematic region of weeds causing twisting and failure of leaf emergence.
- WRESTLER 800 EC is registered in a tank mix with TRIFLURALIN 480 EC (HRAC group code K1).
- The combination of these herbicides, with different modes of action, is an excellent resistance management strategy for the control of ryegrass.

Do's and don'ts

- WRESTLER 800 EC can only be applied if planting is performed with an Ausseeder (Ausplow) or a similar planter.
- WRESTLER 800 EC must not be applied directly onto the wheat/barley seed.
- Ensure that the seed is covered with a layer of 20 to 30 mm of soil after planting.
- Do not apply to fields with a risk of any stress conditions
- When applied in a tank mixture with TRIFLURALIN 480 EC adhere to the recommendations on the TRIFLURALIN 480 EC label.
- Where minimum tillage is practiced, stubble should be burned before planting.
- DISGRAN 750 WDG can be added to the tank mixture for improved control of broad leaf weeds.
- Avoid exclusive repeated use of herbicides from the same herbicide group code.
- Alternate or tank mix with products from different herbicide group codes.

USE RATE†
Wheat and Barley
- Pre-plant application:
  2 ℓ WRESTLER 800 EC +
  1.5 ℓ TRIFLURALIN 480 EC
  OR
- 2 ℓ WRESTLER 800 EC + 1.5 ℓ TRIFLURALIN 480 EC + 30g DISGRAN 750 WDG
- See label for "Split pre & post plant application.

REGISTRATION DETAILS†
WRESTLER 800 EC
Active ingredient: Prosulfocarb (thiocarbamate) 800 g/ℓ
Reg. No. L8758 Act 36 of 1947
(caution)

DISGRAN 750 WDG
Active ingredient: Triasulfuron (sulfonyl urea) 750 g/kg.
Reg. No. L7473, 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

TRIFLURALIN 480 EC
Active ingredient: Trifluralin (dinitroaniline) 480 g/ℓ
Reg. No. L4555, 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

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ALWAYS READ THE LABEL

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WINFIELD® UNITED

FUNGICIDE

Trade Name	Active Ingredient	Target Species
ACADEMY 250 SC	picoxystrobin (stobilurin)	Brown rust *(Puccinia triticina)*, stem rust *(Puccinia graminis)*, speckled leaf blotch *(Septoria spp.)*, powdery mildew *(Blumeria graminis)*
FACULTY TOP 250 SC	picoxystrobin (stobilurin) + prothioconazole (triazole)	Brown rust *(Puccinia triticina)*, eyespot *(Pseudocercosporella herpotrichoides)*, powdery mildew *(Blumeria graminis)*
IMPROVE 250 SC	azoxystrobin (strobilurin) + epoxiconazole (triazole)	Brown rust *(Puccinia triticina)*, stem rust *(Puccinia graminis)*, speckled leaf blotch *(Septoria spp.)*, eyespot *(Pseudocercosporella herpotrichoides)*, powdery mildew *(Blumeria graminis)*, yellow rust / stripe rust *(Puccinia striformis)*
SANTANA 480 SC	picoxystrobin (stobilurin)	Brown rust *(Puccinia triticina)*, stem rust *(Puccinia graminis)*, speckled leaf blotch *(Septoria spp.)*, powdery mildew *(Blumeria graminis)*
TEBUZOLE 250 EW	tebuconazole (triazole)	Brown rust *(Puccinia triticina)*, stem rust *(Puccinia graminis)*, speckled leaf blotch *(Septoria spp.)*, eyespot *(Pseudocercosporella herpotrichoides)*, Powdery mildew *(Blumeria graminis)*, yellow rust / stripe rust *(Puccinia striformis)*

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

FUNGICIDE

ACADEMY 250 SC

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

A suspension concentrate, systemic and translaminar action fungicide for the preventative control of diseases in wheat as indicated.

