



Corn Price Fertilizer Budget Challenge

Henderson Farms, Alabama: 2024

Experiment Info	
Planted:	
Harvested:	
Yield Goal:	
Variety:	
Pop.:	
Row Width:	
Prev. Crop:	
Plot Size:	
Reps:	

Soil Test (ppm)	
pH:	6.12
CEC:	10.17
%OM:	
Bray P1:	32.59
Bicarb P:	--
K:	119.29
S:	9.71
%K:	2.95
%Mg:	13.57
%Ca:	50.75
%H:	37.5
Zn:	4.45
Mn:	--
B:	--

Objective:

Commodity prices greatly influence a growers buying decisions. The higher their potential income the more they are willing to spend up front. Specifically looking at the fertility components for corn, it has been found growers are comfortable spending between 18-22% of their anticipated income on crop nutrition. This trial was established to see yield impact on spending more when corn prices are high and what that return on fertilizer investment would be. Based on 250 bu/A corn yield goal we sent potential fall corn prices of \$4, \$6, and \$8 per bushel. Using 20% of the potential crop income that gave a fertilizer budget of \$200, \$300 and \$400 per acre. As more money was added to the program, fertilizer rates were increased and additional in-season applications were added. Harvest yields were used the calculated final ROI diving crop value by fertilizer program cost. Yield and economics appear on the table below.

Treatment Number	Yield Summary		Economic Summary				
	Yield: (bu/A)	moisture (%)	Treatment (\$/A)	Crop Value (\$/A)	Crop - Trt\$	Fertilizer ROI	Crop Value \$/unit
\$4 corn	267.3	15.7	\$199.29	\$1,069.20	\$869.91	5.4	\$4.00
\$6 corn	281.0	14.8	\$299.74	\$1,686.24	\$1,386.50	5.6	\$6.00
\$8 corn	274.0	14.6	\$398.82	\$2,192.35	\$1,793.53	5.5	\$8.00

Conclusions:

- All yields exceeded the 250 bu/A yield goal, however highest yield was seed with the \$6/bu corn price and budget. Therefore the additional fertilizer and rates did not provide any yield benefit.
- Fertilizer return on investment was similar for all treatments, ranging from 5.4 to 5.6. This verifies that by spending 20% of the anticipated income you get yield to offset that expense. However, seeing yield was slightly lower with the \$8/bu corn and budget some profit was lost.