

HASTEN[†]

SPRAY ADJUVANT

HASTEN spray adjuvant is a blend of esterified vegetable oil and non-ionic surfactants that has :

- Proven cost effective performance for over 10 years with a wide range of agricultural products,
- Excellent plant and insect penetrating and wetting properties,
- An internationally recognised tradename and reputation for reliability,
- Approved for use as an Agricultural Adjuvant by local Regulatory Authorities in many countries including USA,
- Renewable material – Vegetable oil – as its base raw material,
- A high quality formulation providing easy dispersion and stable emulsion characteristics, and
- International Patents granted and pending.

Product Description

HASTEN is a unique spray adjuvant that has been designed to improve the efficacy of a wide range of agricultural products including; Herbicides (selective and non-selective), Insecticides, Fungicides and Defoliants.

Insecticide Applications

When **HASTEN** is tank mixed with certain insecticide products and applied in the field, the non-ionic surfactants in the **HASTEN** formulation help to retain spray droplets and ensure thorough coverage of plant surfaces. They also assist in the transfer of the insecticide from spray droplets onto the target insect. The esterified oil in the **HASTEN** formulation will retard crystallization of insecticides as water evaporates from spray droplets. It will also increase the penetration of insecticides through insect cuticles thereby making lower doses more effective in controlling insect populations. It is this dual action of surfactant and esterified oil which makes **HASTEN** a very effective adjuvant with certain insecticides.

HASTEN is primarily used as a tank mix adjuvant, that is, the insecticide and **HASTEN** are added separately to the spray tank. This provides the greatest flexibility for matching the use rate of **HASTEN** with the situation at hand eg. environmental conditions, insect types, spray equipment etc. **HASTEN** can also be formulated directly with insecticide formulations where market conditions make this preferable.

Insecticide Applications

TRIAL 1

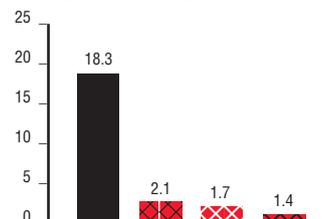
Control of Heliothis in Cotton - India 2002

Insecticide: Alphamethrin 10% EC - 25g a.i./ha

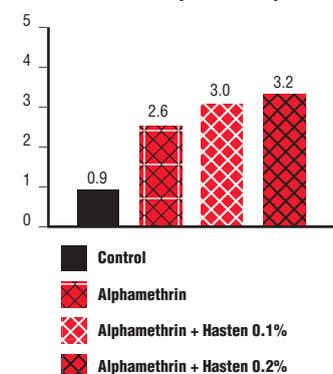
Spray Rate: 500-750L/ha

Application: 7 Applications over 34 Days

Mean % Boll Damage
11 Days after 7th application



Seed Cotton Yield (Tonnes/ha)



TRIAL 2

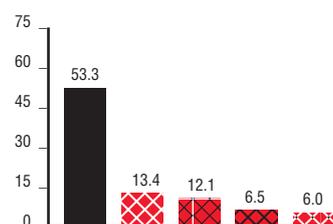
Control of Heliothis in Cotton - India 2004

Insecticide: Lambda Cyhalothrin 5% EC - 40g a.i./ha

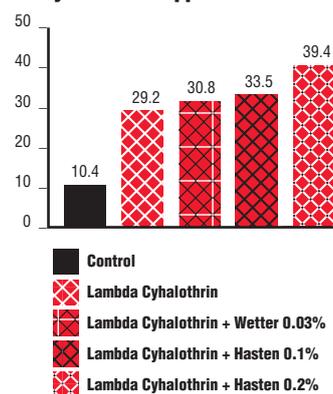
Spray Rate: 450-700L/ha

Application: 7 Applications over 37 Days

Mean percent square damage
6 days after 4th application



Mean number of healthy green bolls/plant
5 days after 7th application



Testing and Evaluation

HASTEN is a non-ionic formulation which makes it compatible with most insecticides. In fact, **HASTEN** has been in use for over 10 years with insecticides around the world and has been found to be physically compatible with major insecticide products.

HASTEN has been tested and evaluated by universities, lifescience companies, research organizations and independent researchers over many years. It has been established that **HASTEN** is a very effective adjuvant for improving the performance of certain insecticides in particular Synthetic Pyrethroids. **HASTEN** has been shown to be softer on certain beneficial insects than either wetting agent or mineral oil based products when used at typical label usage rates.

Commercial Use

HASTEN is successfully used by farmers in many different countries around the world with a diverse range of agricultural products including insecticides. In Australia and the USA, where **HASTEN** has been available commercially for over 10 years, **HASTEN** is recognised as a leading adjuvant by farmers, distributors and lifescience companies. In Asia where climatic conditions often require higher and more frequent dosages of insecticides for effective insect control, the use of **HASTEN** as a key spray adjuvant with insecticides continues to increase.

Suggestions for Use

HASTEN may be used in place of non-ionic surfactants or crop oil concentrates when permitted by insecticide labels.

Typically, **HASTEN** is added to the spray tank at a concentration of 0.5-1.0% when spray volumes are between 50-100 Litres per hectare. In situations where the agricultural practice is to use a higher volume than 100 Litres per hectare, **HASTEN** is typically used at 0.5-1.0 Litres per hectare.

Always strictly follow label instructions before use.

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.

General Information

The information contained in this bulletin is of a general nature. Further information is available regarding **HASTEN'S** use with Herbicides, Fungicides and Defoliants. Please visit our web site at www.vicchem.com to access Label and MSDS information.

General Specifications

| | |
|-------------------------|---------------------|
| Appearance | Bright Clear Liquid |
| Specific Gravity (20°C) | 0.9 g/ml |
| Colour | 10 Gardner Max |

† Trademark used under License

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



Disclaimer: Whilst Victorian Chemical Company Pty Ltd has taken reasonable care in the preparation of this document, the material contained herein is for general information purposes only and should not be used in substitution for the detailed Directions for Use shown on the product labels. Victorian Chemical Company Pty Ltd accepts no responsibility for any consequences whatsoever arising from the use of this information save as may be imposed under any applicable laws.

The Australian Solution™

AGR39 130508