

Early season fertility

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Corn operational costs

Corn production costs and returns per planted acre, excluding Government payments, 2014-2015 1/

Item	United States		Southern Seaboard		% of operational costs
	2014	2015	2014	2015	
Gross value of production					
Primary product: Corn grain	601.80	611.22	563.42	555.99	
Secondary product: Corn silage	1.38	1.34	0.00	0.00	
Total, gross value of production	603.18	612.56	563.42	555.99	
Operating costs:					
Seed	101.04	101.62	82.97	83.56	22%
Fertilizer 2/	149.23	137.33	182.92	168.64	46%
Chemicals	29.20	27.95	39.22	37.54	10%
Custom operations 3/	18.24	19.04	19.72	20.57	5%
Fuel, lube, and electricity	32.80	21.28	42.30	26.61	9%
Repairs	26.17	26.18	28.45	28.40	7%
Purchased irrigation water	0.12	0.12	0.00	0.00	0%
Interest on operating capital	0.12	0.28	0.13	0.31	0%
Total, operating costs	356.92	333.80	395.71	365.63	100%

Cotton operational costs

Cotton production costs and returns per planted acre, excluding Government payments, 2014-2015 1/

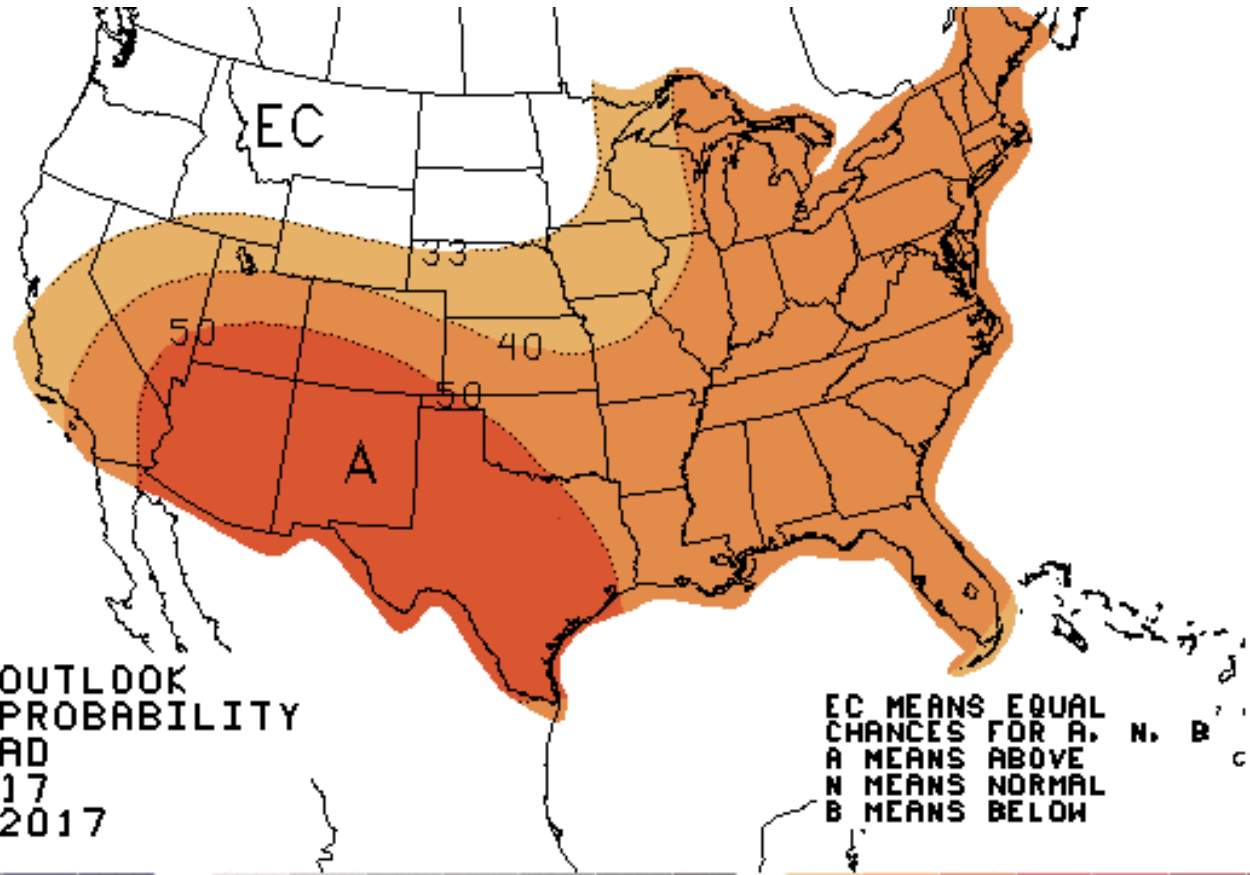
Item	United States		Southern Seaboard		% of operating costs
	2014	2015	2014	2015	
Gross value of production:					
Primary product: Cotton	465.80	432.49	609.03	514.71	
Secondary product: Cottonseed	99.72	126.17	132.30	132.20	
Total, gross value of production	565.52	558.66	741.33	646.91	
Operating costs:					
Seed	100.82	102.08	116.15	118.21	19%
Fertilizer 2/	93.22	86.32	149.37	137.71	24%
Chemicals	71.32	67.91	97.92	93.72	16%
Custom operations	24.49	25.43	25.82	26.94	4%
Fuel, lube, and electricity	64.01	41.72	54.00	34.39	7%
Repairs	37.60	37.38	38.04	37.97	6%
Ginning	121.83	131.95	140.81	131.55	23%
Purchased irrigation water	3.31	3.45	0.00	0.00	0%
Interest on operating inputs	0.16	0.42	0.20	0.49	0%
Total, operating costs	516.76	496.66	622.31	580.98	100%