Features

- ACADEMY 250 SC is a FRAC group code 11 fungicide.
- ACADEMY 250 SC controls Brown rust *(Puccina triticina)*, stem rust *(Puccina graminis)*, speckled leaf and glume blotch *(Septoria spp.)* as well as powdery mildew *(Blumeria graminis tritici)* in wheat as well as, net blotch (Pyrenophora teres), leaf spot *(Rhynchosporium secalis)*, leaf rust *(Puccinia hordei)* and powdery mildew *(Blumeria graminis)* in barley.
- Picoxystrobin is the superior strobilurin fungicide in terms of broad-spectrum disease control in cereals.
- Picoxystrobin has unique redistribution properties, vapor activity towards the leaf base as well as acropetal to the leaf tips.
- Strobilurin (QoI's) fungicides improve the plants ability to assimilate CO_2 thereby enhancing the photosynthesis process.
- PHI: 35 days.

Do's and don'ts

- Apply the first application between the 5 and 7 leaf stage.
- Apply a second application 3 to 4 weeks later if disease pressure is evident (normally at flag leaf stage before appearance of the head).
- The first product application must be applied strictly preventative before any symptoms are noticed.
- Do not apply more than 2 ACADEMY 250 SC tank mixture treatments per season.

USE RATE†
Wheat and Barley
- 400 mℓ /ha PLUS 150 mℓ /ha SANTANA 480 SC plus LINK

Ground application
- 50 mℓ / 100 ℓ water (0.05 % LINK).

Aerial application
- 100 mℓ / 100 ℓ water (0.1 % LINK)

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

Registration holder:
Villa Crop Protection (Pty) Ltd. Co.
Reg. No. 1992/002474/07
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WINFIELD® UNITED

FUNGICIDE

FACULTY TOP 250 SC

Active ingredient: Picoxystrobin (strobilurin) 150 g/ℓ & prothioconazole (triazole) 100 g/ℓ
(Reg. No. L10213, Act 36 of 1947)

A suspension concentrate, systemic action fungicide for the preventative control of diseases in wheat as indicated.

Features

- FACULTY TOP 250 SC is a FRAC group code 11 and group code 3 fungicide.
- FACULTY TOP 250 SC controls brown rust *(Puccina triticina)*, eye spot *(Helgardia herpotrichoides)* and powdery mildew *(Blumeria graminis tritici)* in wheat.
- FACULTY TOP 250 SC is a unique formulation of two active ingredients, picoxystrobin *(strobilurin)* and prothioconazole *(triazole)*.
- Picoxystrobin is the superior strobilurin fungicide in terms of broad-spectrum disease control in cereals with unique redistribution properties, vapor activity towards the leaf base as well as acropetal movement to the leaf tips.
- Prothioconazole is a new generation Ergosterol Biosynthesis Inhibitor with outstanding translaminar action and excellent residual activity.
- Exceptional disease control on all major leaf diseases occurring in cereals.
- Ideal mix for anti-resistance management.
- PHI: 35 days.

Do's and don'ts

- Apply the first application between the 5 and 7 leaf stage.
- Apply a second application 3 to 4 weeks later if disease pressure is evident (normally at flag leaf stage before appearance of the head).
- The first product application must be applied strictly preventative before any symptoms are noticed.
  Do not apply more than two FACULTY TOP 250 SC tank mixture treatments per season.

USE RATE†
Ground application
- 700 mℓ/ha plus 50 mℓ/100ℓ water LINK; Apply in 200-300 ℓ water per hectare.

Aerial application
- 700 mℓ/ha plus 100 mℓ/100 ℓ water LINK; Apply in 30-40 ℓ water per hectare.

REGISTRATION DETAILS†
FACULTY TOP 250 SC
Active ingredient: Picoxystrobin (stobilurin) 150 g/ℓ & prothioconazole (triazole) 100 g/ℓ
Reg. No. L10213, 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
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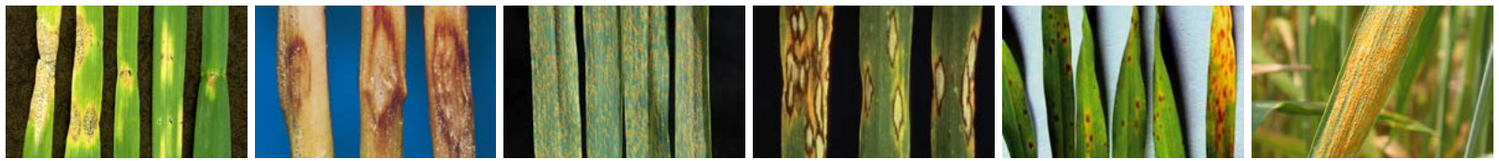
WINFIELD® UNITED

IMPROVE 250 SC

Active ingredient: Azoxystrobin (strobilurin) 125 g/ℓ
& epoxyconazole (triazole) 125 g/ℓ
(L9311 Act 369 of 1947)

A suspension concentrate fungicide with systemic action for the control of fungal diseases in wheat and barley.



