Compatibility (continued)

surfactant or spray oil is not recommended with Rovral Liquid as it may result in crop damage to sensitive plants. DO NOT mix with fertilisers. Mixtures with some fertilisers, e.g. urea, may cause foliar damage.

NOTE: * Mixing Rovral liquid with Alliette WG may result in some settling out.

As formulations of other manufacturers' products are beyond the control of FMC Crop Protection Pty Ltd, all mixtures should be tested prior to mixing commercial quantities.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS AND ORGANISMS

DO NOT apply the product under weather conditions, or from spraying equipment, which could be expected to cause spray drift onto adjacent crops, croplands, pastures, livestock, natural or impounded lakes, dams or other waterways.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Toxic to aquatic organisms. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

FMC Crop Protection Pty Ltd.
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FMC

CAUTION

KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

rovral®

LIQUID

FUNGICIDE

ACTIVE CONSTITUENTS: 250 g/L IPRODIONE
SOLVENT: 332 g/L LIQUID HYDROCARBONS

For control of certain fungal diseases in various crops and situations as specified in the DIRECTIONS FOR USE table.

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, secure, well-ventilated area. Do not store for prolonged periods in direct sunlight. Protect from frost.
The method of disposal of the container depends on the container type. Read the STORAGE AND DISPOSAL instructions on the label that is attached to the container.

SAFETY DIRECTIONS

May irritate the eyes. Avoid contact with eyes and skin, and avoid inhalation of vapour. When opening the container and using the product wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length PVC gloves and face shield. If product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre (telephone 13 11 26). If swallowed, do NOT induce vomiting. Give a glass of water.

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet, which may be obtained from www.fmccrop.com.au.

EXCLUSION OF LIABILITY

This product must be used strictly as directed, and in accordance with all instructions appearing on the label and in other reference material. So far as it is lawfully able to do so, FMC Crop Protection Pty Ltd accepts no liability or responsibility for loss or damage arising from failure to follow such directions and instructions.

APVMA Approval No.: 30462/0708

IMPORTANT: READ THIS BOOKLET BEFORE USE

FMC

INDEX

DIRECTIONS FOR USE

Tree Crops/Vines:

RATE
In the following table, all rates are given for dilute spraying. For concentrate spraying, refer to the **Special Instructions for Tree Crops/Vines** section.

CROP	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
					For all uses in this table: Apply by dilute or concentrate spraying equipment. **Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.** Refer to the **Special Instructions for Tree Crops/Vines** section.
Almonds	Blossom blight, brown rot *Monilinia* spp., *Sclerotinia* spp.)	All States	100 mL/ 100 L water	Nil	Apply first at full bloom and, if conditions are favourable for disease development, up to two subsequent applications can be made; at petal fall and up to four weeks after petal fall.
Boysenberries	Grey mould *(Botrytis cinerea)*		200 mL/ 100 L water	1 day (H)	Spray at 10% blossom and full bloom. For fruit protection, apply at 2 to 3 weeks pre-harvest.
Grapes				7 days (H)	Good crop hygiene will aid in the control of disease. **This use is subject to a CropLife Australia fungicide resistance management strategy.** The number of consecutive applications and the total number of applications of Group **2** fungicides permitted is limited. Refer to the CropLife Australia Resistance Management Guidelines. See the "General Instructions - Resistance Management" for details on where these guidelines can be obtained.
Kiwifruit	Botrytis blight (*Botrytis* spp.)	NSW, Vic, WA only			Apply the spray to vines every 10 to 14 days ensuring that all fruit is thoroughly wet. Apply 3 applications at 10 to 14 day intervals from 10% bloom to petal fall for protection of flowers and young fruit. Apply a further 2 applications of Rovral Liquid to control late season Botrytis.
Macadamias	Botrytis blight (*Botrytis* spp.)	All States	100 mL/ 100 L water	Nil	Apply as a thorough cover spray to flower racemes when they open. A follow up spray may be needed one week later if wet conditions persist during flowering. Remove nuts under trees prior to spraying.
Mandarins (non-bearing)	Alternaria leaf spot (brown spot) (*Alternaria alternata*)	Qld, WA, NT only	200 mL/ 100 L water		Apply to non-bearing trees of Murcott variety monthly from first flush in spring until flushing ceases in the autumn. Reduce intervals to fortnightly during periods of wet weather.
Passionfruit	Alternata spot (brown spot) (*Alternaria* spp., *Alternaria passiflorae)*	Qld, NSW, WA, NT only	200 mL/ 100 L water	1 day (H)	**This use is subject to a CropLife Australia fungicide resistance management strategy:** **1.** Maintain a protective cover with protectant fungicide such as mancozeb. **2.** Limit the use of Rovral Liquid to strategic periods, i.e. before, during and after extended wet periods. **3.** Always tank mix Rovral Liquid with a protectant such as mancozeb. **4**. DO NOT apply more than four Rovral Liquid (or other Group **2** fungicide) sprays in a season.
Raspberries	Grey mould (*Botrytis cinerea*)	All States		1 day (H)	Spray at 10% blossom and full bloom. For fruit protection, apply at 2 to 3 weeks pre-harvest.

