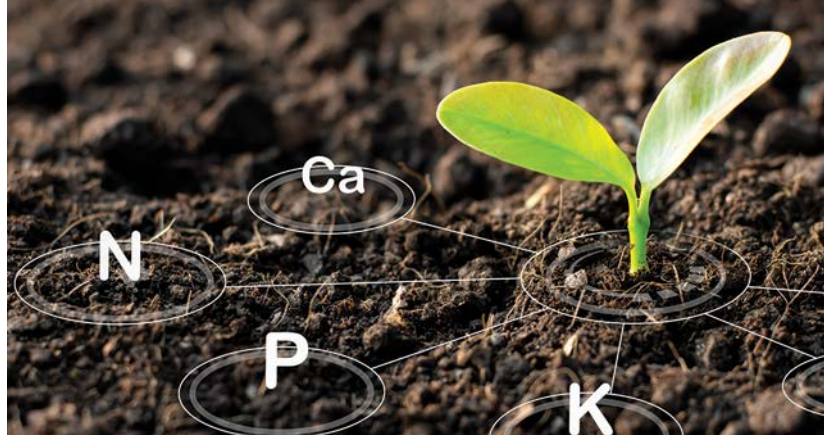


# Choosing the right nitrogen source for your acres



As you consider fertilizer it's a good idea to review the pros and cons of the various nitrogen types. This is especially important as fertilizer prices have gone up exponentially over the last year. You'll want to make sure you're getting a good return on investment now and in the future. Mike Moechnig is a Field Scientist for Corteva Agriscience. He runs down the four major nitrogen fertilizer types to help you decide what will give you the best ROI.

## UAN

### Pros

- Because UAN is liquid, it can be applied with a sprayer. So, it can be tank-mixed with some soil-active herbicides, and no additional or special equipment is required.
- It does not volatilize as much as urea when on the soil surface.
- UAN can be easier for soil-injected sidedress applications than urea.
- This fertilizer type also can be applied with irrigation.

### Cons

- UAN is less concentrated than urea and can nitrify more quickly due to greater nitrate content.
- Sidedress applications of UAN often need to be soil-directed or applied in streams to minimize canopy necrosis.
- This fertilizer type can be more difficult to store in cooler, northern climates due to "salting out," when solids precipitate out of the solution.

## Manure

### Pros

- Manure is free if the source is your own livestock, and it can be relatively low cost otherwise.
- It has several additional benefits than just fertility. Manure contains other nutrients, like carbon, and can promote beneficial microbial populations that can improve soil structure and nutrient availability.
- This fertilizer type may be slower release and provide a steadier supply of nitrogen than conventional fertilizers.

### Cons

- Manure is lower in nitrogen concentration than other products, so a high rate is required.
- The application process for manure is much slower and more costly than for other fertilizers.
- The nutrients in this fertilizer type may not be balanced and the nutrient concentration may vary.
- It can be difficult to store, which can require applications at non-optimal times.



## Anhydrous ammonia

### Pros

- Anhydrous ammonia is typically a cheaper source of nitrogen than other products.
- It has a high concentration of nitrogen, so you need a lower quantity of it per acre.
- This fertilizer type does not nitrify as quickly as other types, so N loss is slower.

### Cons

- Anhydrous ammonia is difficult to handle, requiring special equipment. It's also subject to more restrictions than other types.
- There are limited application options, as it must be soil-injected. Soil injection reduces application speed and requires soil conditions that enable furrow closure, meaning it must not be too wet or too dry.
- Anhydrous ammonia can be more difficult to apply after crop emergence than other nitrogen fertilizers.

## Urea

### Pros

- Urea has a greater nitrogen concentration than UAN, so less product is required per acre and it is slower to nitrify than UAN.
- You can broadcast it over a crop canopy; the urea granules will fall to the soil surface, which minimizes the risk of leaf burn.
- Storage for urea is simpler, as it does not require special tanks.
- This nitrogen fertilizer type is easy to blend with other dry fertilizers.

### Cons

- Urea does require a fertilizer spreader for applications.
- It can be more difficult to inject into the soil than liquid products.

*Regardless of the nitrogen fertilizer type, it's essential to protect it from loss with a nitrogen stabilizer. Corteva Agriscience has a solution for each type: N-Serve® nitrogen stabilizer is used with anhydrous ammonia, and Instinct NXTGEN® nitrogen stabilizer is used with urea, UAN and manure. Both products extend nitrogen availability in the corn root zone for optimized yield potential. Utrisha™ N nutrient efficiency optimizer is a new biological product option for customers to consider. It complements other sources of nitrogen by enabling plants to fix nitrogen from the atmosphere.*

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