

## FORAGE

### N-rich strips hold value for wheat producers

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**Traditionally,** wheat producers in the Southern Great Plains have applied about 80 pounds of actual nitrogen (N) per acre at planting time and 60 pounds

of actual N per acre at spring top-dress time. A general rule of thumb is it takes 2 pounds of actual N to make 1 bushel of wheat grain and 1 pound of actual N to make an additional 20 pounds of forage dry matter. However, those numbers are averages, which can be misleading.

Oklahoma State University research shows that in about one-fourth to one-third of the years, there is little to no added grain production with added N fertilizer. There are numerous reasons for this lack of fertilizer response, such as biological release or tie up of N, lack of accounting for N deep in the soil profile, and lack of favorable weather for wheat growth. But how is a producer to know when those years with no N response will be? The best answer to that question at this time is to apply N-rich strips in the fall.

An N-rich strip has enough additional N to not be N-limited under any circumstances. Producers can easily implement N-rich strips on their



fields by making a single pass across each field with a relatively high rate of N fertilizer on top of a reasonable amount of N fertilizer applied to the entire field. The basic practice looks like what is described below.

Before, at or shortly after planting, apply a portion of the expected season-long N requirement, perhaps 40 to 50 pounds of actual N per acre. After the rush of getting wheat planted is done, go back in one strip across each field with additional N at a rate high enough that it should not all be used during the season, per-

haps 100 pounds of actual N per acre. The spot for the N-rich strip should be easy to view and is typically done from a gate to a fixed landmark on the horizon such as a tower, barn, etc. As the season progresses, watch and compare the N-rich strip to the rest of the field.

If a difference between the N-rich strip and the rest of the field becomes visible, then top-dress N applications can be made with a degree of confidence that there will be a positive yield response. However, if no visible difference occurs, it may be one of ▶

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those one-fourth to one-third of the years when there will not be a yield response to additional N, and top-dress N can be reduced or eliminated. For the traditional top-dress rate of 60 pounds of actual N per acre and an N price of 50 cents per pound of N, this could be a savings of \$30 per acre.

There are some tricks to apply-

ing N-rich strips so they are useful. If they are applied with dry fertilizer in a buggy, it is often difficult to find the edges of the strip because of the feathered pattern that buggies apply. It is better to apply dry N sources with an airflow spreader or with a planter. If they are applied with liquid fertilizer, there is a risk of burning the wheat based on the spray tip used,

the weather and the wheat growth stage at the time of application. It is better to apply liquid during cool weather with streamers or dribble bars, and use a watered-down solution. Keep these in mind when planning N-rich strips.

More information about N-rich strips can be found at [www.nue.okstate.edu](http://www.nue.okstate.edu). ■