



An Agricultural Sciences Company

# GRAPE PRODUCT RANGE

## SOUTH AFRICA

PRODUCT	WITHHOLDING PERIODS (Minimum number of days between last application and harvest)	Broadleaf weeds	False Codling Moth (larvae)	Mediterranean Fruit fly	Budmite	Nematodes	African bollworm	Banded Fruit Weevil	Leafhoppers	False Codling Moth	Weevils (Snout beetles)	Botrytis	Powdery mildew
AURORA® 40 WG	None	X											
CORAGEN®	3 (Table)		X										
ALTACOR®	3 (Table)		X				X						
EXIREL® 100 SE	10			X									
MARSHAL® 48 EC	84				X								
RUGBY® 10 G	none					X							
RUGBY® 10 ME	none					X							
STEWARD® 150 EC	14 (Table) 28 (Wine)						X	X	X	X			
VANTEX® 60 CS	28										X		
TOPGUARD 300 SC	28												X
ROVRAL® FLO	7 (Wine) Table grapes: Do not apply later than pea size stage (except on "waltham cross" and "sultana" varieties where applications should not be made after full blossom)											X	

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



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## HERBICIDES

### AURORA® 40 WG

REGISTRATION N°	L6794, Act No. 36 of 1947
COMPOSITION	Carfentrazone – ethyl (Triazolinone) 400 g/kg
FORMULATION	A water dispersible granule herbicide for post-emergent control of broadleaf weeds in vineyards.
HRAC GROUP	14
PACKAGING	12 x 100 g

#### WEEDS CONTROLLED

The following weed species are normally controlled by **AURORA® 40 WG** used at the recommended rate.

COMMON NAME	BOTANICAL NAME	GENERAL INFORMATION
Pimpernel Spiny Emex Musk Heron's Bill Fumitory Small cleaver Small mallow Small stinkweed Four-leaved all seed Wild radish	<i>Anagalis arvensis</i> <i>Emex australis</i> <i>Erodium moschatum</i> <i>Fumaria muralis</i> <i>Galium spurium</i> <i>Malva parviflora</i> <i>Pentzia suffruticosa</i> <i>Polycarpon tetraphyllum</i> <i>Raphanus raphanistrum</i>	Apply <b>AURORA® 40 WG</b> to actively growing weeds and ensure good coverage especially of larger, more mature weeds. Difficult to control annual weeds should be treated in early spring as a pre blossom application. Use a suitable buffer according to label directions where the water is known to be alkaline/ hard to obtain an ideal pH of 5. Serious localized or translocated damage may occur if spray or spray drift comes into contact with leaves, fruit and/or immature bark of trees, vines bushes or adjacent non-target crops that are not under treatment.

#### APPLICATION

**AURORA® 40 WG** works only by contact. It is therefore necessary to achieve a good overall coverage of the targeted plant.

CROP	DOSAGE	REMARKS
Vines (table and wine grapes)	25 g <b>AURORA® 40 WG</b> + 3 l ROUNDUP®/MAMBA® 360 SL / MAMBA MAX 480SL + surfactant (the addition of a suitable surfactant (Penetrex 0.5% or NPX Humectant 0.25%) will enhance the cosmetic effect and rapidity of action)	Apply as a directed interrow spray for the control of difficult weeds such as <i>Malva parviflora</i> , <i>Conyza bonariensis</i> , <i>Urtica dioica</i> when actively growing (ideal stage when weeds are 10 – 20 cm in height). Shield young trees with immature bark during application or use a covered sprayer. Ensure that contact is avoided on leaves, fruit and bark.

## 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	REMARKS
<b>Grapes (Table)</b>		
False Codling Moth (larvae) ( <i>Thaumatotibia leucotreta</i> )	17.5 ml/100 l	Apply <b>CORAGEN®</b> as a full cover foliar application at spray volumes from 1000 up to 1500 litres spray mixture per hectare depending on the size of the vines. The addition of a registered non-ionic wetter, such as TREND® 90, may enhance the insect control potential of <b>CORAGEN®</b> . Ensure thorough coverage of the foliage and developing fruit. Apply <b>CORAGEN®</b> when moth catches in pheromone traps indicate an infestation of False Codling moth which is typically at the onset of ripening. Further applications should be made at 14 day intervals if necessary. Do not exceed 2 <b>CORAGEN®</b> applications in total per season on the crop. Should any further control of the pest be required apply an insecticide that is not from chemical group code 28. Allow 3 days between last <b>CORAGEN®</b> application and harvest.

