ESN Technology and the Benefits of Seed Safety on Cereal Grains

Why Should I Care About Seed Safety?

In today’s world, we all search for ways to make our operations more efficient. For nitrogen management, many markets have pursued options for one-pass systems to increase efficiencies. Over the past 10 years, the introduction of the mid-row bander and side banding equipment was essential to help growers apply fertilizer in a single pass. This equipment was required specifically because excessive unprotected nitrogen harmed the seed. High salt and free ammonia was preventing germination and burning small seedlings, causing stand loss. Data shows that yields were and still are dramatically reduced. Growers simply were limited to an amount of fertilizer that could be applied using a single shoot system.

ESN technology protects your nitrogen (N) investment and protects your seed, allowing you to increase your efficiencies by using a single shoot system, pulling more feet with less horsepower. In addition, you get the N efficiency benefits provided by using ESN.

How does ESN technology protect my seed? ESN technology uses a flexible polymer coating to encapsulate an N granule. The coating protects the N from loss mechanisms and releases nitrogen based on temperature and soil moisture. Another important benefit of this coating is providing a physical barrier between your N source and your seed, ensuring that your seedlings are not damaged, while providing N when the crop needs it most.

How can we help?

To make ESN a part of your nitrogen management program, contact an authorized retailer or ESN representative.

For more information:
www.SmartNitrogen.com

ESN Representative:
Table of Safe Nitrogen Rates When Applying ESN

<table>
<thead>
<tr>
<th>Rows Spacing (in.)</th>
<th>Seed Bed Utilization (SBU)</th>
<th>Pounds of N per acre</th>
<th>Heavy (Clay to Heavy Clay)</th>
<th>Medium (Clay loam)</th>
<th>Light (Sandy Loam)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 inch</td>
<td>25%</td>
<td>10%</td>
<td>0</td>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>2 inch</td>
<td>50%</td>
<td>22%</td>
<td>3</td>
<td>75</td>
<td>30</td>
</tr>
<tr>
<td>3 inch</td>
<td>90%</td>
<td>3%</td>
<td>11%</td>
<td>120</td>
<td>60</td>
</tr>
</tbody>
</table>

With a wider application window, increased convenience, and ease of use, ESN protects your nitrogen investment from N loss mechanisms helping you:

- Backed by independent research
- Environmentally Responsible
- With a wider application window, increased convenience, and ease of use
- Maximize yield and quality (increase protein levels in wheat, maximize grain quality, etc.)