Peanut operational costs

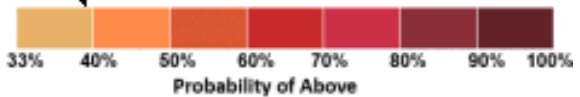
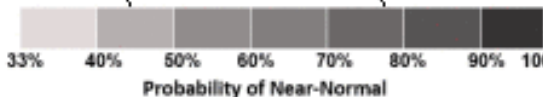
Peanut production costs and returns per planted acre, excluding Government payments, 2014-2015 1/

Item	United States		AL, GA		% of operational costs
	2014	2015	2014	2015	
dollars per planted acre					
Gross value of production:					
Primary product: Peanuts	772.16	679.49	735.66	803.70	
Secondary product: Peanut hay	18.01	16.99	16.58	17.42	
Total, gross value of production	790.17	696.48	752.24	821.12	
Operating costs:					
Seed	116.60	117.43	114.43	115.24	23%
Fertilizer 2/	97.07	90.19	76.42	71.00	15%
Chemicals	137.66	132.27	142.53	136.95	28%
Custom operations	15.70	16.06	13.08	13.38	3%
Fuel, lube, and electricity	71.18	46.17	57.68	37.41	9%
Repairs	54.66	54.71	53.87	53.92	11%
Purchased irrigation water and hay baling	0.67	0.70	0.80	0.83	0%
Commercial drying	72.18	46.00	73.87	52.34	12%
Interest on operating inputs	0.17	0.43	0.16	0.41	0%
Total, operating costs	565.89	503.96	532.84	481.48	100%