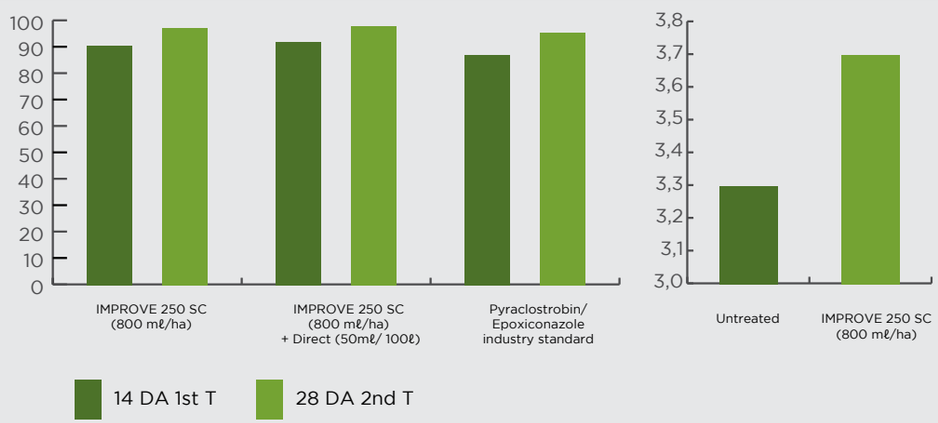


Fig. 1.1 (left): Summary of a trial in Riebeek-West showing the performance of IMPROVE 250 SC in controlling Powdery Mildew (Blumeria graminis tritici) in wheat. Graph shows the mean percentage (%) powdery mildew control at both 14 days after the first treatment (14 DA1stT) as well as 28 Days after the second treatment (28 DA2ndT) respectively

USE RATE†
Wheat and Barley
- 800 mℓ /ha plus 800 mℓ /ha plus LINK

Ground application:
- 50 mℓ / 100 ℓ water (0.05 % LINK)

Aerial application:
- 100 mℓ / 100 ℓ water (0.1 % LINK)

REGISTRATION DETAILS†
IMPROVE 250 SC
Active ingredient: Azoxystrobin (strobilurin) 125 g/ℓ & epoxyconazole (triazole) 125 g/ℓ
Reg. No. L9311, 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

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ALWAYS READ THE LABEL

IMPROVE 250 SC

Active ingredient: Azoxystrobin (strobilurin) 125 g/ℓ
& epoxyconazole (triazole) 125 g/ℓ
(Reg. No. L9311, Act 369 of 1947)

A suspension concentrate fungicide with systemic action for the control of fungal diseases in wheat and barley.

Features

- IMPROVE 250 SC is a FRAC group code 3 and group 11 fungicide.
- IMPROVE 250 SC controls brown rust *(Puccina triticina)*, stem rust *(Puccina graminis)*, speckled leaf and glume blotch *(Septoria spp.),* eyespot *(Pseudocercosporella herpotrichoides)* as well as powdery mildew *(Blumeria graminis tritici)* in wheat as well as, net blotch *(Pyrenophora teres)*, leaf spot *(Rhynchosporium secalis)*, leaf rust *(Puccinia hordei)* and powdery mildew *(Blumeria graminis)* in barley.
- IMPROVE 250 SC is a unique formulation of two highly effective active ingredients and is ideal as an anti-resistance management tool.
- Strobilurin (QoI's) fungicides are known for improving the plants ability to assimilate CO_2 thereby enhancing the photosynthesis process.
- Epoxiconazole is one of the best triazole compounds in cereal crop disease management.
- Provides exceptional levels of disease control on all major leaf diseases occurring in cereals.
- Provides excellent residual control in one ready formulated product.