#### IMPORTANT NOTE:

IMPORTANT NOTE: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"

# INSECTICIDES

## ALTACOR®

REGISTRATION N°	L8467, Act No. 36 of 1947
COMPOSITION	Chlorantraniliprole (anthranilic diamide) 350 g/kg
FORMULATION	A water dispersible granule stomach and contact insecticide for the control of False codling moth and African bollworm on table grapes.
IRAC GROUP	28
PACKAGING	50g, 100g & 500g

PEST	DOSAGE	REMARKS
<b>Grapes (Table)</b>		
<p><b>African bollworm (larvae)</b> (<i>Helicoverpa armigera</i>)</p> <p><b>False Codling Moth (larvae)</b> (<i>Thaumatotibia leucotreta</i>)</p>	<p>10 g/100 ℓ spray mixture (maximum 300 g/ha)</p>	<p>Apply <b>ALTACOR®</b> as a full cover foliar application at spray volumes from 1000 up to 1500 litres spray mixture per hectare depending on the size of the vines. The addition of a registered non-ionic wetter, such as <b>TREND® 90</b>, may enhance the insect control potential of <b>ALTACOR®</b>. Ensure thorough coverage of the foliage and developing fruit.</p> <p><b>FALSE CODLING MOTH:</b> Apply <b>ALTACOR®</b> when moth catches in pheromone traps indicate an infestation of False Codling moth which is typically at the onset of ripening. Further applications should be made at 14 day intervals if necessary.</p> <p><b>AFRICAN BOLLWORM:</b> Apply <b>ALTACOR®</b> when eggs or young larvae are present, but before larvae enter the fruit. A follow-up <b>ALTACOR®</b> application may be necessary 10-14 days later depending on re-infestation of the pest.</p> <p>Do not exceed 2 <b>ALTACOR®</b> applications in total per season on the crop.</p> <p>Should any further control of the pest be required apply an insecticide that is not from chemical group code 28.</p> <p><b>Allow 3 days between last ALTACOR® application and harvest.</b></p> <p><b>IMPORTANT NOTE:</b> The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to <b>MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE</b> under "WARNINGS".</p>



## INSECTICIDES

### EXIREL® 100 SE

REGISTRATION N°	L10447, Act No. 36 of 1947
COMPOSITION	Cyantraniliprole (Anthranilic diamide) 100 g/l
FORMULATION	A Suspo-emulsion ingestion insecticide for the control of various insect pests on crops as listed.
IRAC GROUP	28
PACKAGING	10 x 1 l

PEST	DOSAGE	REMARKS
Mediterranean Fruit fly ( <i>Ceratitis capitata</i> )	<p><b>Ground Application</b> 100 ml/ha + 400 - 1000 ml/hl Hym lure 425 RTU in 50 - 100 litres of water per hectare</p> <p><b>Aerial Application</b> 100 ml/ha + 900 ml/ha Hym lure 425 RTU + 1 litre of water per hectare (total of 2 l spray mixture per hectare)</p>	<p><b>Application of fruit fly baits.</b> Apply <b>EXIREL® 100 SE</b> in a total volume of 50 litres bait mixture per planted ha as coarse droplets of approximately 1 – 6 mm. Use only calibrated equipment adapted to comply with application requirements.</p> <p><b>Table Grapes:</b> Do not apply directly onto the grape bunches. Spray at least every second to third row, applying the bait to the underside of the trellis roof. In order to avoid droplets on the berries, direct the application above the bunch line to the leaf canopy for slanting trellises and between bunch lines for overhead trellises.</p> <p><b>Wine Grapes:</b> The solid stream method should be used and applied directly into the leaf canopy in order to break up the solid stream into coarse droplets. Treat both sides of every second or third interrow depending on fruit fly pressure. Alternate rows with each consecutive application.</p> <p><b>Do not apply any other products including adjuvants, surfactants and wetters with bait applications of EXIREL® 100 SE.</b> Applications should be repeated at 7 day intervals. Do not apply more than a total of 5 <b>EXIREL® 100 SE</b> bait applications for control of fruit fly per season. Do not apply more than 3 consecutive applications of <b>EXIREL® 100 SE</b> at a time. Follow this with a "window" of 60 days with applications of an effective registered product with a different mode of action after which 2 consecutive bait applications of <b>EXIREL® 100 SE</b> can be applied again. Consult the recommendations in the Resistance Warning section on this label. Allow 10 days between last <b>EXIREL® 100 SE</b> application and harvest. HYMLURE: User must ensure that all recommendations are adhered to.</p>

### MARSHAL® 48 EC

REGISTRATION N°	L3314, Act No. 36 of 1947
COMPOSITION	Carbosulfan (carbamate) 480 g/l
FORMULATION	A systemic insecticide and nematicide for the control of the pests mentioned on the crops listed.
IRAC GROUP	1 A
PACKAGING	4 x 5 l

Budmite migrate to new growth in the spring from their over wintering position, thus application is made during the migratory stage.