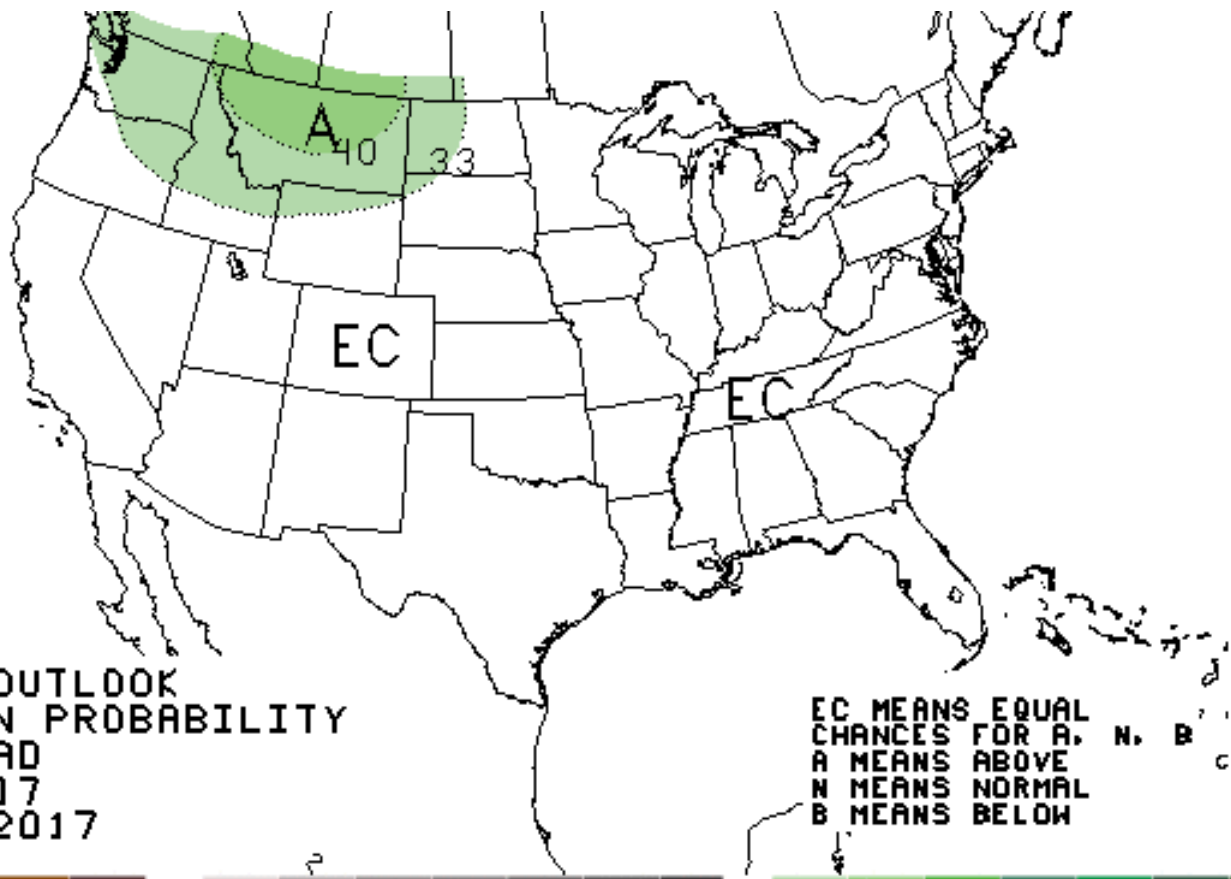
Temp probability, 3-mo outlook



THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
1.5 MONTH LEAD
VALID AMJ 2017
MADE 16 FEB 2017