Do's and don'ts

- Apply the first application between the 5- and 7-leaf stage.
- Apply a second application 3 to 4 weeks later if disease pressure is evident (normally at flag-leaf stage, before appearance of the head).
- The first product application must be applied strictly preventative before any symptoms are noticed.
- Ground application: Apply in 200 to 300 ℓ of water per hectare.
- Aerial application: Apply in 30 to 40 ℓ of water per hectare.
- Do not exceed two applications of IMPROVE 250 SC per season to avoid development of resistance.

ALWAYS READ THE LABEL

USE RATE†
Wheat and Barley
- 800 mℓ /ha plus 800 mℓ /ha plus LINK

Ground application:
- 50 mℓ / 100 ℓ water (0.05 % LINK)

Aerial application:
- 100 mℓ / 100 ℓ water (0.1 % LINK)

REGISTRATION DETAILS†
IMPROVE 250 SC
Active ingredient: Azoxystrobin (strobilurin) 125 g/ℓ & epoxyconazole (triazole) 125 g/ℓ
Reg. No. L9311, Act 36 of 1947 (caution)

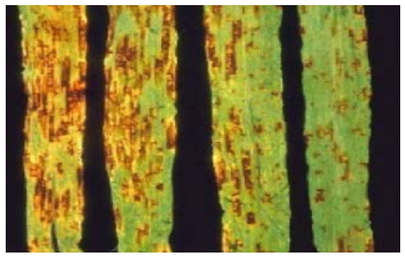
Registration holder:
Villa Crop Protection (Pty) Ltd. Co.
Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ

SANTANA 480 SC

Active ingredient: Prothioconazole (triazole) 480 g/ℓ
(Reg. No. L10049, Act 36 of 1947)

A suspension concentrate, systemic fungicide for the preventative control of diseases in wheat and barley.


Features

- SANTANA 480 SC is a FRAC group code 3 fungicide.
- Prothioconazole is a new generation Ergosterol Biosynthesis Inhibitor.
- Leads to structural and functional changes in the cell membrane, preventing production of new fungal cells.
- Rapid absorption with a long lasting action.
- Provides a high level of protective, curative and eradicative disease control.
- Ideal mixing partner for picoxystrobin (ACADEMY 250 SC)
- Low application rate thus less product needed for same efficacy as other triazoles.
- **Wheat:** Brown rust *(Puccina triticina)*, stem rust *(Puccina graminis)*, speckled leaf and glume blotch *(Septoria spp.)* as well as powdery mildew *(Blumeria graminis tritici)*.
- **Barley:** Net blotch (*Pyrenophora teres*), leaf spot *(Rhynchosporium secalis)*, leaf rust *(Puccinia hordei)* and powdery mildew *(Blumeria graminis)*.

Do's and don'ts

- Apply the first application between the 5 and 7 leaf stage as a STRICTLY PREVENTATIVE treatment before symptoms are present.
- Apply a second application 3 to 4 weeks later if disease pressure is evident (normally at flag leaf stage before appearance of the head).
- Do not apply SANTANA 480 SC (plus LINK) without the addition of ACADEMY 250 SC as the first application in a disease management programme when high disease pressure is expected.

ALWAYS READ THE LABEL

FUNGICIDE

USE RATE†

Ground Application
- 150mℓ /ha SANTANA 480 SC plus 400mℓ /ha Academy 250 SC plus 50mℓ /100 ℓ water LINK;
- Apply in 200-300 ℓ water per hectare

Aerial Application
- 150mℓ/ha SANTANA 480 SC plus 400mℓ/ha Academy 250 SC plus 100mℓ/100 ℓ water LINK;
- Apply in 30-40 ℓ water per hectare

REGISTRATION DETAILS†

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

ACADEMY 250 SC
Active ingredient: Picoxystrobin (strobilurin) 250 g/ℓ
Reg. No. L10034, 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

PACKAGING
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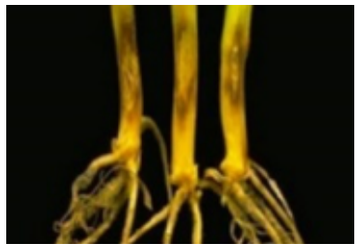
FUNGICIDE

TEBUZOLE 250 EW

Active ingredient: Tebuconazole (triazole) 250 g/ℓ
(Reg. No. L7551, Act 36 of 1947)

An emulsion oil in water fungicide with systemic action for the control of diseases on crops as listed.



