



MACRONUTRIENTS

Specialists in Plant Health

Multi N

Unique High Efficiency Foliar Nitrogen



Multi N

Multi N is a unique, cutting-edge, foliar-applied nitrogen fertiliser formulated by complexing Urea Thiosulphate with Ammonium and Nitrate, combining low scorch nitrogen with the most bio-available form of fast-response Sulphur. It is safened by a proprietary formulation of buffers, binding agents, and humectants to provide an instant boost of fast-acting nitrogen to increase protein as well as slower-acting nitrogen, perfect for application on the leaf and to satisfy every need of the crop.

Features:

- A unique high efficiency liquid nitrogen for foliar application with 85% uptake efficiency.
- The perfect combination of humectants, surfactants and spray retention agents uniquely optimised for foliar application and for eliminating ammonia volatilisation
- Urea thiosulphate form inhibits nitrification
- A source of multiple forms of Nitrogen to satisfy every need of the crop
- A source of rapid-acting biologically available Sulphur
- Can be adapted to local registration requirements
- Safe - low biuret content

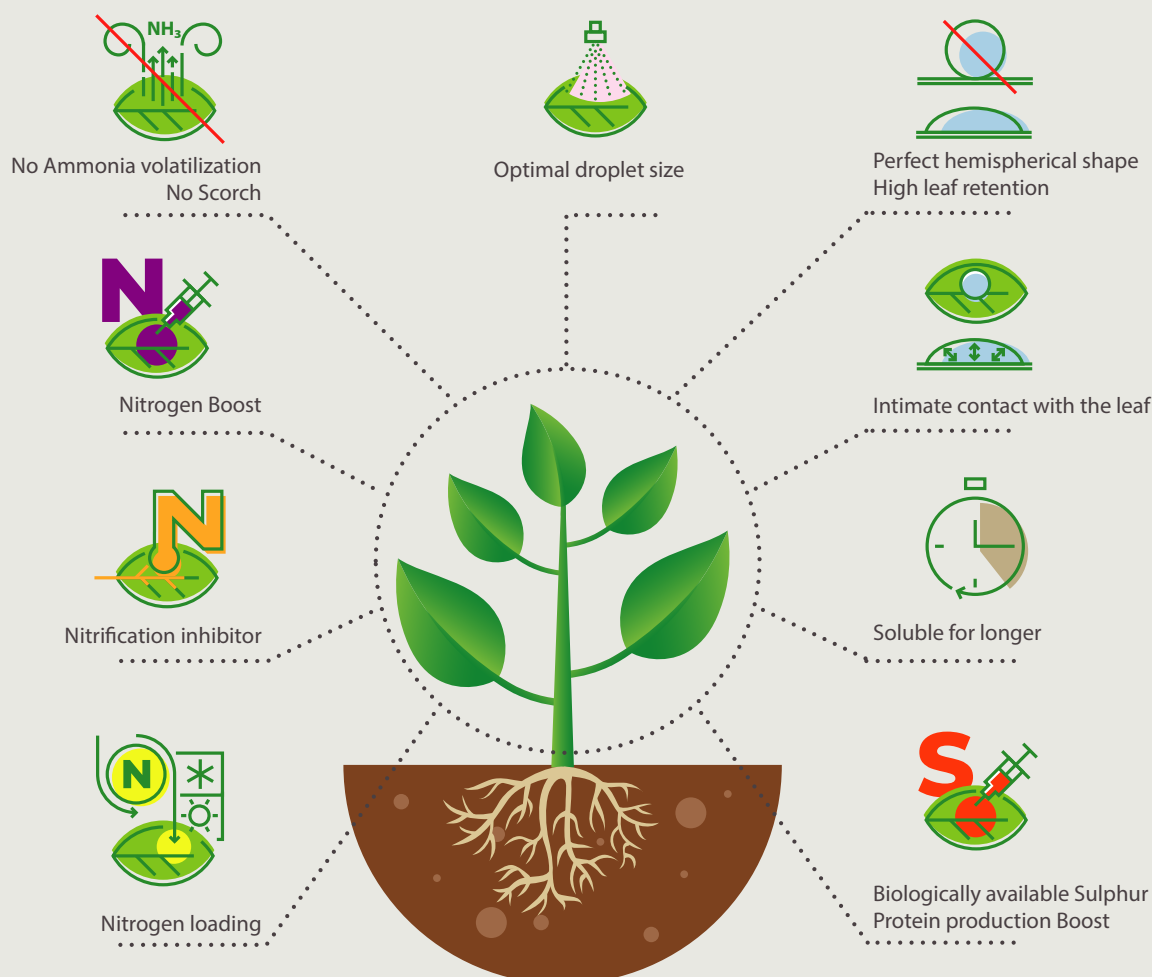
Typical analysis:

Total nitrogen (N)	330 g/L	33%
Ureic N	158 g/L	15.8%
Ammoniacal N	111 g/L	11.1%
Nitrate N	65 g/L	6.5%
Sulphur (SO ₃)	250 g/L	25.0%
Elemental Sulphur (S)	100 g/L	10.0%



How does it work?

