

FROST & COLD SHOCK DESTROY PROFITABILITY



Think rain means mild weather? Think again. As cold rain fronts clear out, they leave behind high moisture, clear skies, and still winds—the exact trigger for severe frost. Wet foliage accelerates cell freezing and dehydration, right when your crop is most vulnerable. Top up your crop's defenses today, with ECTOL Crop and Pasture.

Frost and chill present a major threat to wheat and other small grain yields, particularly from late-boot stage, to head emergence and flowering.

The good news is, there is evidence to suggest that natural plant biochemical extracts can be applied to help mitigate these stresses and potential loss to farmers.

You can protect your wheat and cereal crops from frost and chill, for as little as \$25/ha.

What is frost damage?

Frost damage occurs in plants under low and sub-zero temperatures, with ice crystals forming both inside the plant and outside the individual cell.

The expanding ice crystals suck up water molecules and can cause the cells to dehydrate, damaging many of the sensitive structures.

As a result, frost can cause pinched wheat and reduce yields, due to the destruction of the reproduction cells and pollen.

Can my crops resist frost?

The ability to resist frost stress, which varies by variety, is a physiological process involving a number of plant biochemicals, including plant hormones, growth regulators, sugars and minerals. These are all activated when temperatures fall below 4 °C.

This process, known as 'acclimation' may occur a number of times during the early vegetative stages of growth. However, studies show that plants have a limited ability to acclimate and protect the cells, as environmental conditions, such as warming day temperatures and increasing day length, bring on the reproductive flowering growth stages.

Top-up protection can help

Studies have shown that plant biochemicals, naturally produced during acclimation, can be 'topped-up', when applied as a foliar spray, providing additional protection at a time when the plant is most exposed to frost and chill.

ECTOL frost trials: 20+ years of experience

For over two decades ECTOL has been developing and testing products that help protect crops against frost and chill. Now, farmers can use *ECTOL Crop and Pasture*, which contains many of the natural plant biochemicals, used to protect itself against frost stress.

The ingredients in *ECTOL Crop and Pasture* will boost the plants own protection system, without causing damage to sensitive flowering parts at this critical stage of growth.

The effective protection lasts about 10 days and a further application of 2 Lts/ha can be applied to the crop, if weather conditions justify the decision.

Application: Frost risk generally runs from mid-boot through to flowering, a period of about six weeks.

We recommend:

Low-to-normal seasonal risk:

- 4Lts/ha *ECTOL Crop and Pasture* at head emergence.

High seasonal risk:

- 4Lts/ha *ECTOL Crop and Pasture* at late boot, 2 Lts/ha at flowering. Note a Further 2Lts/ha can be applied 10 days later if season and crop economics are justified.

ECTOL Crop and Pasture is applied with sufficient water to ensure foliar cover and may be applied with other crop protection chemicals.

Typically, the product cost is about \$25/ha (4Lts/ha) – a small price to pay for peace of mind.

For more information call +61 02 9816 2057 or visit www.ectol.com