PEST	DOSAGE	REMARKS
Budmite ( <i>Colomerus vitis</i> )	50 ml / 100 l water	Apply three sprays. The first when shoots are 5 – 10 cm long. The second and third at 14 day intervals after the first.*

\* Contact ARC-Infruitec Nietvoorbij for their latest recommendation.

# INSECTICIDES

## RUGBY® 10 G

REGISTRATION N°	L4110, Act No. 36 of 1947
COMPOSITION	Cadusafos (organophosphate) 100 g/kg
FORMULATION	A granule contact nematicide for the control of nematodes in the crops listed.
IRAC GROUP	1 B
PACKAGING	10 kg

PEST	DOSAGE	REMARKS
Nematodes	1 to 3 applications of 15 g/m <sup>2</sup>	Initial application in early Spring. Use the higher rate on heavier infestations.
Ring nematode ( <i>Criconemoides xenoplax</i> )	8 – 10 weeks apart depending on infestation level	(i) Spring application should be timed to protect new root flush. Apply follow-up treatment if necessary according to nematode soil analyses.
Dagger nematode ( <i>Xiphinema spp.</i> )	OR Two applications of 25 g/m <sup>2</sup> each 12 weeks apart under high infestation pressure conditions	(ii) Autumn application as a post-harvest treatment
Rootknot nematodes ( <i>Meloidogyne spp.</i> )		Apply evenly to the soil in a 50 cm wide band on either side of the plant row or the area covered by the drip or micro-irrigation system. The number of square meters treated depends on extent of the irrigation coverage. If sufficient rain does not fall immediately after application, wash the product into the top layer of soil by sprinkler or micro-irrigation. (20 – 35 mm water).
Spiral nematode ( <i>Helicotylenhus spp.</i> )		SEE MODE OF ACTION.

## RUGBY® 10 ME

REGISTRATION N°	L6368, Act No. 36 of 1947
COMPOSITION	Cadusafos (organophosphate) 100 g/ℓ
FORMULATION	An emulsion, oil in water contact nematicide for the control of nematodes in the crops listed.
IRAC GROUP	1 B
PACKAGING	20 ℓ

PEST	DOSAGE	REMARKS
Nematodes	1 to 3 applications of 15 ml/m <sup>2</sup>	Initial application at the onset of Spring. Use the higher rate on heavier infestations.
Ring nematode ( <i>Criconemoides xenoplax</i> )	8 – 10 weeks apart depending on infestation pressure.	(i) Spring application should be timed to protect new root flush. Apply follow-up treatment if necessary according to nematode soil analyses
Dagger nematode ( <i>Xiphinema spp.</i> )	OR 2 applications of 25 ml/m <sup>2</sup> each 12 weeks apart in high infestation pressure conditions.	(ii) Autumn application as a post-harvest treatment.
Rootknot nematodes ( <i>Meloidogyne spp.</i> )		Apply evenly to moist soil in a 50 cm wide band on either side of the plant row or to the area covered by drip or micro-jet irrigation. The number of square meters to be treated depends on the extent of the irrigation coverage.
Spiral nematode ( <i>Helicotylenhus spp.</i> )		Application may also be made through a drip or micro-jet irrigation system. In case there is insufficient rainfall immediately after application, wash the product into the top layer of soil by irrigation (20 – 35 mm).
		SEE MODE OF ACTION AND REFER TO DIRECTIONS FOR USE: MICRO-JET AND DRIP IRRIGATION SYSTEMS

