

TOMATO PRODUCT RANGE

SOUTH AFRICA

PRODUCT	WITHOLDING PERIODS (Minimum number of days between last application and harvest)	Broadleaf weeds and Grasses	Whiteflies (Sweet potato whitefly and Greenhouse whitefly)	American Leaf Miner	Semi Looper larvae	African bollworm (larvae)	Cutworm	Tomato leafminer moth (larvae)	Aphids	Thrips	Red spider mite	Potato tuber moth	Early blight	Grey rot
SOLIDA® 250 WG	30	X												
BENEVIA® 100 OD	1		X	X	X	X								
CORAGEN®	1				X	X		X						
FYFANON™ 440 EW	1								X	X				
PREVATHON® 5 SC	1				X	X		X						
RUFAS® EW	3										X			
STEWARD® 150 EC	1				X	X		X				X		
VANTEX® 60 CS	2				X	X	X							
ROVRAL® FLO	3												X	X

USE PLANT PROTECTION PRODUCTS SAFELY AND WITH RESPONSIBLE CARE. PLEASE ALWAYS FOLLOW THE LABEL WHEN APPLYING PLANT PROTECTION PRODUCTS.



An Agricultural
Sciences Company

HERBICIDES

SOLIDA® 250 WG

REGISTRATION N°	L8892, Act No. 36 of 1947
COMPOSITION	Rimsulfuron (sulfonyl urea) 250 g/kg
FORMULATION	A water dispersible granular herbicide for post-emergent control of various annual weeds as listed in potatoes and tomatoes.
HRAC GROUP	2
PACKAGING	12 x 500 g

WEEDS CONTROLLED

The following weeds are normally controlled by an application of **SOLIDA® 250 WG**.

WEED	COMMON NAME	BOTANICAL NAME
Broadleaves	Pigweed	<i>Amaranthus spp.</i>
	Field bindweed	<i>Convolvulus arvensis</i>
	Spiny emex	<i>Emex australis</i>
	Drug fumitory	<i>Fumaria muralis</i>
	Wild radish	<i>Raphanus raphanistrum</i>
	Dwarf marigold	<i>Schkurbia pinnata</i>
	Pretoria sida	<i>Sida rhombifolia</i>
	Spurry	<i>Spergula arvensis</i>
	Chick weed	<i>Stellaria media</i>
	Common dubbeltjie	<i>Tribulus terrestris</i>
	Broadleaved Purple Vetch	<i>Vicia sativa</i>
	Grasses	Common wild oats
Common buffalo grass		<i>Panicum maximum</i>
Vlei panicum		<i>Panicum schinzii</i>
Small carrot seed grass		<i>Tragus berteronianus</i>

APPLICATION

Apply by means of tractor mounted boom sprayer or knapsack sprayer which is correctly calibrated to deliver at least 200 l spray mixture/ha at a constant speed and pressure (100-200 kPa) to ensure an even delivery. Avoid overlapping of swaths and close the nozzles during starting, slow movement, turning and stopping to prevent over-application. Ensure that application equipment is fully operational and correctly calibrated before commencing with the spray programme.

CROP	DOSAGE	REMARKS
Tomato	90 g per ha + surfactant: Break-Thru® at 0.5% or Armoblén 650 at 0.1-0.2% or Agripon Super at 2-3 l per ha.	Do not spray onto direct seeded tomatoes before the 4 leaf stage. Apply as a post-emergence spray to actively growing young weeds in the 3-6 leaf stage. Treat grasses before the tillering stage.

