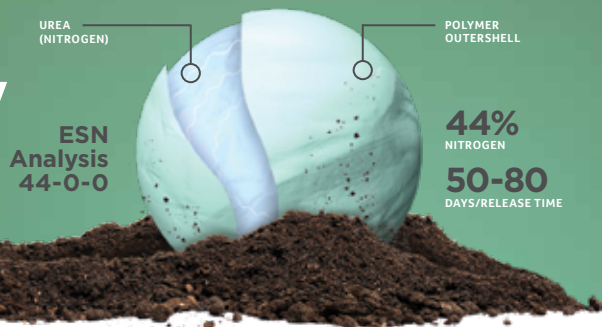




How ESN Technology Works



Coated Nitrogen Granules

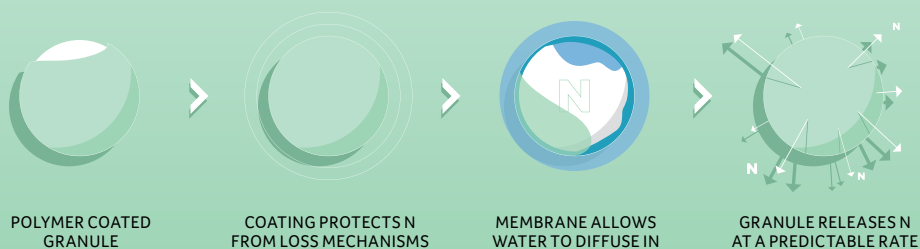
ESN technology uses a flexible, polymer coating to encapsulate an N granule. The coating protects the N from loss mechanisms, releasing it when the crop needs it most.

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 800 crop years of testing by independent, third-party researchers. The data is proof of performance for a unique product.



Potatoes



- Enhances nitrogen use efficiency
- Improves crop yield and quality
- Provides convenience through ease of use
- Environmentally responsible



Learn more about the industry's leading environmentally smart nitrogen at smartnitrogen.com





ESN Technology for Potatoes

Potatoes require high nitrogen (N) rates, and timing is critical. The crop consumes 60 to 80% of its total N needs during tuber initiation and tuber bulking.

ESN technology controls the N supply until the growing plants need it most. Additionally, it significantly reduces N loss to the environment. Using ESN technology is a smarter way to grow.

ESN Technology and Increased Yield

Research has shown that increased yield is a result of ESN technology protecting N from being lost to the environment. ESN maximizes N efficiency, compared with similar N treatments from urea or UAN. From increased yield to increased quality to reduced N applications, research in various U.S. and Canadian locations has shown that ESN makes potatoes better.

Benefit	Average Range	High
Increase in marketable yield (bu/acre)	5-10%	30%
Increase in % of #1s	Up to 10%	25%
Reduced N applications	1-10	n/a

Historical results based on existing data.

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

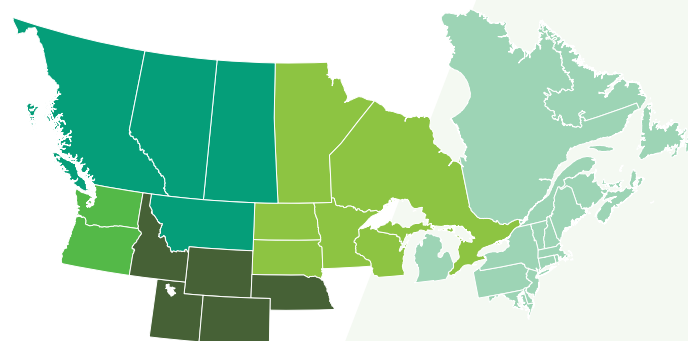
ESN is compatible with no-till operations and is easy to blend. It will not set up in storage and therefore has a longer shelf life.

REDUCED LODGING

ESN's controlled nitrogen feeding may reduce lodging by preventing excessive early vegetative growth.

ENVIRONMENTALLY RESPONSIBLE

ESN significantly reduces N loss, providing substantial benefits to the environment. In the U.S., the national NRCS and local EQIP programs offer grower incentives for the use of ESN.



ESN Use Recommendations

Geography	Intermediate (Full-Season) ESN Use	Determinate (Short-Season) ESN Use
AREA 1	75% of N as ESN at emergence	80-100% of N at planting, in most cases, further N is not required
AREA 2	100% of N as ESN at emergence	80-100% of N at planting, in most cases, further N is not required
AREA 3	100% of N as ESN at planting	80-100% of N at planting, with 50-60% of blend as ESN, in most cases, further N is not required
AREA 4	100% of N as ESN at emergence	80-100% of N at planting, in most cases, further N is not required
AREA 5	100% of N as ESN at emergence	80-100% of N at planting, in most cases, further N is not required



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

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 smartnitrogen.com.