# INSECTICIDES

## STEWARD® 150 EC

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

PEST	DOSAGE	REMARKS
<b>African bollworm (larvae)</b> ( <i>Helicoverpa armigera</i> )	30 ml/100 l water	<b>FOLIAR APPLICATION:</b> Apply preventively or as soon as eggs or larvae are present, but before larvae enter the fruit. A follow-up application may be necessary 10 to 14 days later depending on re-infestation of the pest. Please see IMPORTANT NOTES below.
<b>Banded Fruit Weevil (Snoutbeetle) berry damage</b> ( <i>Phlyctinus collosus</i> )	40 ml/100 l water	<b>FOLIAR APPLICATION:</b> Commence application from 25 cm shoot length onwards or when weevils are first observed in cardboard traps or when first feeding damage is observed on lower shoots. The first occurrence of weevils (snoutbeetles) varies from area to area but can normally be expected from mid October to mid November. A second application may be necessary 14 days later if infestation persists. Please see IMPORTANT NOTES below.
<b>Leafhoppers</b> ( <i>Acia &amp; Mgenia spp.</i> )	40 ml/100 l water	<b>FOLIAR APPLICATION:</b> Apply preventively as soon as leafhoppers are present and their numbers start increasing, usually at the beginning of January. A follow-up application may be necessary 10 to 14 days later depending on re-infestation of the pest. A third application is recommended after harvest to decrease leafhopper numbers and transfer of the disease, Aster-Yellows. If 2 <b>STEWARD® 150 EC</b> applications were applied before harvest, apply a registered pesticide unrelated to <b>STEWARD® 150 EC</b> as the post harvest application. Please see IMPORTANT NOTES below.
<b>False Codling Moth</b> ( <i>Thaumatotibia leucotreta</i> )	40 ml/100 l water	<b>FOLIAR APPLICATION:</b> Apply <b>STEWARD® 150 EC</b> when moth catches in pheromone traps indicate an infestation of False Codling moth. Further applications should be made at 10 day intervals if necessary. Always apply <b>STEWARD® 150 EC</b> as part of an integrated pest management program (IPM). For optimum results <b>STEWARD® 150 EC</b> applications should be combined with, or preceded by, other methods of false codling moth control for example false codling moth mating disruption, biological control programs, good sanitation programs and effective insecticides. The emergency registration for grapes for control of False codling moth is based on limited and/or restricted data and experience on efficacy and crop safety. Therefore, use is at the sole risk and responsibility of the applicator. Applicators are strongly advised to test spray a small area before using it in a large scale and/or large area. Please see IMPORTANT NOTES below.

### IMPORTANT NOTES WITH REGARDS TO TABLE AND WINE GRAPES:

Apply as a full cover spray depending on vine size at 1000-1500 l spray mixture per ha. Thorough coverage is essential. Do not exceed 2 **STEWARD® 150 EC** applications in total per season on crop. Should any further control of the pest be required use a product with a different mode of action. **STEWARD® 150 EC** can be dangerous to bees. To protect bees and other pollinators, and according to the standards of Good Agricultural Practices, **STEWARD® 150 EC** should not be applied when honeybees are actively foraging. Allow 14 and 28 days between last application and harvest of table and wine grapes respectively. Note: The withholding period, i.e. the number of days between last application and harvest meets local maximum residue limits (MRLs), but may not necessarily meet all those for export.





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## 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
Weevils (Snout beetles) ( <i>Phlyctinus callosus</i> , <i>Eremnus setulosus</i> , <i>Eremnus cerealis</i> )	8 ml/100 l water OR 83 ml/ha	<b>Foliar Application:</b> HV: 1000 l spray mixture / ha. Apply as a full cover application ensuring thorough coverage of all parts of the plant. Apply first spray when the first signs of movement and/or feeding of weevils is detected. Repeat within 21 - 28 days as necessary. The first occurrence of weevils varies from area to area but can be expected from mid-October to mid-November. <b>Stem treatment:</b> Apply as a preventive stem application immediately once weevil activity is noticed on the stem. Monitoring for weevil must start in October and be continued the whole growing season. A spray volume of 1000 l / ha ( $\pm$ 0,5 l / plant) must be used. Apply up to a height of 1 m. Low growing vines to be applied up to first lateral branches. The stems are to be thoroughly wetted and excess spray mixture allowed to run onto the soil surrounding the stem. Repeat application if necessary 3 - 4 weeks later. Where a dense canopy is present and weevils seek refuge in the canopy, not returning back to the stem during the day, carry out a foliar application. Before application ensure an infestation is present in foliage.