INSECTICIDES

BENEVIA® 100 OD

REGISTRATION N°	L10390, Act No. 36 of 1947
COMPOSITION	Cyantraniliprole (anthranilic diamide) 100 g/l
FORMULATION	An oil dispersion formulation insecticide used for the control of a range of chewing and sucking insect pests in crops as listed.
IRAC GROUP	28
PACKAGING	10 x 1 l; 20 x 250 ml

PEST	DOSAGE/ha	REMARKS
Whiteflies Sweet potato whitefly (<i>Bemisia tabaci</i>) and Greenhouse whitefly (<i>Trialeurodes vaporariorum</i>)	50 ml/ha Spray mixture OR (500 ml/ha for concentrated mistblower applications)	PREVENTIVE/EARLY CORRECTIVE APPLICATION Apply BENEVIA® 100 OD in 500 - 2000 l of water per hectare ensuring good coverage of all foliage. For reduced spray volume concentrated applications with mistblower apply BENEVIA® 100 OD at a dosage rate of 500 ml/ha in a minimum spray volume of 500 l spray mixture per hectare. Apply BENEVIA® 100 OD when the first whitefly adults or nymphs are observed. A suitable adjuvant at the recommended rates should be added to improve coverage. A second application should be made 7 days later. A maximum of 2 consecutive applications of BENEVIA® 100 OD should be made to the crop. Further application(s) must be with an effective product with a different mode of action (non-Group 28 insecticide). See Best practices for resistance management of Group 28 insecticides in the RESISTANCE WARNING section on this label.
American Leaf Miner (<i>Liriomyza trifolii</i>)	35 - 50 ml/ha Spray mixture OR (350 -500 ml/ha for concentrated mistblower applications)	PREVENTIVE/EARLY CORRECTIVE APPLICATION Apply BENEVIA® 100 OD in 500 - 2000 l of water per hectare ensuring good coverage of all foliage. Use the higher rate of BENEVIA® 100 OD with corrective applications if infestation levels are high. The lower rate should be applied for the second consecutive application of BENEVIA® 100 OD . For reduced spray volume concentrated applications with mistblower apply BENEVIA® 100 OD at a dosage rate of 500 ml/ha (350 ml/ha for second consecutive spray) in a minimum spray volume of 500 l spray mixture per hectare. Commence BENEVIA® 100 OD applications when the first puncture marks (first signs of infestation) are observed on the leaves. A suitable adjuvant at the recommended rates should be added to improve coverage. A second application should be made 7 - 14 days later (Use shorter spray interval under conditions of high infestation pressure or early in the growth season when plants are growing actively). A maximum of 2 consecutive applications of BENEVIA® 100 OD should be made to the crop. Further application(s) must be with an effective product with a different mode of action (non-Group 28 insecticide). See Best practices for resistance management of Group 28 insecticides in the RESISTANCE WARNING section on this label.
Semi Looper larvae (<i>Chrysodeixis acuta</i>) and African bollworm larvae (<i>Helicoverpa armigera</i>)	35 ml/ha OR (350 ml/ha for concentrated mistblower applications)	EARLY CORRECTIVE APPLICATION Apply BENEVIA® 100 OD in 500 - 2000 l of water per hectare ensuring good coverage of all foliage. For reduced spray volume concentrated applications with mistblower apply BENEVIA® 100 OD at a dosage rate of 350 ml/ha in a minimum spray volume of 500 l spray mixture per hectare. A suitable adjuvant at the recommended rates should be added to improve coverage. Regular scouting of tomato fields is essential to determine the timing of the first and subsequent application if necessary. BENEVIA® 100 OD can be applied as a second consecutive application 7 to 14 days later under conditions of continuous re-infestation. A maximum of 2 consecutive applications of BENEVIA® 100 OD should be made to the crop. Further application(s) must be with an effective product with a different mode of action (non-Group 28 insecticide). See Best practices for resistance management of Group 28 insecticides in the RESISTANCE WARNING section on this label.

INSECTICIDES

CORAGEN®

REGISTRATION N°	L8529, Act No. 36 of 1947
COMPOSITION	Chlorantraniliprole (anthranilic diamide) 200 g/ℓ
FORMULATION	A suspension concentrate stomach and contact insecticide for the control of various insect pests on a variety of crops as listed.
IRAC GROUP	28
PACKAGING	10 x 1 ℓ; 20 x 200 ml

