

SUNBURST™

SUNBURST™ is:

A Stabilised foliar Urea Nitrogen plus calcium formulation:

Nitrogen N 18%	Ureic Nitrogen N 18%
Calcium Oxide 9.7%	Chlorine 15.9%

optimises the protein potential of milling wheats and can be used as a nitrogen source for other crops.

Supplies the crop with chloride, which has been shown to enhance the plants resistance to both drought and disease, including septoria, fusarium and physiological leaf spot.

Supplies soluble calcium which, if applied at the start of grain fill can re-direct metabolites to the grain.

Increased efficiency of 4:1 ratio over straight urea

Packed in 1000l IBC for easy handling or 200l drums

1000 Litres covers 20ha providing 12 kgs N per hectare

The most cost efficient answer to increased nitrogen application on growing crops.

Sunburst is manufactured by UK Nutrition at UK Nutrition's own manufacturing site, is a registered Trade Mark and subject to ISO quality management accreditation

Nitrogen applied to the soil is taken up mostly as nitrate N since the soil bacteria convert urea N to nitrate. In order to incorporate this into protein the NO_3 has to be reduced to NH_2 .

- Nitrogen applied as a foliar urea spray is largely absorbed in the NH_2 form and is thus more readily incorporated into protein.
- Sunburst is urea solution stabilised with calcium chloride. Standard urea solutions lose N in the ammonium form, this occurs even under cooler conditions in the morning or evening but is greater at higher temperatures. By reducing this loss the plant is able to utilise the N in Sunburst more efficiently thus reducing the rate required.
- Application of Ca to the crop increases the plants uptake of N
- Calcium is essential to increase cell wall strength in all crops. This makes plants more resistant to attack by both pests and diseases, including problem diseases such as Fusarium.
- By strengthening cell walls Calcium reduces levels of transpiration, combined with chloride which helps cells to hold water the resistance of the plant to drought is increased
- Calcium applied to the crop at grain fill also helps to redirect the products of photosynthesis into the grain
- Chloride has been shown to increase kernel growth during the grain fill period and to increase kernel weight.
- Flag leaf senescence, powdery mildew and rust were all suppressed by application of chloride fertiliser
- Common spec for milling wheat is 13% protein/250 hagberg/76kg/hl.
- New varieties and strobilurin fungicides have helped yields to increase year on year
- BUT the amount of Nitrogen applied to wheat has remained static for last 10 years despite this.

- Although yield plateau's as N increases, protein continues to increase
- If N levels are not increased farmers will find it increasingly difficult to achieve required protein.
- 55% of England, 13% of Scotland and 3% of Wales are designated Nitrate Vulnerable Zones- most of arable area
- Farmers in NVZ's must be able to justify the nitrogen they use
- Foliar applications of nitrogen are more efficient at raising protein than granular N
- N applied at the optimum time for foliar application (GS 71-75) does improve leaf score
- However late applications of urea are less efficient than early applications and may leave residues which will cause problems in watercourses etc. The higher the rate of N applied at this time the greater the potential problem.
- Application of stabilised N as Sunburst reduces the amount of N the farmer needs to apply to get the required result from 200l/ha to 50l/ha.
- Sunburst is less subject to volatilisation than standard urea
- Sunburst is less scorching than standard urea
- After anthesis N uptake by roots ceases and most of the N required for grain growth is translocated from vegetative parts. Leaf proteins may be hydrolysed resulting in decreases in the amount and activity of photosynthesis
- The addition of calcium with nitrogen results in increased N absorption, grain yield, and grain weight per unit of dry matter
- Calcium applied with nitrogen increases nitrogen use efficiency by more rapid absorption, greater metabolite deposition in seeds and possibly increases in photosynthesis

- Adding calcium to cereals appears to improve the ability of the plant to move metabolites out of the flag leaf and into grain
- Because less N is applied there are lower residues in the soil to cause environmental problems

There are several competitors for the Milling Wheat Protein and Premium market, but there is only one product, tried and tested by the Scottish Colleges, and recommended for enhancing wheat protein, and that is:

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