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POME FRUIT PRODUCT RANGE
SOUTH AFRICA

PRODUCT	WITHHOLDING PERIODS (Minimum number of days between last application and harvest)	Broadleaf weeds	African bollworm	Codling moth	Banded Fruit Weevil	Mediterranean Fruit Fly	Aphids, Bryobia mite and Woolly aphid	Mealy bugs	Nematodes
AURORA® 40 WG	None	X							
FYFANON™ 440 EW	10						X	X	
ALTACOR®	14		X	X					
EXIREL® 100 SE	7			X	X	X			
RUGBY® 10 G	None								X
RUGBY® 10 ME	None								X
STEWARD® 150 EC	28		X	X	X				
VANTEX® 60 CS	14		X	X	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 Nº	L6794, Act No. 36 of 1947
COMPOSITION	Carfentrazone – ethyl (Triazolinone) 400 g/kg
FORMULATION	A water dispersible granule herbicide for post-emergent control of broadleaved weeds in orchards.
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	*Anagalis arvensis* *Emex australis* *Erodium moschatum* *Fumaria muralis* *Galium spurium* *Malva parviflora* *Pentzia suffruticosa* *Polycarpon tetraphylum* *Raphanus raphanistrum*	Apply **AURORA® 40 WG** 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
Pome Fruit	25 g **AURORA® 40 WG** + 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 *Malva parviflora*, *Conyza bonariensis*, *Urtica dioica* 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

FYFANON™ 440 EW

REGISTRATION Nº	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
Aphids, Bryobia mite and Woolly aphid	140 mℓ/100 ℓ water	Apply as a full cover spray when pest appears
Mealy bug	140 mℓ/100 ℓ water	Apply as a full cover spray and repeat when necessary. It is recommended that no more than 3 sprays are applied in a season.

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INSECTICIDES

ALTACOR®

REGISTRATION Nº	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 codling moth and African bollworm in apples and pears.
IRAC GROUP	28
PACKAGING	50g, 100g & 500g

PEST	DOSAGE	REMARKS
African bollworm (larvae) (*Helicoverpa armigera*)	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** when eggs or young larvae are present, but before larvae enter the fruit. Apply **ALTACOR®** in 800 up to 3000 litres spray mixture per hectare. A follow-up **ALTACOR®** application may be necessary 10-14 days later depending on re-infestation of the pest. Thorough coverage of the foliage and developing fruit is essential. Do not exceed 3 **ALTACOR®** applications per season, including applications made with this product against Codling moth (refer to recommendations above). Allow 14 days between last **ALTACOR®** application and harvest. **IMPORTANT NOTE**: The withholding period, 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"
Codling moth (larvae) *(Cydia pomonella)*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** as a full cover application at spray volumes from 800 up to 3000 litres spray mixture per hectare depending on the size of the trees and stage of the crop. Ensure thorough coverage of the foliage and developing fruit. **ALTACOR®** can be applied against the first, second or third generation of the pest. In order to prevent the development of resistance, apply products with a different mode of action against different generations of codling moth, e.g. STEWARD® in the first generation, especially when banded fruit weevil (snout beetle) is also present. Refer to STEWARD® label for full details. If **ALTACOR®** is applied against the first codling moth generation, application must commence no later than 75% petal drop. Always apply **ALTACOR®** in a spray programme, not exceeding 14 day intervals between applications. Do not exceed 3 **ALTACOR®** applications per season in total, including applications made with this product against African bollworm (refer below). Allow 14 days between last **ALTACOR®** application and harvest. **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"

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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