PEST	DOSAGE/ha	REMARKS
Tomato semi-looper (larvae) <i>(Chrysodeixis acuta)</i> African bollworm (larvae) <i>(Helicoverpa armigera)</i>	20 ml/hℓ OR (200 ml/ha for concentrated mist blower applications)	EARLY CORRECTIVE APPLICATION Apply CORAGEN® in 500-1500 ℓ of water per hectare. Good coverage of all foliage is essential. For reduced spray volume concentrated applications with mistblower apply CORAGEN® at a dosage rate of 200 ml/ha in a minimum spray volume of 500 ℓ spray mixture per hectare. Apply CORAGEN® when the first larvae are observed - normally around the fruit set stage of the crop. Do not exceed 3 applications per season in total of CORAGEN® . The alternation of CORAGEN® with products having a different mode of action (e.g. STEWARD® 150 EC) is recommended. Please see important notes below.
Tomato leafminer moth (larvae) <i>Tuta absoluta</i> NOTE: Tomato Leaf Miner Moth (<i>Tuta absoluta</i>) is a very destructive pest with the main host being tomatoes and can potentially occur through all the production areas of South African.	20 ml/hℓ OR (200 ml/ha for concentrated mist blower applications)	EARLY CORRECTIVE APPLICATION Apply CORAGEN® in 500-1500 ℓ of water per hectare. Good coverage of all foliage is essential. For reduced spray volume concentrated applications with mistblower apply CORAGEN® at a dosage rate of 200 ml/ha in a minimum spray volume of 500 ℓ spray mixture per hectare. For best leaf and fruit protection, apply during egg-laying or when first erosions are visible on younger leaves. Do not exceed 3 applications per season in total of CORAGEN® . The alternation of CORAGEN® with products having a different mode of action (e.g. STEWARD® 150 EC) is recommended. Please see important notes below.

IMPORTANT NOTES ON THE CONTROL OF TOMATO SEMI-LOOPER, AFRICAN BOLLWORM AND TOMATO LEAF MINER MOTH (*Tuta absoluta*) LARVAE ON TOMATOES:

Regular scouting of tomato fields is essential to determine the timing of the first and subsequent applications if necessary. **CORAGEN®** can be applied in an 8 to 14 day interval programme under conditions of continuous re-infestation of semi-looper and bollworm. Use the shorter interval early in the growth season when plants are growing actively. Use a 7 day spray interval for *Tuta absoluta*. **CORAGEN®** applied in a 7 day spray interval program will result in a 50-80% reduction of American Leaf Miner (*Liriomyza trifolii*) under low to medium pest pressure. Under high American Leaf Miner pressure alternate **CORAGEN®** with a product specifically registered and effective against the pest. Do not exceed 3 applications per season in total of **CORAGEN®**. The alternation of **CORAGEN®** with products having a different mode of action (e.g. STEWARD® 150 EC) is recommended. Apply 2 of **CORAGEN®** applications consecutively (= block application) before going over to products with other modes of action e.g. STEWARD® 150 EC). Most beneficial insects are unaffected by applications of **CORAGEN®**. The addition of an adjuvant / wetter e.g. Trend® 90, Villa 51, or Entree at rates recommended on the particular products' label is recommended to improve coverage. Tomatoes can be harvested 1 day after application. Do not exceed a maximum of 600 ml/ha **CORAGEN®** in total per season in tomatoes.

INSECTICIDES

VANTEX® 60 CS

REGISTRATION N°	L7227, Act No. 36 of 1947
COMPOSITION	Gamma-cyhalothrin (pyrethroid) 60 g/l
FORMULATION	A capsule suspension contact and stomach insecticide for agricultural use in crops as indicated.
IRAC GROUP	3 A
PACKAGING	12 x 1 l; 40 x 250 ml

