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The Australian Solution™

Agricultural Product Range



The Australian Solution™

Victorian Chemicals manufactured its first product for agriculture in 1939, Voullaires Ee-Muls-Oyle; this is now the leading Fruit Drying Oil in the Sunraysia Region (Mildura). Since then, our knowledge of oils and surfactant chemistry and manufacturing capability has increased significantly. This has been instrumental in the development of our product range. These products, including the well known spray adjuvants Hasten and Hot-Up, are designed to assist the agricultural industry in its drive for higher productivity and value. Victorian Chemicals remains committed to providing our customers with quality products, and service that is both professional and friendly. We will continue to develop; our understanding of our customers' requirements, the operations of our company and our technical expertise.

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Horticultural Product Guide

	Description	Key Benefit(s)	Applications	Packaging	Crop & Environment Effects			Spray Tank & Application		Efficacy / Mode of Action			
					Fruit & Foliage	IPM	Soil & Water	Droplet Size	Evaporation	Retention	Coverage	Penetration	
Wetting Agents	 DELUGE⁺ LOW FOAM - Wetting Agent	A low foaming 60% Nonionic Surfactant for high value crops	Designed for low phytotoxicity potential and to improve spray results by assisting retention, wetting and spreading of spray droplets and improved uptake of agrichemicals.	Horticulture Viticulture	10L 200L 1000L	LR	MR	A	NE	4	6	5	4
	 SPRINTA⁺ - Superwetter	100% Organosilicone Nonionic Superwetter	Assists retention of spray droplets, provides excellent coverage on target surface and penetration of Horticultural products.	Forestry Horticulture	2.5L 10L	HR	HR	A*	NE	1	6	10	8
	 BUFF-IT⁺ - Spray Adjuvant	A blend of Nonionic Surfactants and Buffering agents with pH Indicator	Buffers spray water to pH range 4 to 5, contains an indicator which changes colour at pH 5, assists spray droplet retention, wetting and spreading on target surfaces.	Horticulture Viticulture Broadacre	20L 110L 1000L	MR	MR	A	NE	4	5	5	4
Oil-Based Adjuvants	 HASTEN⁺ - Spray Adjuvant	Esterified Vegetable Oil (Ethylated) and Nonionic Surfactants	Widely cross labeled with leading Herbicide products, Hasten has excellent surface penetration capabilities and is suitable for use with most Horticultural products and in a wide range of spray conditions. BFA approved*	Herbicides Insecticides Fungicides Defoliants	20L 110L 200L 1000L	MR	LR	A	L	8	5	5	10
	 HOT-UP⁺ - Spray Adjuvant	A blend of Ammonium Sulphate, Nonionic Surfactants and Mineral Oil	Designed to enhance the performance of Glyphosate and other knockdown herbicides in adverse conditions; hard water protection, hot and dry conditions and difficult to wet weeds.	Non-Selective Herbicides	20L 110L 1000L	N/A	N/A	B	NE	6	7	7	6
	 NEXUS⁺ - Spray Adjuvant	Highly refined Canola Oil and Nonionic Surfactants	Enhances spray droplet deposition on the target by improving retention and reducing evaporation rates. BFA approved*	Herbicides Insecticides Fungicides	20L 110L 200L 1000L	LR	LR	A	L	9	3	3	5
Spray Oils	 TRUMP⁺ Spray Oil - Insecticide	Highly refined Paraffinic Oil (USR ⁺ >98%) and Surfactants	Very high purity paraffin oil designed to minimize phytotoxicity potential and assist growers in maximizing the value of their produce by killing pests directly and enhancing the performance of certain Horticultural products. BFA approved*	Horticulture Viticulture Cotton	20L 200L 1000L Bulk	LR/MR	MR	B	L	9	2	3	7
	 VICOL⁺ SUMMER OIL - Insecticide	Highly refined Petroleum Oil (USR ⁺ >92%) and Surfactants	Successfully used by growers for over 15 years for the management of insects and disease in their crops. Suitable for use throughout the year when used according to the label.	Horticulture Viticulture	20L 200L 1000L Bulk	MR	MR	B	L	9	2	3	7
	 VICOL⁺ WINTER OIL - Insecticide	Refined Petroleum Oil and Surfactants	Designed for use only on trees and plants that are completely dormant, this product provides cost effective control of certain insect pests.	Horticulture Viticulture	20L 200L 1000L Bulk	HR	MR	B	L	10	1	2	6
Horticultural Specialties	 HITMAN⁺ - Soap Insecticide	Selected Potassium soaps.	An organically approved contact insecticide for soft bodied insects and wetting agent that has no withholding period and poses a low risk for users and the environment. BFA approved*	Horticulture Viticulture	10L 20L 200L	MR	MR	A	S	3	7	7	3
	 VOULLAIRE'S⁺ EE-MULS-OYLE⁺ - Multi-purpose Drying Oil	Esterified Vegetable Oil and Surfactants.	Reduces the drying time of fruit, particularly grapes. Reduced exposure to the environment can increase the value of the produce. Components approved for use by the USA Food and Drug Administration. BFA approved*	Horticulture	20L 200L 1000L	N/A	N/A	A	L	7	6	6	8
	 GALA⁺ - Growth Regulator	Gibberellic Acid (GA ₃) in Ethyl Oleate and Surfactants	A unique non-flammable and non-poisonous liquid formulation of Gibberellic Acid for use as a foliar spray to promote beneficial effects on grapes, prunes and citrus.	Grapes Citrus Prunes	1L 10L	LR	LR	B	L	8	3	4	9

Product Rating Guide

Introduction:

Products containing oils and surfactants (Products) can be used as adjuvants to enhance the effects of Horticultural products by;

-protecting the Horticultural product's active ingredient (a.i.) from degradation

-increasing the amount of a.i. that hits and is retained on the target

-increasing the spread or penetration of the a.i. across or into the target

-increasing the time the a.i. can be taken up into the target

Or provide direct beneficial effects (Petroleum Spray Oils / Insecticidal Soaps).