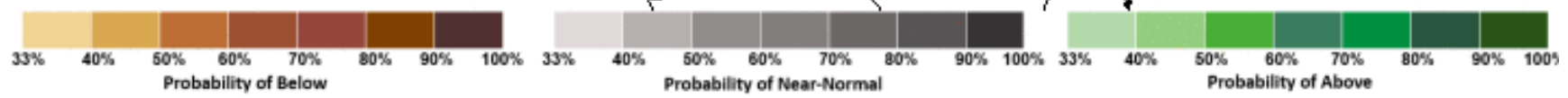


Precip. probability, 3-mo outlook



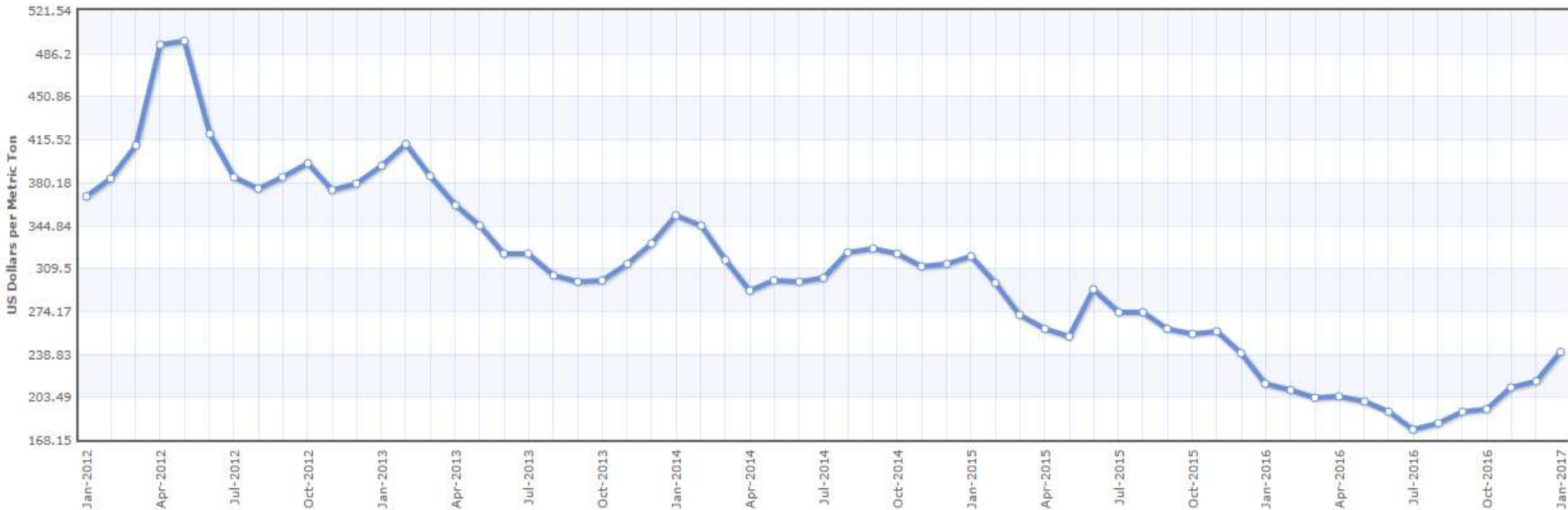
THREE-MONTH OUTLOOK
 PRECIPITATION PROBABILITY
 1.5 MONTH LEAD
 VALID AMJ 2017
 MADE 16 FEB 2017

EC MEANS EQUAL
 CHANCES FOR A, N, B
 A MEANS ABOVE
 N MEANS NORMAL
 B MEANS BELOW



Urea prices

- Granular urea (46-0-0): \$370/ton (\$403-540 in Jay)
- Liquid 28-0-0-5: \$228-270/ton
- Coming back from historic lows

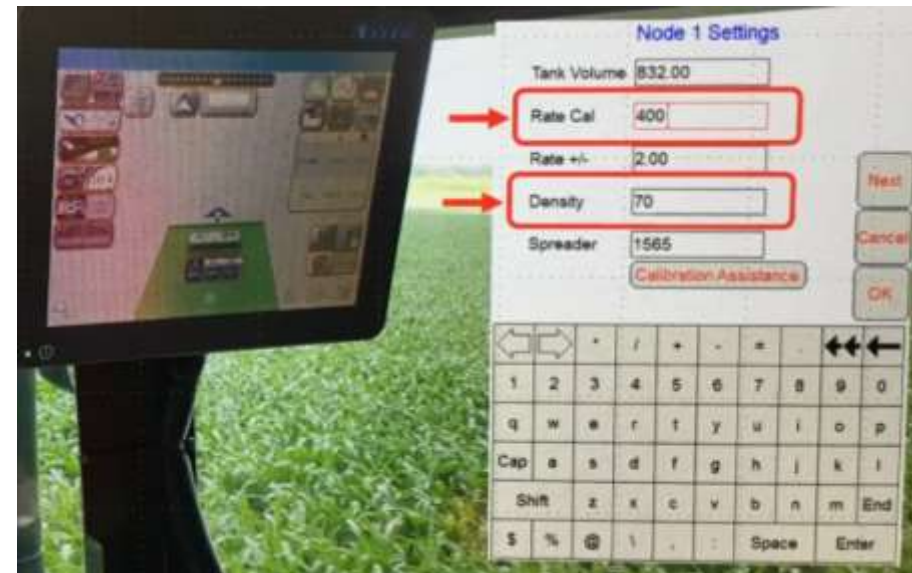
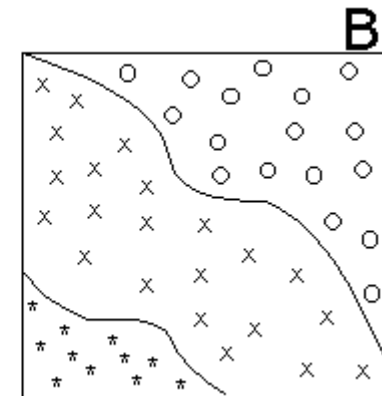
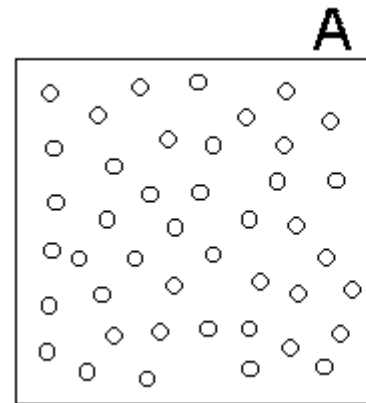