PEST	DOSAGE	REMARKS
African bollworm (<i>Helicoverpa armigera</i>) and Semi-looper (<i>Chrysodexis acuta</i>)	3,5 ml/ha	Ground application: Apply as a full cover spray at the first signs of infestation. Repeat the application at 7 - 10 day intervals or as directed by inspection of the crop. Apply 500 - 1 000 l spray mixture / ha. Use lower spray volume of 500 l / ha for plants smaller than 1 m and higher spray volume for taller plants. See "Warnings" - Warning against resistance.
Cutworm (<i>Agrotis spp.</i>)		Soil must be well-prepared - free of clods and excessive plant debris. Apply pre- or post-emergence. Apply ONLY if the top 3 cm of soil is moist. Where high cutworm populations is expected (minimum tillage), monitor infestations for follow-up applications.
	0,1 ml/100 m row	PREVENTIVE APPLICATION (PRE-EMERGENCE): Ground application: Row treatment: Apply in at least 3 l water/100 m in a 30 cm wide band over row.
	30 ml	Overall application: Apply in 300 l water/ha.
	30 ml	Aerial application: Apply in 30 l water/ha.
	0,1 ml/100 m	CORRECTIVE APPLICATION (POST-EMERGENCE): Ground application: Row treatment: Apply in at least 3 l water/100 m in a 30 cm wide band over the row.
	30 ml	Overall application: Apply in 300 l water/ha.
	30 ml	Aerial application: Apply in 30 l water/ha.

RUFAS® EW

REGISTRATION N°	L6585, Act No. 36 of 1947
COMPOSITION	Acrinathrin (norpyrethric ester) 75 g/l
FORMULATION	An oil in water emulsion: Stomach and contact acaricide for the control of Red spider mite on tomatoes cultivated in glasshouses and tunnels and thrips on citrus.
IRAC GROUP	3
PACKAGING	200 ml, 500 ml, 1 l, 2 l, 5 l

PEST	DOSAGE	REMARKS
Grown in glasshouses or tunnels Red spider mite (<i>Tetranychus spp</i>)	40 ml/100 l water	NB: See warning against mite resistance under "RESISTANCE WARNING". Apply when mites reach an index of 0,5. Apply as a full cover spray. Ensure thorough wetting of both sides of the leaves with particular attention to underleaf coverage. When an index of 0,5 is reached again, follow-up with an acaricide from another Group Code. High indexes are not conducive to good mite control and should be avoided. SEE SCOUTING METHOD AND MITE INDEX.

SCOUTING METHOD AND MITE INDEX FOR TOMATOES

Sample 50 leaves, randomly. For each plant choose 3 leaves, 1 in the middle and 2 at the top of the plant. Count the number of adult females (visible red stages) on the 3 leaves and record as follows:- 0 mites = 0; 1 - 10 Mites = 1; 11 - 30 Mites = 2; more than 30 = 3. Population index = Total divided by the number of plants inspected. Start spraying when a population index of 0,5 per plant has been reached and repeat whenever a substantial increase is recorded. The aim is to keep the infestation score below a mean of 2 per plant.

INSECTICIDES

PREVATHON® 5 SC

REGISTRATION N°	L9150, Act No. 36 of 1947
COMPOSITION	Chlorantraniliprole (anthranilic diamide) 51.7 g/l
FORMULATION	A suspension concentrate stomach and contact insecticide for the control of various insect pests on a variety of crops as listed.
IRAC GROUP	28
PACKAGING	20 x 500 mL; 20 x 200 mL

PEST	DOSAGE/ha	REMARKS
Tomato semi-looper (larvae) <i>(Chrysodeixis acuta)</i> African bollworm (larvae) <i>(Helicoverpa armigera)</i>	80 mL/ha OR (800 mL/ha for concentrated mist blower applications)	EARLY CORRECTIVE APPLICATION Apply PREVATHON® 5 SC in 500 -1500 l of water per hectare. Good coverage of all foliage is essential. For reduced spray volume concentrated applications with mistblower apply PREVATHON® 5 SC at a dosage rate of 800 mL/ha in a minimum spray volume of 500 l spray mixture per hectare. Apply PREVATHON® 5 SC when the first larvae are observed - normally around the fruit set stage of the crop. Please see important notes below.
Tomato leafminer moth (larvae) <i>Tuta absoluta</i> NOTE: Tomato Leaf Miner Moth (<i>Tuta absoluta</i>) is a very destructive pest with the main host being tomatoes and can potentially occur through all the production areas of South Africa.	80 mL/ha OR (800 mL/ha for concentrated mist blower applications)	EARLY CORRECTIVE APPLICATION Apply PREVATHON® 5 SC in 500-1500 l of water per hectare. Good coverage of all foliage is essential. For reduced spray volume concentrated applications with mistblower apply PREVATHON® 5 SC at a dosage rate of 800 mL/ha in a minimum spray volume of 500 l spray mixture per hectare. For best leaf and fruit protection apply PREVATHON® 5 SC during egg-laying or when first erosions are visible on younger leaves. Please see important notes below.