RATE
In the following table, all rates are given for dilute spraying. For concentrate spraying, refer to the **Special Instructions for Tree Crops/Vines** section.

CROP	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
Stone Fruit: Apricots, cherries, nectarines, peaches, plums	**Orchard Spraying** Blossom blight *(Monilinia fructicola, Monilinia laxa)* Brown rot *(Monilinia fructicola, Monilinia laxa)*	Qld, NSW, Vic, Tas, SA, WA only	100 to 150 mL/ 100 L water	Nil	For all uses in this table: Apply by dilute or concentrate spraying equipment. **Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.** Refer to the **Special Instructions for Tree Crops/Vines** section. Critical timings for control of blossom blight are 10% blossom, full bloom and petal/shuck fall and for conrol of subsequent brown rot in fruit, 3 weeks and 1 week pre-harvest. Use the higher rate under severe conditions of challenge, or for single applications of Rovral Liquid in the spray program. **This use is subject to a CropLife Australia fungicide resistance management strategy.** The number of consecutive applications of Group **2** fungicides permitted is limited. Refer to the CropLife Australia Resistance Management Guidelines. See the "General Instructions - Resistance Management" for details on where these guidelines can be obtained.
Youngberries	Grey mould *(Botrytis cinerea)*	All States	200 mL/ 100 L water	1 day (H)	Spray at 10% blossom and full bloom. For fruit protection, apply at 2 to 3 weeks pre-harvest.

Berries

(See Tree Crops/Vines for boysenberries, raspberries and youngberries)

CROP	DISEASE	STATE	RATE	WHP
Strawberries	Grey mould *(Botrytis cinerea)*	All States	2.0 L/ha where spray volume is less than 1000 L/ha **OR** 200 mL/ 100 L water where spray volume equals or exceeds 1000 L/ha	1 day (H)

CRITICAL COMMENTS
This use is subject to a CropLife Australia fungicide resistance management strategy: **1.** Apply a program of protectant fungicides during flowering. If conditions favour disease development during this period use Rovral Liquid. **2.** DO NOT apply more than two successive sprays of Rovral Liquid (or other Group **2** Fungicide).