## FUNGICIDES

### TOPGUARD 300 SC

REGISTRATION N°	L9198, Act No. 36 of 1947
COMPOSITION	Tebuconazole (triazole) 225 g/l Flutriafol (triazole) 75 g/l
FORMULATION	A suspension concentrate systemic fungicide for the control of powdery mildew in table and wine grapes.
FRAC GROUP	3
PACKAGING	5 l

DISEASE	DOSAGE	REMARKS
Powdery mildew ( <i>Oidium tuckeri</i> / <i>Uncinula necator</i> )	33 ml / 100 l water	Begin application when shoots are approximately 2.5cm long and apply as a full cover spray to the point of runoff. Repeat every 14 days. It is recommended to alternate sprays with registered non-DMI fungicides. Do not apply more than 6 sprays per season.

**Note:** TOPGUARD 300 SC can be alternated with registered formulations (such as sulphur) in a preventive spray programme. Consult the labels for full particulars. Do not alternate TOPGUARD 300 SC with any other triazole containing products.



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## 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 <i>Botrytis</i> in table and wine grapes..
FRAC GROUP	2
PACKAGING	4 x 5 ℓ

DISEASE	DOSAGE	REMARKS
Table Grapes <i>Botrytis rot</i> ( <i>Botrytis cinerea</i> )	200 ml /100 ℓ water	Apply 500 to 1 000 ℓ of spray mixture / ha, depending on the growth of the vines. Ensure thorough wetting of the inflorescences or bunches. Apply the first spray at the full-blossom stage. Follow this with an application at the pea-size stage, using either <b>ROVRAL® FLO</b> , or a suitable alternative Botrytis remedy such as Scala (Reg. No. L4972) or Teldor 500 SC (Reg. No. L6250). DO NOT apply <b>ROVRAL® FLO</b> to Waltham Cross and Sultana grapes later than full blossom. Following the pea-size stage apply other Botrytis remedies [Scala, Teldor 500 SC or Rovral® Aquaflo (Reg. No. L5140)] according to their label instructions. Do not apply more than a total of three iprodione ( <b>ROVRAL® FLO</b> , Rovral® Aquaflo) sprays per season. <b>NB:</b> Applications should be made as soon as possible after mealybug sprays or repeated if a mealybug spray is made within 14 days after a <b>ROVRAL® FLO</b> application.
Wine Grapes <i>Botrytis rot</i> ( <i>Botrytis cinerea</i> )	200 ml /100 ℓ water	Apply 500 to 1 000 ℓ spray mixture/ha depending on the growth of the vines. Ensure thorough wetting of the inflorescences or bunches. The number of Botrytis sprays applied per season should be determined by the history of disease in the vineyard and the expected severity of the disease. A minimum of 2 applications is recommended under conditions of low to moderate disease pressure, with up to 4 treatments when severe disease incidence is expected. <b>Treatment 1:</b> Apply <b>ROVRAL® FLO</b> at the full-blossom stage. <b>Treatment 2:</b> If moderate to severe disease incidence is expected, apply either <b>ROVRAL® FLO</b> , or a suitable alternative Botrytis remedy, such as Scala (Reg. No. 4972) or Teldor 500 SC (Reg. No. L6250) according to its label instructions, at the pea-size stage, before closure of the bunches. <b>Treatment 3:</b> If severe disease incidence is expected, apply <b>ROVRAL® FLO</b> or Rovral® Talc (Reg. No. L1216), or Scala or Teldor 500 SC in the period between bunch closure and the beginning of ripening, according to its label instructions. <b>Treatment 4:</b> Three weeks prior to harvest, apply <b>ROVRAL® FLO</b> , or a suitable alternative Botrytis remedy (Rovral® Talc, Scala or Teldor 500 SC) according to its label instructions. IMPORTANT: Please note that Treatments 1 and 4 are critical and that they <b>MUST</b> be applied whether Treatments 2 and 3 are used or not. <b>NB:</b> Applications should be made as soon as possible after mealybug sprays, or repeated if a mealybug spray is made within 14 days after a <b>ROVRAL® FLO</b> application. Do not apply more than a total of 3 iprodione ( <b>ROVRAL® FLO</b> , Rovral® Talc) applications per season.

For more information please contact: FMC Chemicals (Pty) Ltd  
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AURORA®, CORAGEN®, EXIREL® 100 SE, MARSHAL® 48 EC, ROVRAL® FLO, RUGBY® 10 G, RUGBY® 10 ME, STEWARD® 150 EC, TOPGUARD® 300 SC and VANTEX® 60 SC are trademarks of FMC Corporation or an affiliate. Date: 11/2020.