Features

- TEBUZOLE 250 EW is a FRAC group code 3 fungicide.
- TEBUZOLE 250 EW controls brown rust *(Puccina triticina)*, stem rust *(Puccina graminis)*, Speckled leaf and glume blotch *(Septoria spp.)*, stripe rust (yellow rust) *(Puccinia striiformis)*, eye spot *(Pseudocercosporella herpotrichoides)* and powdery mildew *(Blumeria graminis tritici)* in wheat as well as, net blotch *(Pyrenophora teres = Helminthosporium spp.)* & halo spot *(Selenophoma donacis)*, leaf rust *(Puccinia hordei)* & powdery mildew *(Erysiphe graminis)* and leaf spot *(Rhynchosporium secalis)* in barley.
- TEBUZOLE 250 EW inhibits the biosynthesis of sterols, which are vital structural components of fungal cell membranes.
- Highly effective at preventing mycelium growth and preventing penetration of fungal spores into the plant.
- Tebuconazole is a broad-spectrum triazole fungicide.
- Provides exceptional levels of disease control on all major leaf diseases occurring in cereals.

Do's and don'ts

- Apply TEBUZOLE 250 EW at the first signs of the disease, before a 5% infection level is reached.
- In the case of a high yield potential or if symptoms re-appear a second/follow-up spray is recommended 3 weeks after initial spray.
- When treating glume blotch apply between 2nd node stage and ear emergence.
- Best results obtained if applied preventatively (when disease incidence is low).
- Do not apply product on crops under severe drought stress or when high infection pressure is present.

ALWAYS READ THE LABEL

USE RATE†

Wheat

- Eye spot & powdery mildew:
  750 mℓ/ha TEBUZOLE 250 EW
  (for both ground and aerial applications)
- Speckled leaf blotch & yellow rust:
  625 mℓ/ha TEBUZOLE 250 EW (ground)
  750 mℓ/ha TEBUZOLE 250 EW (aerial)
- Leaf rust & glume blotch:
  750 mℓ/ha TEBUZOLE 250 EW (ground)
  and 900 mℓ/ha TEBUZOLE 250 EW (aerial)
- Stem rust:
  825 mℓ/ha TEBUZOLE 250 EW (ground)
  and 950 mℓ/ha TEBUZOLE 250 EW (aerial)

Barley

- Net blotch & halo spot:
  750 mℓ/ha TEBUZOLE 250 EW (ground)
  and 900 mℓ/ha TEBUZOLE 250 EW (aerial)
- Leaf rust & powdery mildew:
  750 mℓ/ha TEBUZOLE 250 EW
  (for both ground and aerial applications)
- Leaf spot:
  500 mℓ/ha TEBUZOLE 250 EW
  (for both ground and aerial applications)

REGISTRATION DETAILS†
TEBUZOLE 250 EW
Active ingredient: Tebuconazole (triazole)
250 g/ℓ
Reg. No. – L 7551, 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
20 ℓ

ADJUVANT

Trade name	Active Ingriedient	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.
CLASS ACT NG	ammonium sulphate and non-ionic surfactant	For use with water-sensitive herbicides like glyphosate and products that require the use of a surfactant and/or ammonium sulphate.
COMMODOBUFF	organic acid and alkali	Buffering agent for correction of pH.
DIRECT	polyether-polymethylsiloxane-copolymer, vegetable oils	A non-ionic adjuvant with spreading and penetrating properties for use with post-emergence agrochemical applications.
INTERLOCK	vegetable oils, polyoxy ethylene fatty acid esters	Deposition-agent adjuvant that improves spray deposition and canopy penetration while reducing spray drift and evaporation of spray droplets.
VELOCITY-DRYMAX	ammonium sulphate	Use with glyphosate to complex antagonistic ions in spray water.
VILLA 51	isotridecanol	A surfactant that increases the wetting and spreading properties of spray solutions and enhances the activity of various pesticides.

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

AQUABUFF PLUS

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

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.

