

# Soil Fertility Updates

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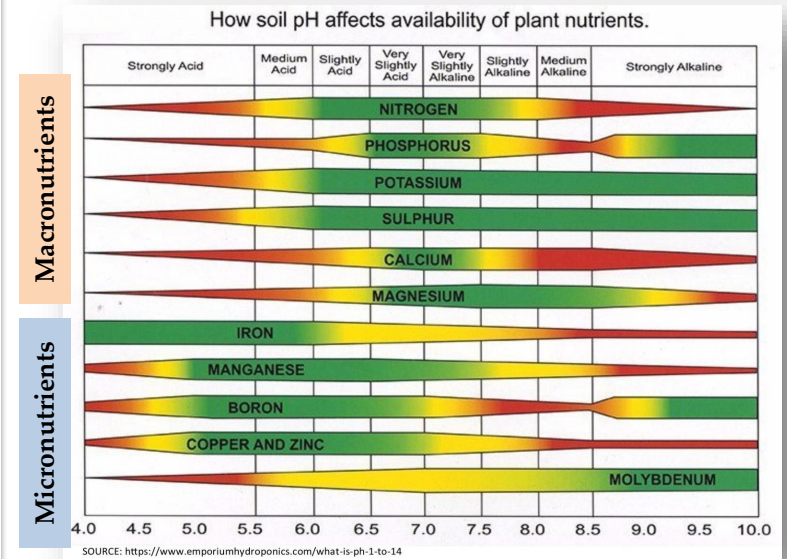
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2026 Cotton Focus  
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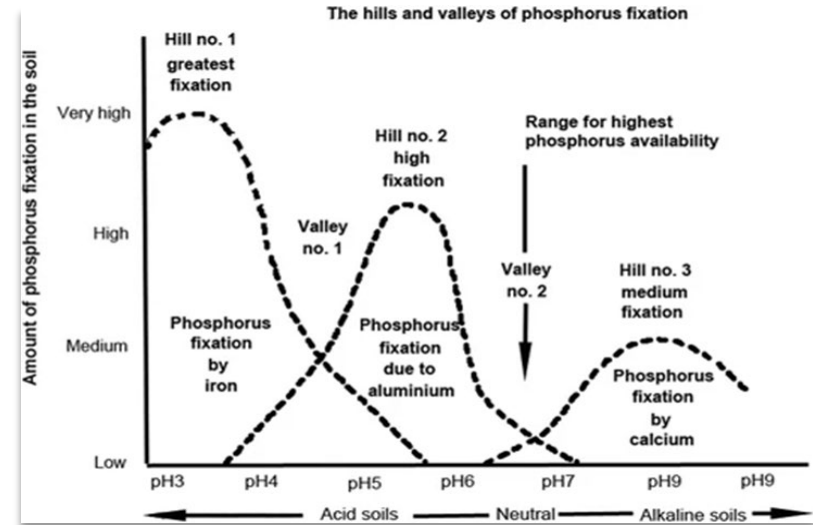
# Soil pH

- ❖ The availability of nutrient in soil is greatly affected by **soil pH**
  - ✓ *At pH of 7 and above, the availability of most micronutrient decreases except Mo*
  - ✓ *At pH of 6 and below, the availability of macronutrient increases*
- ❖ The optimal soil pH for most row crops falls between **5.8 - 7.5**



