



Fertilizer Comparisons in Soybeans in Low Soil pH

Real Farm Research. Mitchell, SD

Experiment Info:

Planted:	6/1/2017
Harvest:	10/12/2017
Yield Goal:	60
Target Fert.:	0-40-0-2 Zn
Variety:	Myco. 5B264R2
Population:	140,000
Row Width:	30"
Prev. Crop:	corn
Plot Size:	10' x 97'
Replications:	2
Foliar:	R1, 08/02/17

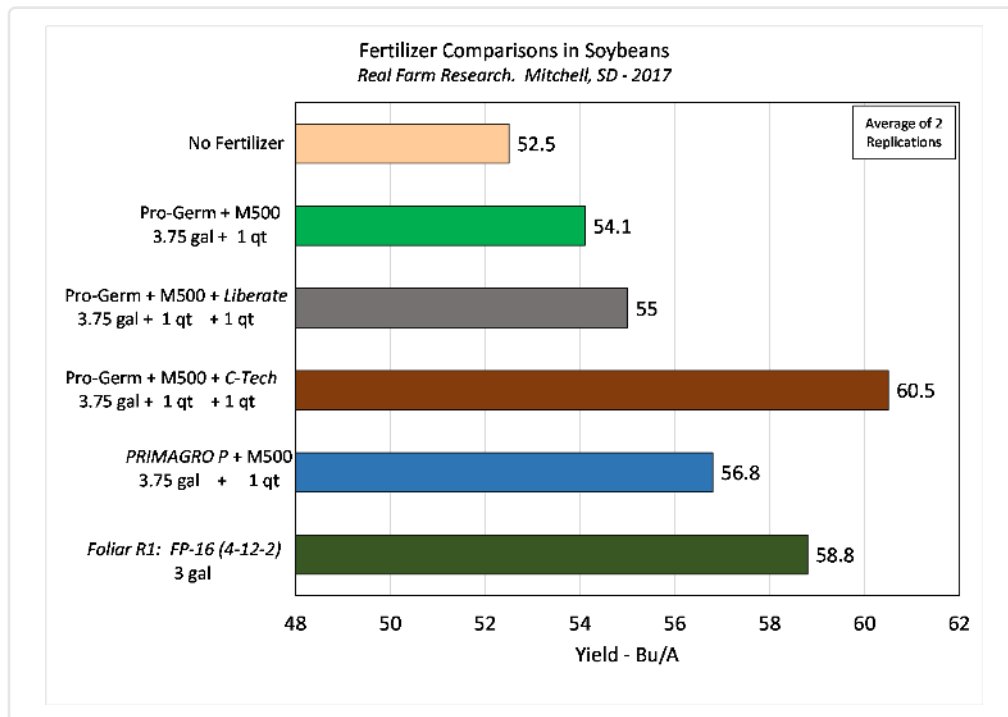
Soil Test Values (ppm):

pH:	5.8
CEC:	22.5
%OM:	3.3
Bray P1:	M3: 14
Bicarb P:	
K:	242
S:	7
%K:	3
%Mg:	22
%Ca:	40
%H:	35
Zn:	0.66
Mn:	53.4
B:	

Objective:

Evaluate several different fertilizer programs for effect on soybean yield.

It is sometimes a challenge to develop an effective soybean fertilizer program as many times soybeans yield well with no fertilizer, even in soils that would suggest otherwise. This particular location has somewhat heavy silty clay loam soil with a low pH and soil test P. Ideally pH correction would be a primary recommendation. Can fertilizer have an effect in soil with a hydrogen base saturation of 35%? In a test in corn near this location in 2015, there was a significant yield increase with the addition of Liberate CA to the planter fertilizer. This has also been observed at the NCRS in corn and soybeans. Additionally, C-Tech as a planter fertilizer additive was evaluated. PRIMAGRO P was also applied for comparison to the C-Tech addition. Planter fertilizers were applied in the seed furrow. Effective foliar phosphorus fertilizer has been a challenge, and an experimental foliar fertilizer with phosphorus was included as a test treatment. Yields are in the following chart.



Conclusions:

- The experiment experienced dry conditions in the month following planting (1.23" rain), but ended up with 4.38" in July and 3.73" in August. 3.24" in September. So conditions were favorable for good yields.
- The No Fertilizer check yielded 52.5 Bu/A, which is good but not great. This is likely due to late planting and low soil pH. The standard of Pro-Germinator + Micro 500 did result in only a modest yield increase.
- The addition of Liberate CA did not result in a yield increase as was expected. But the addition of the biological C-Tech did result in a 6.4 Bu/A yield increase. This was the highest yielding treatment in the test.
- The biological PRIMAGRO P did result in a higher yield than did an equal rate of Pro-Germinator.
- The experimental foliar fertilizer also resulted in a higher yield than that of the standard which is promising.