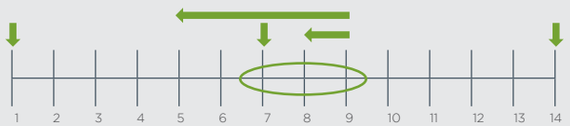


Figure 1: pH-Scale

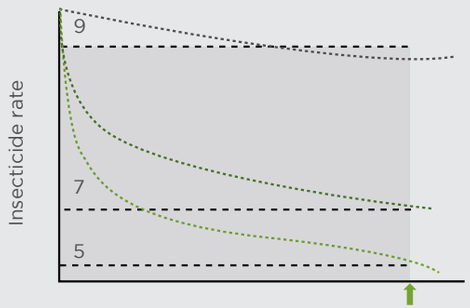


Figure 2: Alkaline hydrolysis

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.
- 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.
Co. Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
5 ℓ, 20 ℓ

CLASS ACT NG

Active ingredient: Ammonium sulphate + non-ionic surfactant 480 g/ℓ
(Reg No. L10477, Act 36 of 1947)

CLASS ACT NG is an adjuvant that contains ammonium sulphate, a non-ionic surfactant and has humectant properties for use with water-sensitive herbicides like glyphosate and products that require the use of a surfactant and/or ammonium sulphate.

Figure 1: Faster & more effective glyphosate control

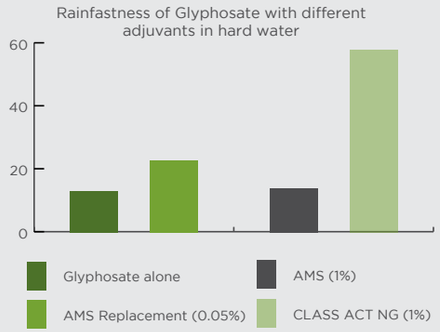


Figure 2: Rainfastness of glyphosate

Features

- Contains the patented CornSorb Technology.
- Highly extended droplet drying time.
- Moist droplet deposit increases absorption speed and amount.
- Contains a full rate of surfactant for droplet spreading and increased absorption.
- Faster control.
- More effective control on hardy weeds.
- Contains ammonium sulphate to negate salt antagonism.
- Registered with leading brand name glyphosate products.

Do's and don'ts

- Use with glyphosate and other salt-sensitive herbicides.
- Do not use as a standard practice with all herbicides.
- Add to the spray tank before the herbicide.

USE RATE†
- 1 – 2 % (1 – 2 ℓ /100 ℓ spray solution).
- For use with glyphosate pre-plant burndown and other herbicides that recommend the use of ammonium sulphate adjuvants.
- Use the higher rate in cases where additional coverage is required e.g. resilient weeds or weeds with hairy or waxy surfaces.
- Use the higher rate when spray water contains high levels of calcium, magnesium, sodium and potassium, therefore hard or brackish water.

REGISTRATION DETAILS†
CLASS ACT NG
Active ingredient: Ammonium sulphate 480g/ℓ
Reg. No. L10477, Act 36 of 1947 (caution)

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

PACKAGING
10 ℓ

ALWAYS READ THE LABEL

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.

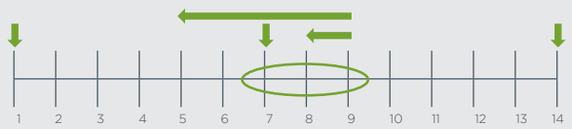


Figure 1: pH-Scale

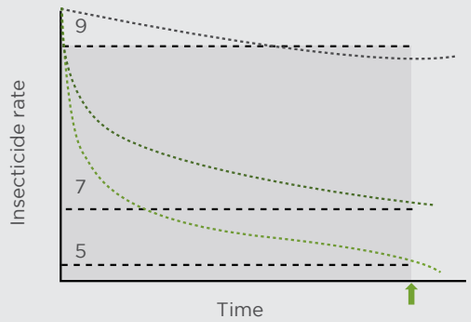


Figure 2: Alkaline hydrolysis

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 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
5 ℓ, 20 ℓ

ALWAYS READ THE LABEL

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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.

Figure 1: Used with certain fungicides on diseases

Features

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

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.

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.
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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INTERLOCK

Active ingredient: Vegetable oils, polyoxy ethylene fatty acid esters 880 g/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.