CROP	PEST	DOSAGE	REMARKS
APPLES	Codling moth (*Cydia pomonella*)	35 ml/100 ℓ spray mixture	Apply **EXIREL® 100 SE** as a full cover application at spray volumes calculated according to the Tree Row Volume (TRV) of the crop as set out in the section under Deciduous Fruit above. Ensure thorough coverage of the foliage and developing fruit. **EXIREL® 100 SE** and other Group 28 insecticides must only be applied against one of the first, second or third generations of the pest. In order to prevent the development of resistance, apply products with a different mode of action against different generations of codling moth. In apples, because of its efficacy against Banded Fruit Weevil (*Phlyctinus callosus*) it is advised that **EXIREL® 100 SE** applications be targeted to control both of these insect pests. Always apply **EXIREL® 100 SE** in a block spray programme, not exceeding 10-14 day intervals between applications. Do not exceed 2 **EXIREL® 100 SE** applications per season in total. Consult the recommendations in the Resistance Warning section on this label. Allow 7 days between last **EXIREL® 100 SE** application and harvest.
	Banded Fruit Weevil (*Phlyctinus callosus*)	35 ml/100 ℓ spray mixture	Apply **EXIREL® 100 SE** as a full cover application at spray volumes calculated according to the Tree Row Volume (TRV) of the crop as set out in the section under Deciduous Fruit above. Ensure thorough coverage of the foliage and developing fruit. Commence spraying when weevils are first caught in corrugated cardboard traps attached to the tree trunks or when feeding damage is first noted on the leaves of the lower shoots. A follow-up **EXIREL® 100 SE** application may be necessary 10-14 days later depending on re-infestation of the pest. Do not exceed the 2 **EXIREL® 100 SE** applications per season, including applications of these products against Codling moth (refer to recommendations above). **EXIREL® 100 SE** applications should only be applied to one generation of this pest. An effective insecticide with a different mode of action such as Steward® 150 EC should be used for control of the other generation in those seasons or areas where 2 generations of this pest occur. Allow 7 days between last **EXIREL® 100 SE** application and harvest.
	Mediterranean Fruit fly (*Ceratitis capitata*)	75 ml/100 ℓ spray mixture (minimum rate of 1.2 ℓ **EXIREL® 100 SE**/ha)	Apply as a full cover application at early stages of pest infestation, typically when adults are trapped and when the crop starts to be attractive for the adults. Apply in 1500 – 2000 ℓ water per hectare. Make no more than one application per season. The minimum recommended application rate is 1.2 L product per hectare, irrespective of the water volume used. Allow 7 days between last application and harvest.
APPLES & PEARS	Mediterranean Fruit fly (*Ceratitis capitata*)	**Ground Application:** 100 mℓ/ha + 400 - 1000 ml/hl Hymlure 425 RTU In 50 – 100 ℓ of water per hectare **Aerial Application** 100 mℓ/ha + 900 mℓ/ha Hymlure 425 RTU + 1 ℓ of water/ha (total of 2 ℓ spray mixture per hectare)	**Application of fruit fly baits**. Where possible use custom made rigs or specially adapted equipment for ground applications of Fruit fly bait. These should be made as scattered coarse droplet applications, aimed at the inside leaves of the canopy on the underside of the leaves as this is where fruit flies tend to congregate. The following guidelines can be used to obtain this. Use Spraying Systems D2 to D4 nozzles without whirler plates that provide a thin solid stream aimed into the inside of the tree canopy. This ensures that the thin solid stream will break up into the desired scattered coarse droplets inside the tree canopy when striking leaves, fruit and branches. Do not apply any other products including adjuvants, surfactants and wetters with bait applications of **EXIREL® 100 SE**. Applications should be repeated at 7 day intervals. Do not apply more than a total of 5 **EXIREL® 100 SE** bait applications for control of fruit fly per season. Do not apply more than 3 consecutive applications of **EXIREL® 100 SE** 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 **EXIREL® 100 SE** can be applied again. Consult the recommendations in the Resistance Warning section on this label. Allow 7 days between the last **EXIREL® 100 SE** application and harvest. The withholding period, 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. Refer to IMPORTANT NOTE above. HYMLURE: User must ensure that all recomendations are adhered to.