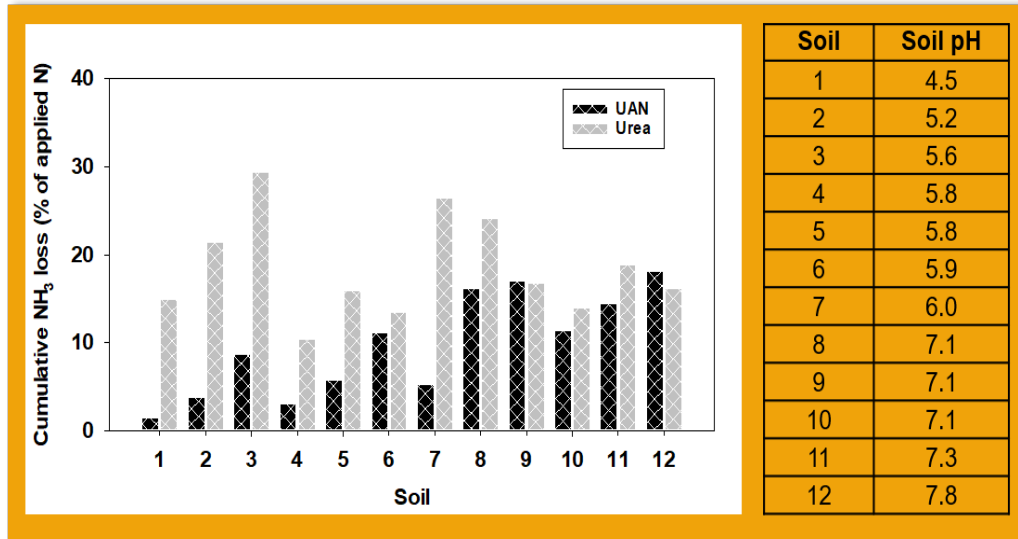
# Soil pH and P availability for plants

- ❖ The chart shows three major peaks/hill of P fixation:
  - iron-related fixation in very *acidic soil*,
  - aluminum-related fixation in *moderately acidic soils*
  - calcium-related fixation in *alkaline soils*
- ❖ A soil pH between 6.0 and 7.5 is essential for maximizing the efficiency of phosphorus fertilizer



*There is no quick fix for soil pH especially for no till soils. If possible avoid lime products that promise quick fix. Apply P close to planting or soon after emergence or banding*

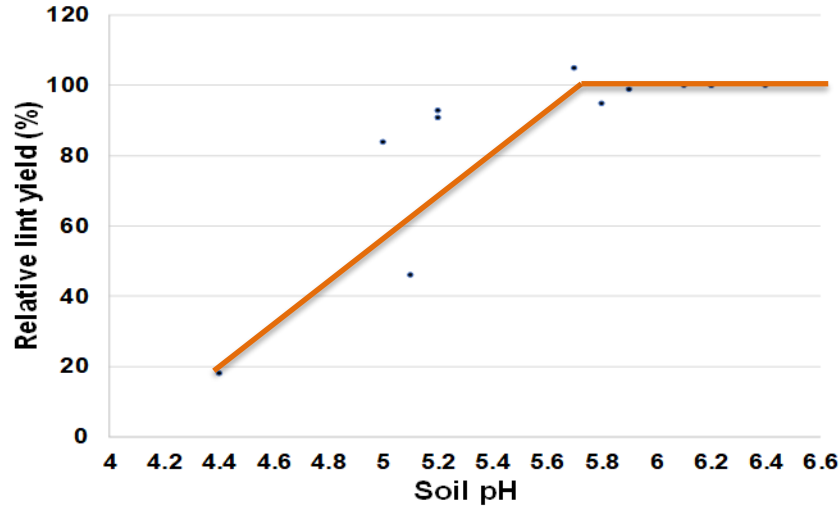
# Soil pH and N loss



UAN is susceptible to ammonia volatilization when applied to soils with an initial pH greater than 7, and losses become even *greater when soil pH exceeds 7.5.*

*Treat UAN with a proven N stabilizer (excluded injection-based placement). If possible, avoid products that only act like stabilizers but don't deliver the same results*

# Soil pH and Liming



Soil pH below 5.8  
can cause  
significant yield  
loss, and losses  
may range from  
**5% - 80%**