Vegetables

CROP	DISEASE	STATE	RATE	WHP
Celery	Sclerotinia rot (pink rot) *(Sclerotinia sclerotiorum)*	All States	2.0 L/ha where spray volume is less than 1000 L/ha **OR** 200 mL/ 100 L water where spray volume equals or exceeds 1000 L/ha	1 day (H)
Lettuces	Sclerotinia rot (drop) *(Sclerotinia sclerotiorum, Sclerotinia minor)*	All States		7 days (H)
	Grey mould (*Botrytis* spp.)	Tas, WA only		

CRITICAL COMMENTS
Commence spraying 1 to 2 weeks post-transplanting and then every 2 to 3 weeks. Use only five sprays.
Spray should be directed to the stems at ground level and to the underside of lower leaves. **This use is subject to a CropLife Australia fungicide resistance management strategy:** **1.** Apply Rovral Liquid as a seedling drench soon after emergence. **2.** Apply a protectant fungicide as a high volume foliar spray before planting out, then Rovral Liquid immediately after planting. **3.** Maintain cover with protectant fungicide sprays at 7-10 day intervals. **4.** If weather conditions favour Botrytis infection, tank mix the protectant with Rovral Liquid. **5.** Do not apply Rovral Liquid (or other Group **2** Fungicides) more than four times per season, irrespective of the target disease.

Vegetables *continued*

CROP	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
Potatoes	Sclerotinia rot *(Sclerotinia sclerotiorum)*	All States	1.0 to 2.0 L/ha where spray volume is less than 1000 L/ha **OR** 100 to 200 mL/ 100 L water where spray volume equals or exceeds 1000 L/ha	Nil	Apply 2 sprays, once immediately before and once immediately after hilling-up. For most effective treatment, concentrate the spray at the base of the stems and surrounding soil surface, where the fungus is active. Use the higher rate where disease is severe.
	Target spot, (early blight) *(Alternaria solani)*				Ensure thorough coverage to the whole plant. Treatment is generally not required until after flowering. Use the higher rate where disease is severe. Limit the use of Rovral liquid to periods when conditions favour disease development. **This use is subject to a CropLife Australia fungicide resistance management strategy.** The number of consecutive applications of Group **2** fungicides permitted is limited. Refer to the CropLife Australia Resistance Management Guidelines. See the "Genereral Instructions - Resistance Management" for details on where these guidelines can be obtained.
	Hypocotyl rot (black scurf) *(Rhizoctonia solani)*		800 mL/tonne seed material		Rovral Liquid will protect emerging shoots from hypocotyl rot, improving overall germination. Rovral Liquid may also reduce occurrence of black scurf on the harvested potatoes. Ensure good coverage of seed material and planting furrow. This can be achieved by applying Rovral Liquid as a fine spray to the seed at the time of planting using spray equipment mounted on the planter, and nozzles located at three points on each planter row to ensure uniform coating of the seed. DO NOT plant into waterlogged soil. A minimum water volume of 80 L/tonne seed should be used.
Tomatoes	Sclerotinia rot *(Sclerotinia sclerotiorum)*	Qld, NSW, Tas, SA, WA only	2.0 L/ha where spray volume is less than 1000 L/ha **OR** 200 mL/100 L water where spray volume equals or exceeds 1000 L/ha	7 days (H)	Spray at 14-day intervals from transplanting and throughout the period of disease pressure.
	Grey mould *(Botrytis cinerea)*	All States			Commence spraying 3 to 4 weeks after transplanting or at the onset of disease. Repeat treatment at 14-day intervals or when conditions favour spread of the disease, i.e. at trimming or deleafing. **This use is subject to a CropLife Australia fungicide resistance management strategy:** **1.** Alternate or tank mix Rovral Liquid with a protectant such as chlorothalonil. Avoid applying two Rovral Liquid (or other Group **2** fungicide) sprays in succession, unless tank mixed witha protectant. **2.** Do not apply more than four Rovral Liquid (or other Group **2** fungicide) sprays in a season.
	Target spot (early blight) *(Alternaria solani)*	Qld, Tas, WA, NT only			Commence spraying 1 week post-transplanting. Use adequate water to give thorough coverage of the plants. Use high volume spray equipment. **This use is subject to a CropLife Australia fungicide resistance management strategy:** **1.** Limit the use of Rovral Liquid to periods when conditions favour disease development. **2.** DO NOT apply more than four Rovral Liquid (or other Group **2** fungicide) sprays in one season. Apply no more than two consecutive sprays of a Group **2** fungicide.