IMPORTANT NOTES ON THE CONTROL OF TOMATO SEMI-LOOPER, AFRICAN BOLLWORM AND TOMATO LEAF MINER MOTH (*Tuta absoluta*) LARVAE ON TOMATOES:

Regular scouting of tomato fields is essential to determine the timing of the first and subsequent applications if necessary. **PREVATHON® 5 SC** can be applied in an 8 to 14 day spray interval programme under conditions of continuous re-infestation of semi-looper and bollworm. Use the shorter interval early in the growth season when plants are growing actively. Use a 7 day spray interval for *Tuta absoluta*. **PREVATHON® 5 SC** applied in a 7 day spray interval program will result in a 50-80% reduction of American Leaf Miner (*Liriomyza trifolii*) under low to medium pest pressure. Under high American Leaf Miner pressure alternate **PREVATHON® 5 SC** with a product specifically registered and effective against the pest. Do not exceed 3 applications per season in total of **PREVATHON® 5 SC**. The alternation of **PREVATHON® 5 SC** with products having a different mode of action (e.g. **STEWARD® 150 EC**) is recommended. Apply 2 of **PREVATHON® 5 SC** applications consecutively (= block application) before going over to products with other modes of action e.g. e.g. **STEWARD® 150 EC**). Most beneficial insects are unaffected by applications of **PREVATHON® 5 SC**. The addition of an adjuvant / wetter e.g. Trend® 90, Villa 51, or Entree at 50 mL/100 l of spray mixture is recommended to improve coverage. Tomatoes can be harvested 1 day after application. Do not exceed a maximum of 2400 mL/ha **PREVATHON® 5 SC** in total per season in tomatoes.

INSECTICIDES

STEWARD® 150 EC

REGISTRATION N°	L8435, Act No. 36 of 1947
COMPOSITION	Indoxacarb (Oxadiazine) 150 g/l
FORMULATION	An emulsifiable concentrate stomach and contact insecticide for the control of various insect pests in several crops as indicated.
IRAC GROUP	22 A
PACKAGING	10 x 1 l; 20 x 200 ml

PEST	DOSAGE/ha	REMARKS
<p>African bollworm (larvae) (<i>Helicoverpa armigera</i>)</p> <p>Tomato semi-looper (larvae) (<i>Chrysodeixis acuta</i>)</p>	<p>GROUND APPLICATION: 300 ml/ha (when applying >1000 l spray mixture per ha, use 30 ml/100 l water)</p>	<p>CORRECTIVE FOLIAR APPLICATION: Apply at 500–1500 l of spray mixture per hectare. Good coverage of all foliage is essential. In the case of trellised tomatoes both sides of the tomato row must be sprayed. Apply when the first larvae are observed – normally around the fruit-set stage of the crop. STEWARD® 150 EC will control larvae of all stages of development. Please see important notes below.</p>
<p>Potato tuber moth (leaf miner larvae) (<i>Phthorimaea operculella</i>)</p>	<p>GROUND APPLICATION: 300 ml/ha (when applying >1000 l spray mixture per ha, use 30 ml/100 l water)</p>	<p>EARLY CORRECTIVE FOLIAR APPLICATION: Apply at 500–1500 l of spray mixture per hectare. Good coverage of all foliage is essential. In the case of trellised tomatoes both sides of the tomato row must be sprayed. Apply as soon as the first symptoms of infestation (mines) appear on the leaves or when the presence of moths is observed. The presence of these moths in and around the foliage is normally a good indication that an infestation will take place. Please see important notes below.</p>
<p>Tomato leaf miner moth (larvae) (<i>Tuta absoluta</i>)</p>	<p>GROUND APPLICATION: 300 ml/ha (when applying >1000 l spray mixture per ha, use 30 ml/100 l water)</p>	<p>EARLY CORRECTIVE FOLIAR APPLICATION: Apply at 500–1500 l of spray mixture per hectare. Good coverage of all foliage is essential. In the case of trellised tomatoes both sides of the tomato row must be sprayed. Monitor the adult moth flights. Start application at egg-hatching or when the very first erosions by the newly hatched larvae are visible. Should additional applications be needed, reapply at 7 day intervals. STEWARD® 150 EC has an efficacy of around 85% against <i>Tuta absoluta</i> larvae. The addition of a suitable registered adjuvant can increase the efficacy to about 95% due to improved penetration of the active ingredient into the leaves. Please see important notes below.</p>