In addition to the benefits which these Products may bring, they have potential to cause adverse effects to the Crop and Environment. This Guide is designed to help users and those advising them to select appropriate Products on the basis of the benefits and risks associated with their use.

The following Ratings are based on research results that used Products at rates as recommended on their label. Whilst much of the data for this Guide has been obtained by testing the Products alone (without Horticultural products) it has also drawn on experience of the use of the Products when used as adjuvants with Horticultural products. The effect of adjuvant plus Horticultural product may be greater or less than the expected effect from each applied alone. Environmental conditions can also increase the likelihood of adverse effects. **Therefore it is recommended in all cases when using a Product in a new situation that a test be carried out on a small area before wide scale use.**

Crop & Environmental Effects Fruit & Foliage

The **Fruit and Foliage** ratings are based on a series of trials where Products were applied to Horticultural crops (grapes, apples, tomatoes and lettuce) without any Horticultural products. The Products were generally applied at minimum and maximum label rates at a number of times through a season and then the crops were observed for any adverse effects.

These Products are generally considered inert however, because of their surface acting properties (spreading wetting, penetrating) they may make plant surfaces more susceptible to damage by sunlight, desiccation, other Horticultural products or by direct damage.

LR Low Risk - the Product is unlikely to cause any adverse crop effects.

MR Moderate Risk - use of the Product may result in some damage to certain crops.

HR High Risk - significant crop damage has been observed for these Products. Crop damage for these Products is highly rate dependent so where possible, choosing a lower rate will reduce the risk of adverse crop effects. Testing to small-scale before wider use is strongly recommended.

N/A These Products are not designed for direct use to actively growing crops

Integrated Pest Management

The **IPM** ratings are based on a series of trials where aqueous solutions of the Products were applied directly to the following commercially important beneficials:

Predatory Mite *Typhlodromus occidentalis* (adult mite)

Parasitic Wasp *Trichogramma carverae* (adult wasp)

Predatory Green Lacewing *Mallada signatus* (first instar larvae)

LR The Product is generally considered to pose a low risk to beneficials when used within normal label application rates.

MR The Product poses a low risk to beneficials when used at lower rates but risk increases with increasing use rate.

HR The Product poses a high risk to beneficials and is generally not suited to IPM Programs.

N/A These Products are not designed for direct use to actively growing crops

Soil & Water

The degradation of surfactants and oils in **Soil and Water** is dependent on their chemical structure. Generally materials derived from natural origin such as vegetable oils, which comprise straight chain lipids, are easily and safely biodegraded whilst branched and particularly cyclic structures which are found more commonly in oils from mineral deposits (petroleum oils, mineral oils) are slower to break down and may result in more hazardous by-products as they decompose.

A rating indicates that these products are expected to biodegrade rapidly in the environment.

B rating indicates that the Product will take longer to break down and use on or near waterways should be avoided.

A* rating for Sprinta indicates that this product is toxic to aquatic organisms due to its ability to greatly reduce the surface tension of water. However the organosilicone surfactant is also fairly quick to degrade in water and once the degradation process has commenced the hazard of the product has passed.

Whilst all of the Products listed here are relatively easily and safely biodegraded in the environment, there are oil and surfactant products used in Horticulture which can cause significant environmental problems. Victorian Chemicals chooses not to market such products.

Spray Tank & Application

Droplet Size** - Adjuvants when added to a tank mix of Horticultural products may affect the droplet size that is produced through spray nozzles. In this column, the Products are classed according to whether they will typically increase droplet size (L), decrease droplet size (S) or have no effect (NE).

Evaporation - Rapid spray droplet dry down can adversely affect the performance of some Horticultural products primarily by reducing the time an active ingredient has to penetrate the target. In this column, Products are rated according to how effective they are in reducing the evaporation of spray droplets with Winter Oil at 10 being the best.

Efficacy/Mode of Action

The Ratings for the following categories are based on water alone being 1 with higher values indicating an increase in the particular function.

Retention** - The Products can affect how spray droplets interact with target surfaces on initial impact. In this column, Products are rated according to the degree that they assist in spray droplets being retained on the target with A-Lure rated at 8 being the best.

Coverage - Some Horticultural products require thorough coverage of the target surface for best performance. Coverage is determined primarily by the number of spray droplets present and their degree of spread on the target surface. In this column, Products are rated according to how effective they are in spreading the spray droplet across a target surface with Sprinta rated at 10 being the best.

Penetration - The Products will affect the waxy cuticles on plants to varying degrees and therefore have different capacities in helping Horticultural products penetrate target surfaces. In this column, the Products are rated according to how effective they are in modifying target surfaces to increase active ingredient penetration with Hasten rated at 10 being the best.

**NOTE: Retention & Droplet Size

Products that are less effective at helping retain droplets (<5) generally produce larger droplets ex the nozzle. It is commonly known that smaller droplets are usually more easily retained on target surfaces than larger droplets but are more likely to cause off-target damage. It may be possible, depending on the particular situation at hand, to increase spray droplet retention by setting up the spray system to achieve the optimum droplet size for a certain tank mix and spray conditions. Before undertaking such a step it is recommended that a thorough assessment for potential off-target damage be performed.

*BFA - Biological Farmers of Australia - Allowed Input for Organic growers
+ USR - UnSulphonated Residue - a measure of the paraffinic content or purity of the oil
† Trademark used under licence