Field Crops

CROP	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
Canola	Sclerotinia *(Sclerotinia sclerotiorum)*	All States	2.0 L/ha	6 weeks (H, G)	Apply at 20 to 50% flowering. Apply as a preventative spray before disease infection is anticipated. Good coverage is essential. Aerial application: Apply using a minimum water volume of 45 L/ha. Ground application: Apply using a minimum water volume of 100 L/ha.
Lucerne	Lucerne leaf spot *(Stemphylium botryosum)*	Qld, WA only	500 mL to 1.0 L/ha where spray volume is less than 1000 L/ha **OR** 50 to 100 mL per 100 L water where spray volume equals or exceeds 1000 L/ha	7 days (G)	Spray every 10 to 14 days when cool, damp weather favours the disease. Use the higher rate under conditions of high disease pressure.
	Leptosphaerulina leaf spot *(Leptosphaerulina trifolii)*				Apply in at least 300 L water/ha every 10 to 14 days when cool, damp weather favours the disease. Use the higher rate under conditions of high disease pressure.
Peanuts	Sclerotinia rot *(Sclerotinia sclerotiorum, Sclerotinia minor)*		2.0 L/ha **OR** 440 mL/ 100 L water (spot application)	12 days (H)	Apply when disease first appears. Repeat if necessary. Use a high water volume to ensure good coverage of foliage and stem at ground level. Do not mix Rovral Liquid with a foliar fungicide due to the different target positions on the plant.
Soybeans	Black leaf blight *(Arkoola nigra)*	NSW, WA only	2.0 L/ 200 to 400 L water / ha	7 weeks (H)	If disease is present on leaves apply an initial spray at early pod set (pods approximately 5 mm long). An additional spray 14 days later may be required if wet seasonal conditions prevail.

NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

WITHHOLDING PERIODS (WHP): (H = HARVEST, G = GRAZING)

Almonds, macadamias, mandarins, potatoes and stone fruit:
NOT REQUIRED WHEN USED AS DIRECTED.

Boysenberries, celery, passionfruit, raspberries, strawberries and youngberries:
DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.

Grapes, kiwifruit, lettuce and tomatoes:
DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.

Peanuts:
DO NOT HARVEST FOR 12 DAYS AFTER APPLICATION.

WITHHOLDING PERIODS (H = HARVEST, G = GRAZING) *continued*

Canola:
DO NOT HARVEST FOR 6 WEEKS AFTER APPLICATION.
DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 6 WEEKS AFTER APPLICATION.

Soybeans:
DO NOT HARVEST FOR 7 WEEKS AFTER APPLICATION.

Lucerne:
DO NOT GRAZE OR CUT FOR STOCK FOOD WITHIN 7 DAYS OF TREATMENT.

GENERAL INSTRUCTIONS

GROUP **2** FUNGICIDE

Fungicide Resistance Warning

Rovral Liquid Fungicide is a member of the dicarboximide group of fungicides. For fungicide resistance management the product is a Group **2** fungicide. Some naturally occurring individual fungi resistant to the product and other Group **2** fungicides may exist through normal genetic variability in any fungal population. The resistant individuals can eventually dominate the fungal population if these fungicides are used repeatedly. These resistant fungi will not be controlled by this product or other Group **2** fungicides, thus resulting in a reduction in efficacy and possible yield loss. Since the occurrence of resistant fungi is difficult to detect prior to use, FMC Crop Protection Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant fungi.

Resistance Management

Resistant strains of fungi can develop to this and other fungicides. To reduce the possibility of this occurrence, and where alternatives are available, rotate to use products with as many different modes of action as possible.

Where specific resistance management strategies are established these are detailed at the CropLife Australia website (http://www.croplifeaustralia.org.au/default.asp?V_Doc_ID=1792) or from your local agronomist.

