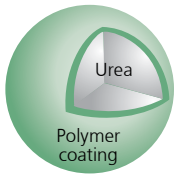
How ESN technology works

Coated nitrogen granules

ESN technology uses a flexible, micro-thin polymer coating to encapsulate an N granule. The coating protects the N from loss mechanisms, releasing it when the crop needs it most.

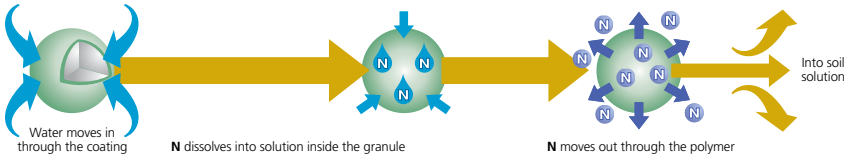


Temperature controlled release

The unique polymer coating releases N based on the two requirements for crop growth: moisture and temperature. Moisture creates an N solution inside the coating, and the solution moves through the coating at a rate based on soil temperature. The movement and rate match the N demand of the growing crop.

Backed by independent research

ESN is backed by over 400 crop years of testing by independent, third party researchers. The data is proof of performance for a unique product.



NOTE: Nothing contained in this document is a guarantee of performance, yield, quality or other benefit resulting from using ESN. The benefits of ESN contained herein are based on average results observed over time in scientific studies conducted under controlled conditions. Actual benefits will vary over time and depending on local conditions.

For more information about ESN technology or to locate the field representative in your area, visit us at SmartNitrogen.com or call 800-403-2861.

Agrium Advanced Technologies™
Smarter Ways To Grow™

Agrium Advanced Technologies (AAT) is a strategic business unit of Agrium Inc. AAT produces and markets controlled-release nutrients, micronutrients and plant protection products for sale to the agricultural, professional turf and ornamental markets primarily in North America.

ESN® SmartNitrogen

Spring and Winter Wheat

ESN technology goes beyond traditional nitrogen

- Maximize N use efficiency
- Maximize yield
- Maximize seed application safety
- Wider application window; improved convenience and ease of use
- Safe for the environment, government purchase incentives may apply
- Backed by independent research

ESN technology for wheat

Wheat needs 30 to 40% of its N by the five to six leaf stage – and 60 to 70% from the start of stem elongation to maturity. ESN technology controls the N supply until the growing plants need it most – which has been shown to increase both yield and grain protein. Additionally, ESN technology virtually eliminates N loss to the environment. Using ESN technology is a smarter way to grow.

ESN technology is shown to improve yield and protein

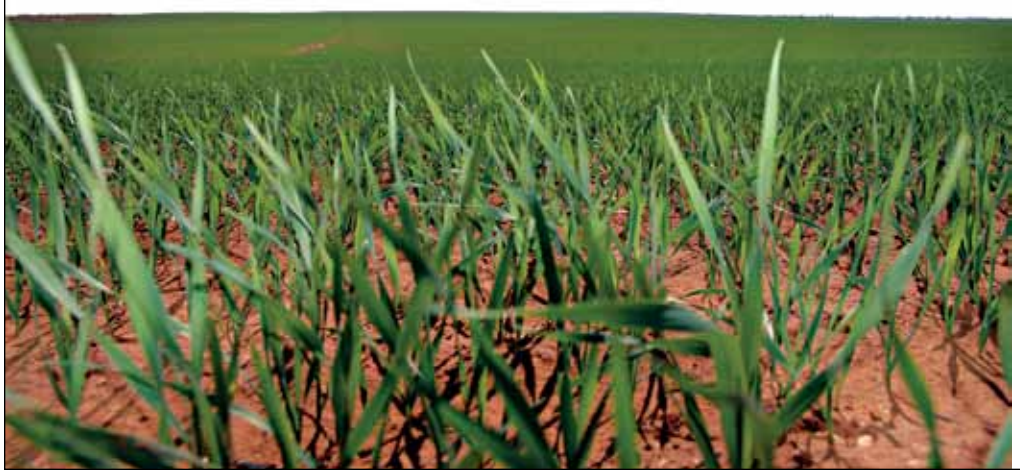
Research has shown that increased yield is a result of ESN technology protecting N from loss to the environment. ESN maximizes N use efficiency, compared with traditional N treatments. From increased yield to reduced N applications, research has shown that that ESN makes wheat better.

Benefits	Hard Red Winter	Soft Red Winter	Soft White Winter	Hard Red Spring
Yield increase/ acre	3-6 bu. (up to 15 bu.)	3-6 bu. (up to 30 bu.)	Av. 10 bu. (up to 20 bu.)	3-6 bu. (up to 15 bu.)
Protein increase	Potentially	Potentially	Potentially	0.5-1% (up to 1.5%)
Seed placement application	Yes	Potentially	Potentially	Yes
Reduced N applications	Yes	Yes	Yes	Potentially

Historical results based on existing data.

Unmatched seed safety

Applied at rates up to three times higher than conventional N fertilizers, ESN won't harm growing seedlings.



Other benefits of ESN technology

Wider application window

ESN provides a wider application window in both the spring and the fall, allowing you to apply fertilizer on your schedule.

Convenient to use and apply

ESN is compatible with no-till operations and is easy to blend. It will not set-up in storage and therefore has a longer shelf life.

Safe for the environment

ESN virtually eliminates N loss, providing significant benefits to the environment. In the US, National NRCS and local EQIP programs offer grower incentives for the use of ESN. To find out more, visit **www.AgriumAT.com/nrcs**.

Application timing and handling

ESN is generally applied at rates similar to conventional N fertilizers. Field location, weather conditions, timing of N demand and potential for N loss are all factors to consider in determining application timing.

ESN was developed and extensively tested to resist the effects of normal handling. Excessive handling can affect the coating and N release.

For more application timing and handling recommendations talk to your local retailer, ESN representative, or visit **www.SmartNitrogen.com**.

ESN®
SmartNitrogen

ESN is the only controlled release nitrogen designed for agriculture that delivers a significant return on investment through increased nitrogen efficiency.