

HOT-UP⁺

SPRAY ADJUVANT

Field Trial - 2013

Location: Nungarin WA

Herbicides:

RoundUp* Attack 1000ml/ha

Garlon* FallowMaster 110ml/ha

Spray Volume: 80L/ha

Water Hardness: 285ppm

- Unique blend of non-ionic surfactants, ammonium sulphate and mineral oil in a stable, ready to use formulation.
- For use with knockdown herbicides in non-crop situations.
- Will assist in wetting and spreading of herbicides on weeds.
- Reduces hard water degradation and alkaline hydrolysis of certain herbicides.
- Increases penetration of herbicides through waxy weed cuticles.
- Delays the dry down rate of spray droplets on weeds.
- Enhances the performance of certain combinations of herbicides.

Product Description

HOT-UP is a multi-functional adjuvant designed for use with knockdown herbicides. It is this unique combination of surfactants, ammonium sulphate and mineral oil in an easy to mix and stable formulation that provides HOT-UP with its range of exceptional properties.

Testing and Evaluation

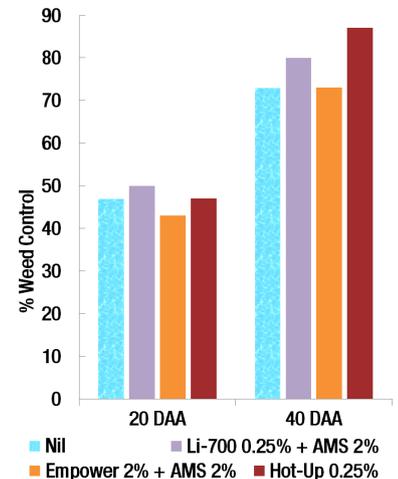
Trials and compatibility studies have shown that HOT-UP is an excellent adjuvant for use with knockdown herbicides particularly when hard water is used and/or the air temperature is high. HOT-UP is suitable for mixing with a wide range of knockdown herbicides and can enhance the performance of certain combinations of herbicides.

Important: Always refer to labels for detailed directions.

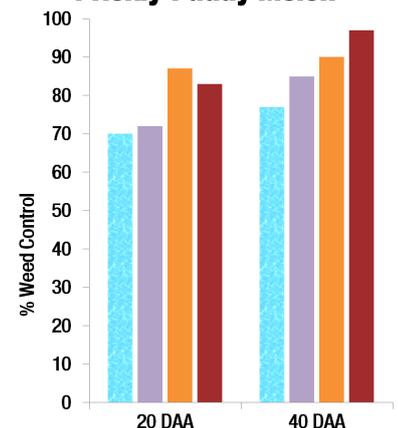
Field trials and controlled glasshouse experiments consistently show that Hot-Up outperforms other adjuvants when applied with Glyphosate (and mixes) especially in hard water. The field trial conducted in WA 2013 showed that Hot-Up @ 0.25% increased the efficacy of RoundUp* Attack + Garlon* Fallowmaster for control of both Melons and Burr Grass. Hot-Up outperformed both the combinations of Empower + Ammonium Sulphate and LI-700* + Ammonium Sulphate.

Glasshouse trial on Oats shows that the efficacy of Glyphosate CT applied without adjuvant is affected by hard water. Addition of Ammonium Sulphate (Assert 2%) improves the efficacy but Hot-Up @ 0.25% clearly boosts the efficacy and is not significantly affected as water hardness increases up to 300ppm.

Small Burr Grass



Prickly Paddy Melon



Glasshouse Trial - 2009

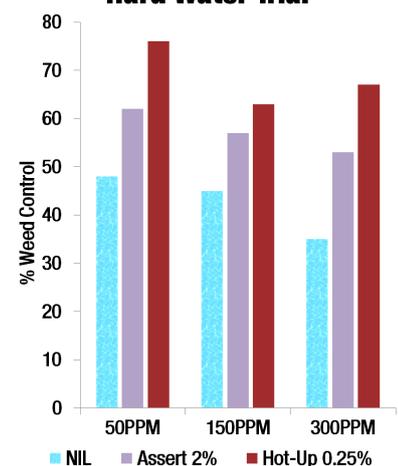
Herbicide: RoundUp CT 222ml/ha

Weed: Oats 1.5 - 2 leaf stage

Spray Volume: 64L/ha

Water Hardness: 50, 150 & 300ppm

Hard Water Trial



HOT-UP[†]

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Product Performance

HOT-UP combines the properties of surfactants, ammonium sulphate and mineral oil, all of which are known to provide adjuvancy to knockdown herbicides under certain conditions.

1. The surfactants lower the surface tension of the spray droplet. This will increase (A) retention of the droplet on the weed surface at initial impact and (B) coverage of the herbicide on the weed surface due to enhanced wetting and spreading. HOT-UP enhances herbicide performance on hard to wet weed surfaces.

2. Ammonium sulphate protects certain herbicides eg. glyphosate from being deactivated in hard water. For optimum results it is necessary to add HOT-UP to the water prior to adding the herbicide. Ammonium sulphate can also assist in the uptake of herbicides into the weed and their translocation to the active site. HOT-UP enhances herbicide performance in hard water.

3. The mineral oil will act as an anti-evaporant slowing the dry down rate of the spray droplet so that the herbicide has a longer time to enter the weed. It will also assist in the modification of the weed's protective cuticle thereby increasing herbicide penetration. HOT-UP can enhance herbicide performance during hot weather.

4. HOT-UP will buffer the pH of spray water to approximately 7.0 which is neutral. This will help to reduce degradation of the herbicide due to alkaline hydrolysis which can occur when the water's pH is greater than pH 7.0.

General Specifications

Appearance	Clear Brown Liquid
Specific Gravity (20°C)	1.05
Flashpoint	> 150°C

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The Company

Victorian Chemical Company is committed to providing quality products and professional and friendly service, that our customers can confidently rely on to add value to their businesses. In order to achieve this goal we will continue to develop, our understanding of our customer's requirements, the operations of our company and our technical expertise.

Suggestions for Use

HOT-UP is designed for use with non-selective herbicides in non-crop situations only. HOT-UP use rate : 0.25 - 1.0 L / 100 L of Spray Volume.

The high end of the HOT-UP usage rate is recommended when ;

- mixing in hard water (>340 ppm CaCO₃)
- conditions are hot or dry
- treating difficult to control weeds

When using a herbicide that can be degraded by hard water (eg. glyphosate), it is advisable when using hard water to add HOT-UP to the spray tank before the herbicide, to reduce herbicide loss.

Compatible Products

All Glyphosate products

Basta*

Lontrel* (clopyralid products)

Garlon* (triclopyr products)

Certain Metsulfuron-methyl products

Ally*, Brush-Off*, MetMac* 600

Goal* (oxyfluorfen products)

Gramoxone* (paraquat products)

Sprayseed* (paraquat/diquat products)

2,4-D products

MCPA products

Not Compatible with;

Genfarm Metsulfuron 600*

Logran* B-Power

Victorian Chemical Company Pty. Limited

83 Maffra Street, Coolaroo, Victoria 3048, Australia

Telephone: (03) 9301 7000

Facsimile: (03) 9309 7966

Website: www.vicchem.com

Email: products@vicchem.com

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