Unlike most competing foliar Nitrogen products on the market, Multi-N was specifically designed for foliar application. Where most other products are liquids that were readjusted for foliar application, Multi N was developed over several seasons to create a lowest-possible-scorch foliar product, and was never intended for soil application.



1. Multi N a unique, high tech formulation containing three forms of Nitrogen (Ureic, Ammoniacal and Nitric):



The Nitric form is immediately consumed by the leaf.

The nitrate is instantly available once absorbed by the leaf.



Sulphur in the Urea thiosulphate acts as a nitrification inhibitor

Nitrogen in Multi N is also in the unique thiosulphate form that has an inhibiting effect on the nitrification of ammonia. This becomes available nitrate once it has been transported through both the xylem and the phloem to wherever growth is taking place.



Long term availability: overwintering storage of carbohydrates in perennial crops

Multi-N may also be used for Nitrogen loading of perennial crops as they prepare for winter dormancy and in biannual crops preparing for overwintering. The crop converts the Multi-N into a nutritional carbohydrate source and stores it for later conversion to sugars in the spring

2. Multi N, a rich source of Biologically available sulphur.



The thiosulphate component of Multi N offers a vital source of bio-available Sulphur for immediate incorporation into S-rich amino acids which are key components of grain protein.

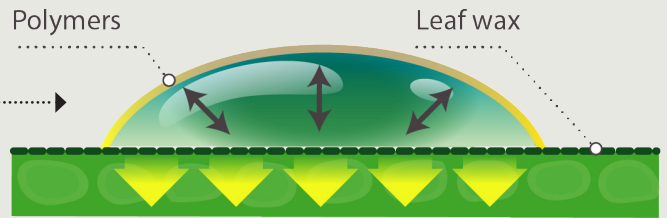
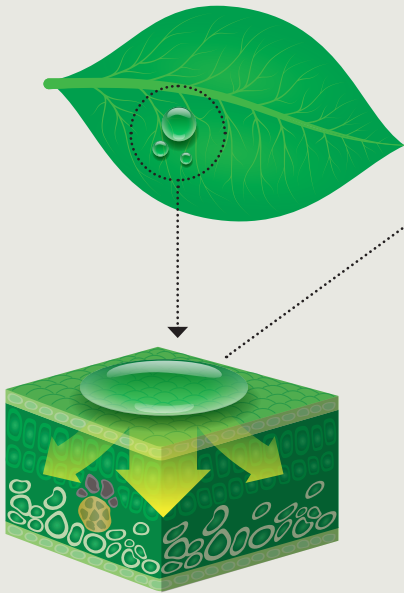
A protein boost for the crop that no other source of Liquid Nitrogen provides.

3. Multi N, a proprietary formulation of binding agents and surfactants

Intimate contact with the leaf for active uptake and no scorch

Multi N contains polymers from the same group of compounds as the leaf wax, creating intimate contact between the liquid and the leaf and allowing the absorption of the content of the droplet by rapid diffusion. The polymers stop the droplet from drying too rapidly and releases little or no ammonia, protecting the leaf from scorch, and maximising uptake. Independent testing shows an uptake efficiency of at least 85%.

Natural humectants and the polymers in the Multi N formulation also slow the drying time by around 30% compared to other products tested.



An optimal combination of plant friendly Surfactants, Lignin salts and Glycols:

A Bigger proportion of optimally sized droplets: between 50 and 250 microns

High droplet retention on the leaf: up to 97% of the material stays on the leaf

A perfect hemispherical shape for maximum uptake, and droplet lifetime

Multi-N keeps delivering Nitrogen through the leaf for 10 minutes longer than other Foliar N products

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As a foliar replacement for soil nitrogen in cereal and vegetable crops, to increase yields and reduce total input by up to 35%.