IMPORTANT NOTES APPLICABLE TO AFRICA BOLLWORM, TOMATO SEMI-LOOPER, POTATO TUBER MOTH AND TOMATO LEAF MINER MOTH LARVAE ON TOMATOES:

Regular scouting of tomato fields is essential to determine the timing of the first and subsequent applications if necessary. **STEWARD® 150 EC** can be applied in an 8–14 day interval spray programme under conditions of continuous re-infestation of African Bollworm, tomato semi-looper or potato tuber moth. Use the shorter interval early in the growth season when plants are growing actively. Use a 7 day spray interval for *Tuta absoluta*. Do not exceed 4 applications per season with **STEWARD® 150 EC**. The alternation of **STEWARD® 150 EC** with insecticides that have a different mode of action is recommended. Apply 2 **STEWARD® 150 EC** applications consecutively (= block application) before switching to products with other modes of action. Most beneficial insects are unaffected by applications of **STEWARD® 150 EC**. The addition of an adjuvant / wetter e.g. Trend® 90 at 75 ml/100 l, Villa 51 at 50 ml/100 l of spray mixture is recommended to improve coverage. Tomatoes may be harvested 1 day after application.

INSECTICIDES

FYFANON™ 440 EW

REGISTRATION N°	L9484, Act No. 36 of 1947
COMPOSITION	Mercaptothion (organophosphate) 440 g/l
FORMULATION	An oil in water emulsion contact and stomach insecticide for the control of pests as indicated.
IRAC GROUP	1 B
PACKAGING	4 x 5 l

PEST	DOSAGE	REMARKS
Aphid (<i>Toxoptera citricida</i>)	140 ml/100 l water	Apply as a full cover spray when pest is noticed and repeat application if necessary.
Thrips (<i>Scirtothrips aurantii</i>)	200 ml/100 l water	Apply as a full cover spray when required.

FUNGICIDES

ROVRAL® FLO

REGISTRATION N°	L1046, Act No. 36 of 1947
COMPOSITION	Iprodione (dicarboximide) 255 g/l
FORMULATION	A fungicide formulated as a suspension concentrate for the control of diseases mentioned on crops as listed.
FRAC GROUP	2
PACKAGING	4 x 5 l

DISEASE	DOSAGE	REMARKS
Grey rot (<i>Botrytis cinerea</i>)	200 ml /100 l water	Apply as a full cover spray ensuring thorough coverage of the fruit. Begin spraying when conditions favour disease development and repeat at 14-day intervals. Do not exceed 3 applications of ROVRAL® FLO per season.
Early blight (<i>Alternaria solani</i>) and Grey rot (<i>Botrytis cinerea</i>)	200 ml ROVRAL® FLO + 200 g mancozeb WP or WG / 100 l water	Apply as a full cover spray ensuring thorough wetting. Begin spraying when conditions favour disease development and repeat at 7-day intervals. The application of this tank mixture will also provide preventive control of late blight (<i>Phytophthora infestans</i>). Do not exceed 3 applications of ROVRAL® FLO, alone or in tank-mixture, per season.