

### Experiment Info:

Planted:	4/13
Variety:	Dark Northern Sp
Row Spacing:	drill
Previous Crop:	wheat
Plot Size:	8' x 40'
Replications:	4
Harvested:	8/30

### Soil Test Values (ppm):

pH:	5.6
CEC:	16.9
% OM:	3.05
Bicarb P:	20
K:	676
S:	8
% K:	10.2
% Mg:	7.1
% Ca:	43.9
% H:	38
% Na:	0.7
Zn:	0.8
Mn:	26
B:	0.29

### Objective:

Compare the effects of different drill-applied liquid fertilizers and additives on yield of Dark Northern Spring wheat.

A series of fertilizer treatments were applied through a wheat drill to test different fertilizers and to see if any fertilizer additions would show an increase in yield. This test was established in the Palouse region of Eastern Washington where spring wheat is commonly grown. Treatments were applied with a plot drill. Due to the low fertilizer application rates, water was used as a carrier for a total application volume of 20 gal/A. The source fertilizer comparison was between Pro-Germinator and 10-34-0. Pro-Germinator is often recommended at a rate that is 40% of the volume of 10-34-0. There were several additives to the Pro-Germinator to be tested for effect on yield. Micronutrient products Micro 500 and Tracite Zn were added as was Sure-K. This soil is actually rather high in both P and K, so this is a good test. The pH is also low (5.6). So this would be a good situation in which to test the addition of LiberateCa, a liquid calcium that can be safely added to Pro-Germinator. The experiment was established in a grower field and the nitrogen application details are not known. Treatment yields are in the following table.

	Fertilizer	Rate/A	Bu/A
1.	no drill fertilizer		<b>48</b>
2.	10-34-0	3.75 gal	<b>59.5</b>
3.	Pro-Germinator	1.5 gal	<b>56.9</b>
4.	Pro-Germ + Micro 500	1.5 gal + 1 pt	<b>53.8</b>
5.	Pro-Germ + Micro 500	1.5 gal + 1 qt	<b>57.5</b>
6.	Pro-Germ + Tracite Zn	1.5 gal + 1 pt	<b>56.5</b>
7.	Pro-Germinator	2 gal	<b>58.6</b>
8.	Pro-Germ + Sure-K	1.5 gal + 1 gal	<b>59.6</b>
9.	Pro-Germ + Sure-K	1.5 gal + 2 qt	<b>55.5</b>
10.	Pro-Germ + LiberateCa	1.5 gal + 1 qt	<b>58.2</b>
11.	Pro-Germ + LiberateCa	1.5 gal + 2 qt	<b>57.7</b>
		LSD(0.05):	6.3
		LSD(0.1):	5.2

Yields are average of 4 replications

### Conclusions:

- All fertilizer treatments resulted in a statistically significant yield increase over the no drill fertilizer treatment. Well that was certainly good news.
- However, there were no significant differences in the yields of any of the fertilizer treatments. Even though there are some slightly higher yield numbers from some treatments, due to the variability across the four replications, there is no solid treatment difference. This is unfortunate especially for the additives.
- The low rates of liquid fertilizers do show good return of yield for the volume applied.
- The low pH may have had an effect on the fertilizer performance and wheat growth with such a high level of soil acidity. Hydrogen makes up 38% of the base saturation.