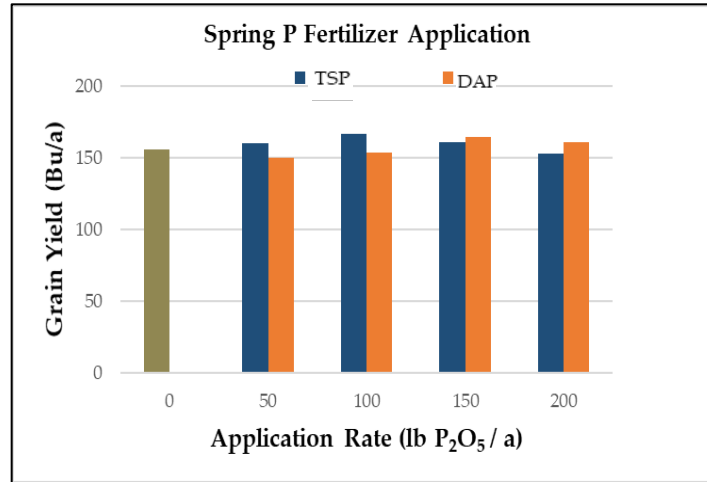
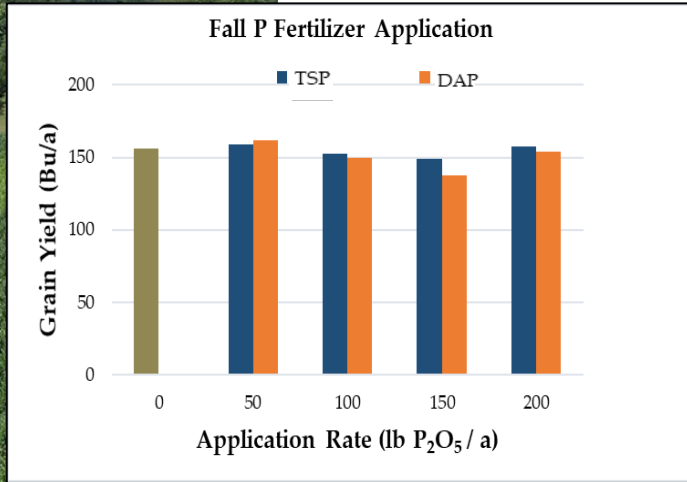
# Phosphorus fertilizer sources, composition, & prices

<b>P<sub>2</sub>O<sub>5</sub> source</b>	<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>Price</b>
Monoammonium Phosphate <b>11-52-0</b>	10-12%	48-61%	\$879/ton
Diammonium Phosphate <b>18-46-0</b>	18%	46%	\$851/ton
Polyphosphate <b>10-34-0</b>	10-11%	34-37%	\$665/ton
Triple Superphosphate <b>0-45-0</b>	0%	45-46%	\$529/ton

<https://www.dtnpf.com/agriculture/web/ag/crops/article/2026/02/18/eight-major-fertilizers-see-prices>

[https://ycharts.com/indicators/triple\\_superphosphate\\_price](https://ycharts.com/indicators/triple_superphosphate_price)

# Phosphorus source considerations - *corn*



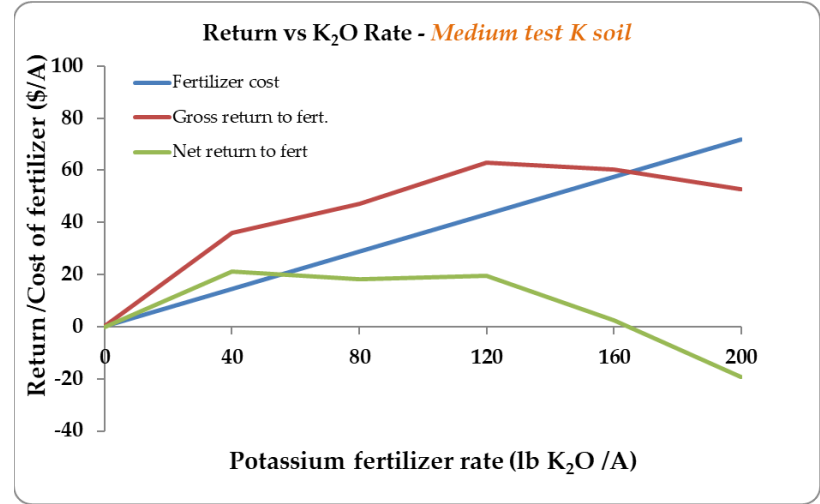
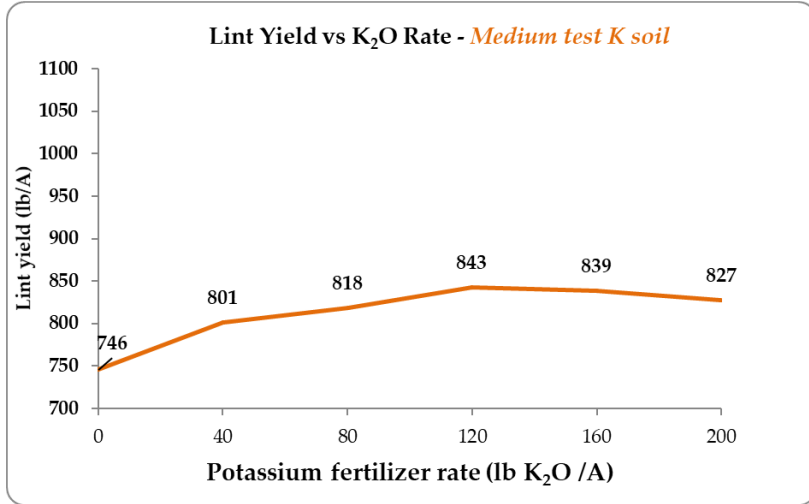
Extra N does not always translate to extra yield benefits over TSP in either spring or fall applications