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INSECTICIDES

RUGBY® 10 G

REGISTRATION Nº	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 **Ring nematode** (*Criconemoides xenoplax*) **Dagger nematode** (*Xiphinema spp.*) **Rootknot nematodes** (*Meloidogyne spp.*)	1 to 3 applications of 15 g/m² 8 – 10 weeks apart depending on infestation level OR 25 g/m² followed by 25 g/m² 12 weeks later in high infestation pressure conditions	Use the higher rate on heavier infestations. (i) Spring application should be timed to protect new root flush. Apply follow-up treatment if necessary according to nematode soil analyses. (ii) Autumn application as a post-harvest treatment Apply evenly to the soil in the tree basin (under tree canopy) or the area covered by the drip or micro-irrigation system. The number of square meters treated depends on size of basin area/canopy. 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). Best results will be obtained with young trees – first 2 years after planting. SEE MODE OF ACTION

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INSECTICIDES

RUGBY® 10 ME

REGISTRATION Nº	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 **Ring nematode** (*Criconemoides xenoplax*) **Dagger nematode** (*Xiphinema spp.*) **Rootknot nematodes** (*Meloidogyne spp.*)	1 to 3 applications of 15 mℓ/m² 8 – 10 weeks apart (depending on infestation pressure). **OR** 25 mℓ/m² followed by 25 mℓ/m² 12 weeks later in high infestation pressure conditions.	Use the higher rate on heavier infestations. (i) Spring application should be timed to protect new root flush. Apply follow-up treatment if necessary according to nematode soil analyses (ii) Autumn application as a post-harvest treatment. Apply evenly to the soil in the tree basin (under tree canopy) for an overall surface spray or the area covered by the drip or micro-irrigation system. The number of square meters (m2) to be treated depends upon the size of basin area/canopy. Application may also be made through a drip or micro-irrigation system. 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). Best results will be obtained with young trees – first 2 years after planting. Ensure that product does not come into contact with foliage and fruit. REFER TO WARNINGS. SEE MODE OF ACTION AND REFER TO DIRECTIONS FOR USE: MICRO-JET AND DRIP IRRIGATION SYSTEMS

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INSECTICIDES

STEWARD® 150 EC

REGISTRATION Nº	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	REMARKS
African bollworm (larvae) *(Helicoverpa armigera)*	30 mℓ/100 ℓ water	**FOLIAR APPLICATION**: Apply when eggs or young 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. Refer to notes below.
Codling moth (larvae) *(Cydia pomonella)*	50 mℓ/100 ℓ water	**FOLIAR APPLICATION:** Apply against the first generation of the pest. Commence application at 75% petal fall at the onset of the first moth generation of the pest. Apply in a programme, not exceeding 14-day intervals. Refer to notes below.
Banded Fruit Weevil (Snoutbeetle) fruit damage (*Phlyctinus callosus*)	50 mℓ/100 ℓ water	**FOLIAR APPLICATION**: Commence application from 75% petal fall onwards, or when weevils are observed in cardboard traps, or when feeding damage is observed on lower shoots. A second application may be necessary 14 to 21 days later if infestation persists. Refer to notes below.

IMPORTANT NOTES WITH REGARDS TO FOLIAR APPLICATION ON APPLES AND PEARS:
Apply as a full cover spray in 500 to 2000 L water per hectare. Ensure thorough coverage. Do not exceed 2 **STEWARD® 150 EC** applications per season, including applications made with this product against other pests. To avoid the development of resistance, apply registered products with a different mode of action against further generations or other pests. The addition of an adjuvant / wetter e.g. Trend® 90 at 10mℓ/100 ℓ of spray mixture can be added in apples to improve coverage. Allow 28 days between last application and harvest. The withholding period, i.e. the number of days between last.

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INSECTICIDES

VANTEX® 60 CS

REGISTRATION Nº	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
Banded fruit weevil (Snout beetle) *(Phlyctinus callosus)*	8.5 mℓ/100 ℓ water or 208-292 mℓ/ha	HV: Apply 2 500 - 3 500 ℓ spray mixture/ha. Apply two sprays: The first at 75 % petal fall and the second four weeks later. A third spray can be applied around middle January to prevent late season damage. Initially this treatment will also suppress or control low Red spider mite populations.
Codling moth *(Cydia pomonella)*	4,5 mℓ/100 ℓ water or 104-142 mℓ/ha	High volume - Apply the first spray at 75 % petal fall. Repeat every 14 - 18 days.
African bollworm *(Helicoverpa armigera)*	4,5 mℓ/100 ℓ water or 104-142 mℓ/ha	Apply at the first signs of infestation, repeat if necessary. The sprays carried out for weevil and codling moth will normally control this pest. See "Warnings" - Warning against resistance.

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