Export of Treated Produce

Growers should note that MRLs or import tolerances may not exist in all markets for produce treated with Rovral Liquid. If you are growing produce for export, please check with FMC Crop Protection Pty Ltd. for the latest information on MRLs and import tolerances BEFORE using Rovral Liquid.

Mixing

Note: Rovral Liquid may be unstable in conditions where the pH is 7 or higher. It is therefore essential to check the pH of the spray solution before adding Rovral Liquid. A suitable registered buffering agent may have to be added to bring the pH down below 7.

Shake well before use. Add half the required water volume to the spray tank or vat with the agitation mechanism operating. Add the required volume of this product and then add additional water to the volume required.

Application

Good disease control requires even, thorough coverage of the target area. Application should be made using appropriate spray equipment and sufficient water to provide adequate penetration and coverage. Equipment settings and water volume may need to vary, depending on the growth stage of the crop. **High pressure, prolonged and vigorous agitation particularly in conjunction with a high concentration of Rovral Liquid in the spray tank may reduce the suspension properties of Rovral® Liquid, resulting in a scum forming on the surface or sediment forming on the filters.** If the agitation system cannot be adjusted, or concentration reduced to overcome this problem it is recommended that Rovral® Aquaflo be used, where registered.

Special Instructions for Tree Crops/Vines

Dilute Spraying

- Use a sprayer designed to apply high spray volumes, up to the point of run-off and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy. Apply sufficient spray solution to cover the crop to the point of run-off. Avoid excessive run-off.
- The required spray volume to achieve point of run-off may be determined by applying different test volumes, using different settings on the sprayer, or from industry guidelines or other expert advice.
- Add the amount of product specified in the Directions for Use table for each 100 L of water. Spray to the point of run-off.
- The required dilute spray volume to achieve point of run off will change and the sprayer set up and operation may also need to be changed, as the crop grows.

Special instructions for Tree Crops/Vines *continued*

Dilute Spraying (continued)

Concentrate Spraying

- Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies spray volumes less than those required to reach the point of run-off) and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen spray volume.
- Determine an appropriate dilute spray volume (See **Dilute Spraying** above) for the crop canopy. This is needed to calculate the concentrate mixing rate.
- The mixing rate for concentrate spraying can then be calculated in the following way:

  EXAMPLE ONLY

  1. Dilute spray volume as determined above: For example 1500 L/ha
  2. Your chosen concentrate spray volume: For example 500 L/ha
  3. The concentration factor in this example is: 3 X (i.e. 1500 L ÷ 500 L = 3)
  4. If the dilute label rate is 10 mL/100 L, then the concentrate rate becomes 3 x 10, that is 30 mL of product per 100 L water for concentrate spraying.
- The chosen spray volume, amount of product per 100 L of water, and the sprayer set up and operation may need to be changed as the crop grows.
- For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

Compatibility

Rovral Liquid is compatible with the following products:

*Aliette® WG (see NOTE below), azinphos-methyl, benomyl, Bugmaster® Flowable, chlorfenvinphos, chlorpyrifos (500 g/L EC), demeton-S-methyl, Dithane M45®, Thiodan® EC (endosulfan), fenarimol, Kelthane®, Kocide® (Warning: Do not mix Rovral® Liquid with Kocide for use on potatoes), Larvin® 375, Maldison 500, Marlin®, metalaxyl, methamidophos, methyl parathion, pirimicarb, propargite, triadimenol.

When tank mixing products the order of mixing is determined by formulation type.
As a guide the following mixing sequence is recommended:

1. Wettable powders
2. Suspension concentrates
3. Water Dispersible Granules
4. Suspo-emulsions (e.g. Rovral Liquid)
5. Soluble powders
6. Solutions
7. Emulsifiable concentrates
8. Soluble concentrates
9. Wetting agents and oils

With any mixture, thoroughly agitate immediately before applying. It is not recommended to mix this product with more than one of the above chemicals in the tank. The use of a

continued