# Phosphorus (P) and potassium (K) rate considerations

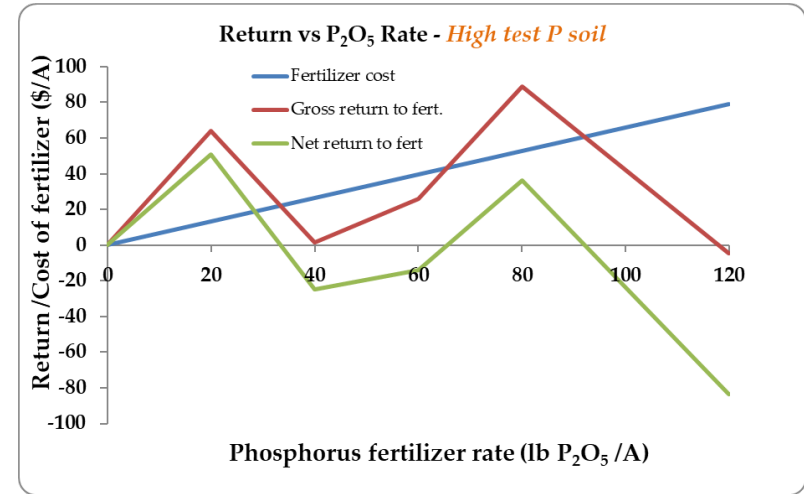
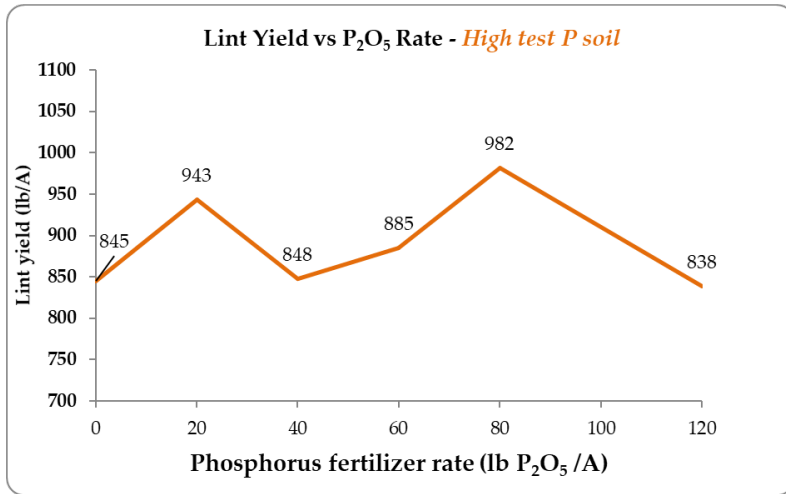
- ❑ P and K fertilizer recommendations should be based on soil test (L, M, H, VH)
- ❑ Apply fertilizer on low and medium test K or P soils
- ❑ Soils testing high or very high in P or K, additional P or K fertilizer rarely provides an economic return