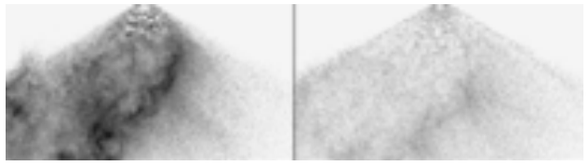

Figure 1: XR nozzle without and with Interlock

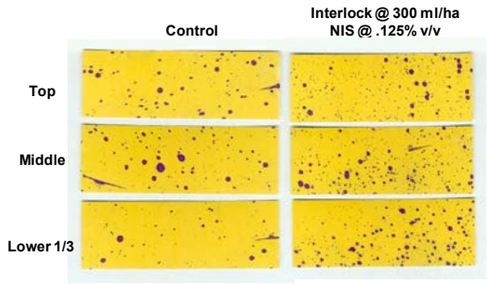

Figure 2: Depth of canopy penetration with Interlock applied to a canopied crop

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.

ADJUVANT

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 tank.
- Can be used with most Villa crop protection products.

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

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

PACKAGING
10 ℓ

ALWAYS READ THE LABEL

VELOCITY-DRYMAX

Active ingredient: Ammonium sulphate 1000 g/kg
(Reg No. L9454, Act 36 of 1947)

A granular formulation that will slightly reduce alkaline water pH, complex certain antagonistic ions in carrier water and enhance the activity and compatibility of foliar applied herbicides such as glyphosate.

Figure 1: Glyphosate alone and with VELOCITY-DRYMAX

Features

- Overcomes salt antagonism of glyphosate and other salt-sensitive herbicides.
- 100 % concentration dry formulation – less transport cost, less storage space.
- Rate calculation according to water analysis or EC.
- Registered with leading glyphosate brand names.

Do's and don'ts

- Add to the spray tank first, before glyphosate or any other sensitive herbicide.
- Pre-solubilize in a small amount of water before adding to the spray tank.
- It is not necessary to also add buffers to glyphosate spray solutions.
- There is no need to let the tank mixture stand for any period of time in order for the VELOCITY-DRYMAX to bind the antagonistic salts. The reaction occurs during droplet drying.

ADJUVANT

USE RATE†
- 0.25 - 1 % (0.25 – 1 kg/100 ℓ spray solution).
- If an EC measurement or water analysis is available, a calculated rate can be recommended.
- For use with glyphosate pre-plant burndown or any other herbicide that is antagonized by salts in carrier water.

REGISTRATION DETAILS†
VELOCITY-DRYMAX
Active ingredient: Ammonium sulphate 1000 g/kg
Reg. No. L9454, 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
10 kg

ALWAYS READ THE LABEL

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VILLA 51

ADJUVANT

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

Villa 51 is a surfactant that increases the wetting and spreading properties of spray droplets and enhances the activity of various crop protection products.

Figure 1: Droplet spreading with Villa 51 on the right

Features

- Standard surfactant in the industry.
- Excellent spreading.
- Helps with the absorption process.
- Wide rate range.
- Used with certain post-emerge herbicide applications.
- Registered with leading brand name crop protection products.

Do's and don'ts

- Use with post-emerge herbicide applications.
- Use when a surfactant is recommended.
- Add to the spray tank after the crop protection products.

USE RATE†
- Normally 0.1 % (100 mℓ/100 ℓ spray solution). Up to 0.25% with certain herbicides.

REGISTRATION DETAILS†
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.
Co. Reg. No. 1992/002474/07
PO Box 10413, Aston Manor, 1630.
Tel. (011) 396-2233

PACKAGING
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PLANT GROWTH REGULATOR

Trade name	Active Ingriedient	Target Species
KELP-X5	Natural free indole acetic acids	Plant growth promoter

↑ **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

- Allow at least 14 days between applications.
- Ensure final mixture in tank is below pH 7.
- Reduce dosage by 50% on low fertility and unbuffered soil.

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

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 470ml of PROTANK LUQUID CLEANER.

Smaller tanks

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

REGISTRATION DETAILS†

PROTANK LUQUID CLEANER

Active ingredient: Proprietary blend of phosphate and carbonate salts, sequestering agents, surfactants and solvents.

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

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CEREAL GROWTH STAGE SPRAY PROGRAMME
INSECTICIDE
HERBICIDE
FUNGICIDE
ADJUVANT
PLANT GROWTH REGULATOR
TANK CLEANER