

Spring-applied fertilizer

After a very late harvesting season, not a lot of fall fertilizer was applied in parts of Iowa. You are right on the money, all fall fertilizer applications were down. Dry P and K went a little better than NH₃, but there is still a fair amount of dry to spread.

When it comes to NH₃... it was a brutal fall. Some of the folks in the supply chain are saying it was “the worst fall application season ever”. I don’t know if it is the worst one ever, but between my retail years and now as an ISU agronomist, it is at least one of the worst as far as I can tell.

We’ve been through rough falls in the past, and one way or another we got the nitrogen applied. The types of N fertilizers may have shifted around, and rates, timing and application methods moved to plans B, C or D, but almost all of the acres got covered.

It all comes down to the type of spring we have. If we can get an early start so NH₃ has significant movement in March and early April, followed by more clear weather for applications of liquid and dry N that are typically applied closer to planting- things will likely be pretty smooth. If it is a wet spring... then having plans B, C and D will be imperative.

How should farmers approach applying fertilizer in a tight window?

Usually not a concern but after a fall like this one, fertilizer logistics with supplies and application equipment can be a headache. Communication with your local suppliers will be a key. Keep them up to speed on your plans; what type of N, who will apply it, when and with what equipment. Folks with their own application equipment will still want to talk about supply and transportation issues.

For operations that rely on custom application, make sure the applicators are on the same page in terms of timing, N sources and acres you need covered.

And as mentioned earlier, have some contingency plans for when things change.

From the supply and application side of things, a recent trend is hopefully going to work in our favor. Some of us in the industry had noticed that there had some traditional fall applied NH₃ farm operations that had started shifting towards spring applied nitrogen. How widespread this might be is hard to tell, but a recent survey of ag retailers indicates it may be a growing trend. A retailer focused publication, CropLife, conducted a survey looking at this and it does look like there is a movement towards more spring applied N. According to the 2018 survey of ag retailers, 61% of respondents say that the majority of their nitrogen application work is being done in the spring. Another 30% have noted a definite shift from fall-applied nitrogen to spring/in-season application instead. Only 9% of the nation’s top ag retailers still have their grower-customers sticking with a fall-applied nitrogen program and expect that to continue.

So that trend may help us somewhat this spring, even if the response from industry has been as gradual as the shift when I started noticing it. If this has been a trend for several seasons, then the supply chain from fertilizer producers all the way to local retailers has probably adapted to some degree. Hopefully that means a little more capacity each season for transport, storage and application of N fertilizers in the spring. Sure, this extra capacity is incremental and in no way makes up for the fall applied N tonnage now moved to spring, but it will help.

Is there a particular fertilizer that works best in this situation?

This is one of those good news/bad news sort of things, and one that many farmers are familiar with. The good news is that if used properly, the three major forms of N- NH₃, dry and liquid- are all a relatively equal fit from an agronomic perspective. More good news is that even in awful springs when time is short and there are logistical problems with fertilizer movement that limit availability of one or more of them- almost always at least one of the other forms has been available. The bad news is that switching from one form to another isn't always as easy from an application perspective, and cost per pound of N can be an issue depending on several factors.

A few things to keep in mind about each type of fertilizer;

Spring applied NH₃

- This spring may mean wet soils- which can be problematic with NH₃. Getting the knife slot to seal can be a challenge, and soil compaction is a concern as well
- NH₃ burn on corn roots is another concern, which is probably a short article on its own since preventing it is not an exact science
- This stuff is flat out dangerous anytime; in a rushed and hectic spring I worry even more. After dealing with more than a few NH₃ incidents as a retailer, a firefighter and on the farm- I cannot emphasize safety enough. Around any NH₃ equipment, applicators, hoses, whatever- assume NH₃ is in tanks or lines somewhere even if it should be empty, wear all your PPE , carry a small squirt bottle of water on you and know where you need to crawl to get to more.

28/32% UAN

- UAN is half urea and half ammonium nitrate. Most folks are familiar with nitrate mobility, so the other thing to remember is that the urea portion has some issues you'll want to keep in mind and try to manage, primarily the risk of volatilization. I don't want to get into any sort of chemistry lesson, but this little soundbyte is helpful- the urease enzyme is the culprit. So that is why some folks opt for the added cost of "urease inhibitors" to slow urea conversion and allow more time for rainfall to move urea into the soil. Worthy of an article as well.
- If you lightly incorporate liquid N or get a light rain on it (1/4" to 1/2") within a day or two of application, volatile loss shouldn't be an issue.

Dry N

- Urea is the primary dry N in the Midwest and if you recall from the liquid N discussion, urea is susceptible to volatile loss so incorporation or rainfall within a couple days will mitigate that risk.
- Urease inhibitors or polymer coated urea are options as well.
- Two other forms of dry N that are not subject to volatile losses are ammonium nitrate and ammonium sulfate. We used to use a fair amount of ammonium nitrate in Iowa years ago, and it would probably be a fairly popular N source for no-till acres and pastures if we could still get it. Potential for misuse in explosive compounds has essentially removed it from our marketplace. While not a direct substitute, ammonium sulfate has steadily grown in availability and has seen more use recently as a source of nitrogen and sulfate.

Sidedress N is another option if things go totally sideways this spring and you have to plant and can't get the N on before then. Sidedress acres are still a relatively small part of the market, but it has been a growing trend, so there are more options and equipment available now than ever. Again, there are pros and cons to the various sidedress application methods and N products, so maybe another topic of discussion for your local supplier.