Rankings	Soil test P (lb P a <sup>-1</sup> )			Application rates (lbs. P <sub>2</sub> O <sub>5</sub> a <sup>-1</sup> )	Soil test K (lb K a <sup>-1</sup> )		Application rates (lbs. K <sub>2</sub> O a <sup>-1</sup> )
	M-I	M-III			M-I	M-III	
		pH < 6	pH ≥ 6				
Low	0 – 18	0 – 35	0 – 27	90	0 – 140	0 – 241	120
Medium	19 – 30	36 – 59	28 – 46	60	141 – 280	242 – 455	90
High	31 – 119	60 – 234	47 - 181	0	281 – 319	456 – 515	0
Very High	≥ 120	≥ 235	≥ 182	0	≥ 320	≥ 516	0

# Potassium (K) rate considerations



# Phosphorus (P) rate considerations

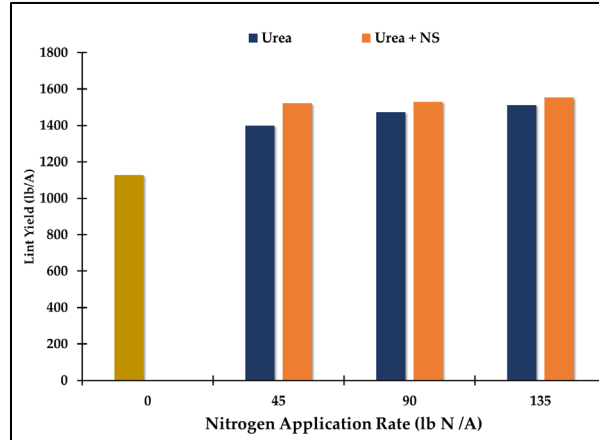
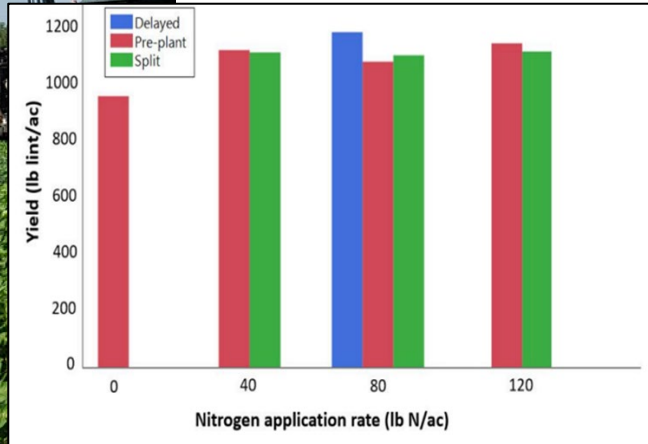


# Nitrogen fertilizer sources, composition, & prices

N source	N	Price
Urea <b>46-0-0</b>	46%	\$601/ton
Anhydrous ammonia <b>82-0-0</b>	82%	\$861/ton
UAN 28 <b>28-0-0</b>	28%	\$411/ton
UAN 32 <b>32-0-0</b>	32%	\$465/ton

<https://www.dtnpf.com/agriculture/web/ag/crops/article/2026/02/18/eight-major-fertilizers-see-prices>

# Nitrogen rate considerations

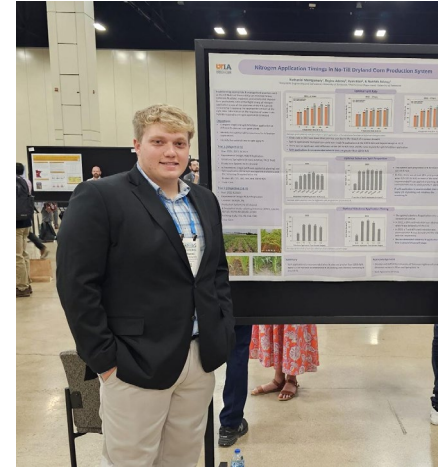


Apply a single nitrogen dose of 60–90 lb N per acre at the square growth stage.

# Acknowledgements



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## CONTACT INFORMATION

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