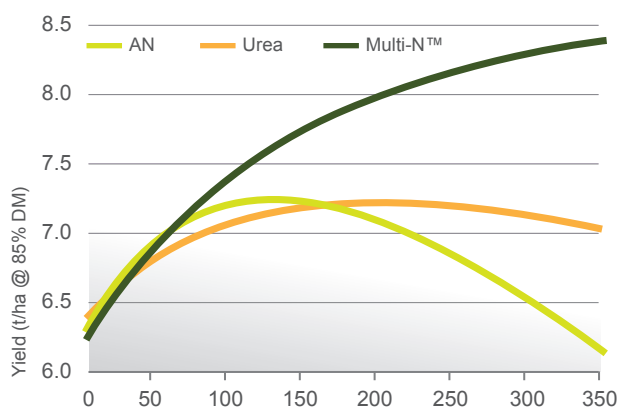
Young plants at the 3 Leaf stage: as little as 3L/ha are effective

Vegetative growth: no more than 40L /ha is recommended.

Reproductive phase of growth: higher rates up to 150L/ha may be used.

The amount required will depend on the overall Nitrogen fertilisation regime and the growing conditions.

Wheat Yield Response to Nitrogen Applied as Ammonium nitrate, urea, or Multi-N*



* 2013 - Pilot trial at ADAS Boxworth



2

As a foliar application for use in protein building in wheat crops

The bio-available thiosulphate sulphur in Multi-N is a key component of protein, accounting for the product's amazing reliability.

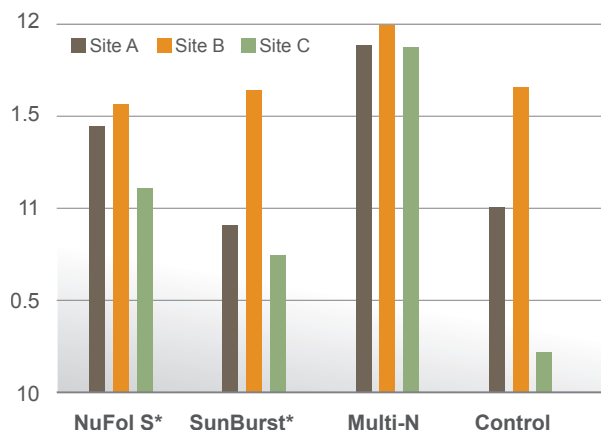
Wheat protein response to nitrogen programs. *

Early Comparative treatments all applied at milky ripe stage:

1. NuFol S** : 20% Urea + S: 200 l/ha
2. SunBurst** : Stabilised Urea: 50 l/ha
3. Multi N: 33l/ha

**All trademarks duly acknowledged

Treatment	NuFol S	SunBurst	Multi-N	Control
Site A Protein	11.4%	10.9%	11.8%	11.0%
Site B Protein	11.5%	11.6%	11.9%	11.6%
Site C Protein	11.1%	10.75%	11.8%	10.2%
Site A Yield	10.0 T/ha	9.8 T/ha	10.12 T/ha	9.9 T/ha
Site B Yield	8.7 T/ha	8.9 T/ha	9.10 T/ha	8.9 T/ha
Site C Yield	10.8 T/ha	10.9 T/ha	11.45 T/ha	10.8 T/ha



* 2013 - Pilot trial at ADAS Boxworth

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Can also be used in programs:

- For canola crops (OSR) to build oil content: apply 25L/ha at mid flower to petal fall.
- For regular feeding of sport turf and amenity grass species to reduce Nitrogen inputs by up to 35% per season: apply Multi N every 3-6 weeks to provide a slower release for sustained growth and to increase blade quality and depth of colour.
- For fruit and nut trees to reduce the effects of the alternate bearing syndrome: apply 40L/ha after harvest followed by Carboplex (2L/ha) when the leaves unfurl the next spring.
- Contact your local supplier for other types of applications.



Dos and Don'ts

Do: Use Multi N when there is enough leaf and ground-cover to absorb the product, with any spraying equipment.
Don't: Waste it spraying on the soil, it is a waste of good technology.

Do: Apply Multi N early in the morning or in the evening.
Don't: Spray in direct sunlight and avoid temperatures over 25°C.

Do: Make tank mixes with compatible pesticide products, and other crop care products and always try a simple jar test first.
Don't: Make tank-mixes with products based on solvents, or other products known to be risky for leaf scorch.

Do: Apply at high rates and in low water volumes.
Don't: Over-dilute Multi-N or it loses its anti-scorch properties. 1L in 30L of water is the absolute safe limit.

Do: Use acidifying water-conditioners in hard water areas
Don't: Use with any products that are highly acidic with a pH below 5.

Do: Apply to healthy crops with well-waxed leaves.
Don't: Apply to crops following heavy rainfall or irrigation and tender new leaves in rapidly growing plants.

Do: Use Multi-N to boost low temperature growth at 5-10°C.
Don't: Apply within 2 days of a frost, or if a frost is imminent.



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