



# Spring Wheat Fertilizer Program Comparison

Fehringer Agricultural Consulting . Billings, MT. 2017-2018

## Experiment Info:

|               |            |
|---------------|------------|
| Planted:      | 05/07/2018 |
| Harvest:      | 09/12/2018 |
| Yield Goal:   | 70 Bu/A    |
| Target Fert.: | 80-35-0    |
| Variety:      | Vida       |
| Population:   | 1,000,000  |
| Row Width:    | 7.5"       |
| Prev. Crop:   | Spr wheat  |
| Plot Size:    | 4' x 70'   |
| Replications: | 4          |

## Soil Test Values (ppm):

|           |      |
|-----------|------|
| pH:       | 7.6  |
| CEC:      | 29.5 |
| %OM:      | 2.1  |
| Bray P1:  |      |
| Bicarb P: | 14   |
| K:        | 416  |
| S:        | 6    |
| %K:       | 3.6  |
| %Mg:      |      |
| %Ca:      |      |
| %H:       |      |
| Zn:       | 1.1  |
| Mn:       | 1.8  |
| B:        |      |

## Objective:

Evaluate base fertilizer programs of sources and placement for effect on yield and grain protein of spring wheat.

This experiment is the compilation of two years of testing of basic treatment comparison of AgroLiquid fertilizers where 1) all products were applied in a single pre-plant streamed application or 2) a treatment where the High NRG-N was applied preplant streamed and the Pro-Germinator + Micro 500 was applied through a drill or 3) a conventional treatment where urea was applied preplant incorporated and the 11-52-0 (MAP) was applied through the drill mixed with the seed. (Note: it is a common grower practice to apply half of the normal rate of MAP when applied in this manner, being mixed with the seed. These same treatments were applied in a test in 2017 from this location.

The yield and grain protein results from the two years are in the following table.

| Fertilizer treatment  | 2017<br>Bu/A | 2018<br>Bu/A | Avg<br>Bu/A | 2017<br>% protein | 2018<br>% protein | Avg<br>% protein |
|---|--------------|--------------|-------------|-------------------|-------------------|------------------|
| <b>Preplant stream (16 + 3.5 + 0.25 + 1 gal)<br/>High NRG-N + Pro-Germ + Micro 500 + accesS</b>                 | 75.7         | 77.7         | <b>76.7</b> | 13.9              | 14.4              | <b>14.2</b>      |
| <b>Preplant stream (16 + 1 gal); Drill (3.5 + 0.25 gal)<br/>High NRG-N + accesS: Pro-Germinator + Micro 500</b> | 72.2         | 77.9         | <b>75.1</b> | 13.8              | 14                | <b>13.9</b>      |
| <b>Preplant broadcast (156 lb); Mixed with seed (35 lb)<br/>urea; 11-52-0 (MAP)</b>                             | 67.2         | 76.8         | <b>72</b>   | 14.4              | 15                | <b>14.7</b>      |

## Conclusions:

- As has been seen here and elsewhere, the treatment with all products applied in a single preplant application was better than a split application with the High NRG-N applied preplant and the Pro-Germinator + Micro 500 applied through the drill.
- It was previously found that applying part of the nitrogen through the drill resulted in lower wheat yields than when the nitrogen is all applied in a separate preplant application. This plus the above results suggest that it is better to make a single application ahead of planting.
- The split application of the urea and MAP did not result in a yield that was higher than the AgroLiquid treatments, although the grain protein was higher.