The best ways to lose urea N

- Surface apply during warm, windy conditions
- Don't incorporate (tillage, rain, or irrigation)
- Leave on a damp soil surface to dissolve but not incorporate
- Surface apply just before a light shower (tenths of an inch)

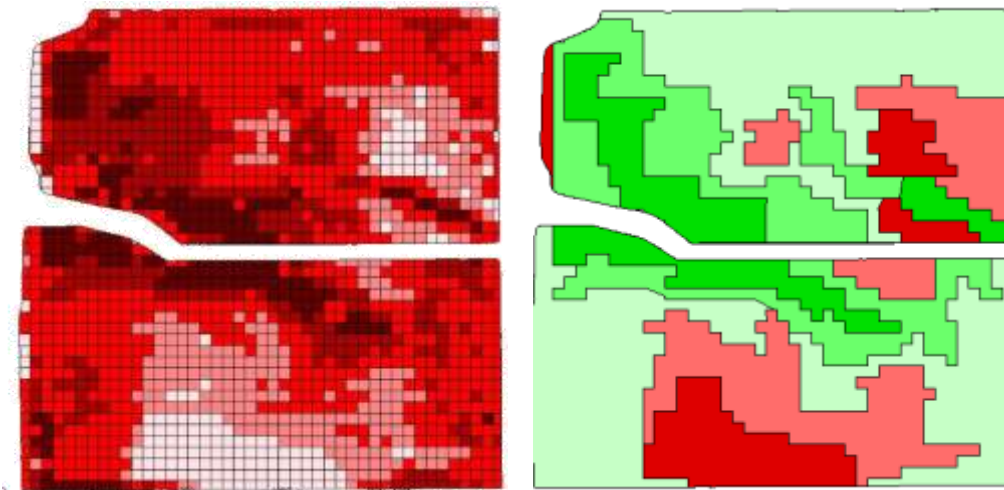
Management zones

- Soil sample within management zones
- Variable fields need more samples

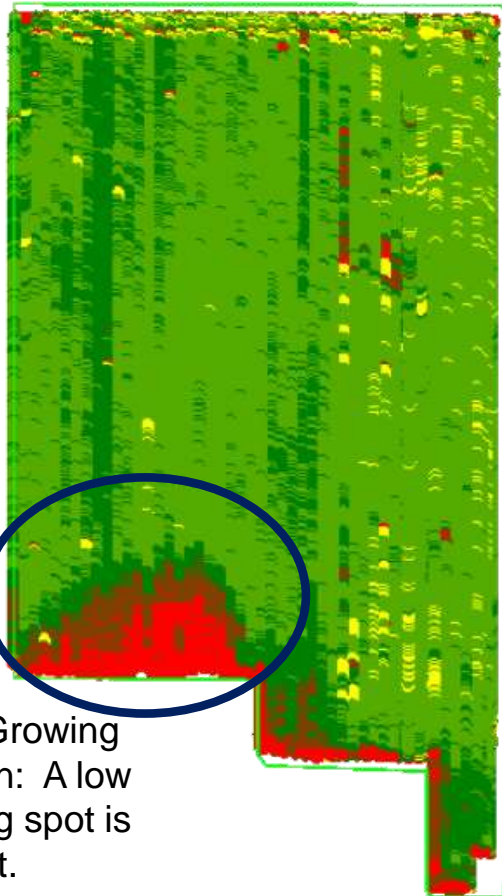


Zoning strategy

- Grid sampling
- Zone mapping (EC)
- Yield maps from previous years



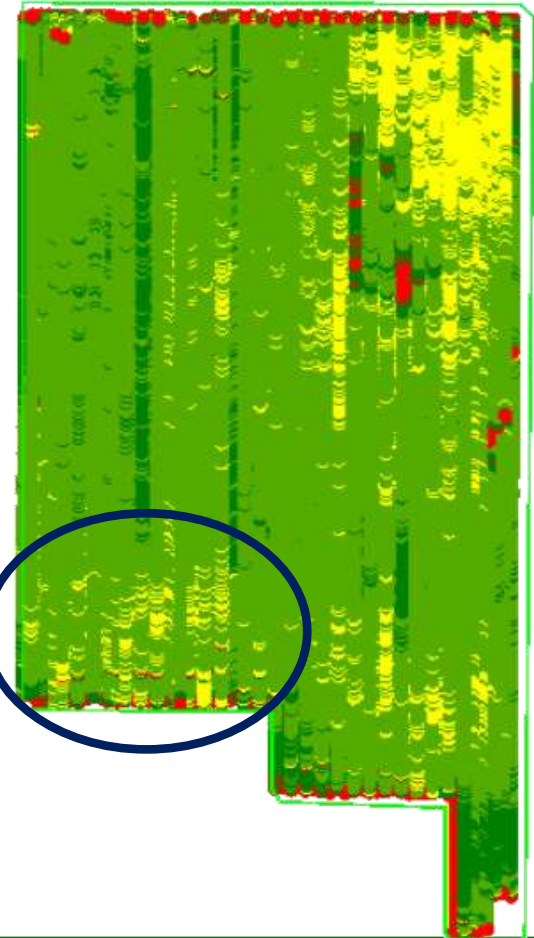
Yield maps to delineate zones



2008 Growing Season: A low yielding spot is evident.



2009 Growing Season: The low yielding spot was corrected using yield monitor data and is yielding as high as or higher than the rest of the field.



Lint Yield		
■	42.45 - 473.96	(1.53 ac)
■	473.96 - 905.47	(2.64 ac)
■	905.47 - 1336.97	(11.01 ac)
■	1336.97 - 1768.48	(42.69 ac)
■	1768.48 - 2199.99	(1.28 ac)

Lint Yield		
■	47.14 - 486.01	(0.61 ac)
■	486.01 - 924.89	(0.47 ac)
■	924.89 - 1363.77	(5.04 ac)
■	1363.77 - 1802.65	(47.47 ac)
■	1802.65 - 2241.53	(6.24 ac)

Florida BMP program

Step 2: Sample Analysis

For accurate fertilizer recommendations, the chemical extraction and testing procedures used by the laboratory must be correlated to plant growth and nutrient uptake. Soil samples are received by the laboratory then homogenized through grinding and/or sieving. The laboratory takes a precise amount of the mixed sample, by volume or weight and adds an extractant solution appropriate for the nutrient and the soil type being analyzed. The following are standard extraction methods used at the UF-IFAS Extension Soils Testing Laboratories (ESTL) and/or most private laboratories for different soil types in Florida:

1. Mehlich-3 extraction – Used on all mineral or organic soils over most pH levels.

Note: Before submitting soil samples to a private laboratory, it is important to know what extraction procedures will be used, as the soil testing BMP in this manual requires the standardized procedures used by the ESTLs. Also note that the ESTLs do not offer a soil test for N because there is no reliable test for plant-available N under Florida conditions. Nitrogen recommendations are based on crop nutrient requirements based on extensive research. More information regarding the procedures used at the UF-IFAS ESTL in Gainesville can be found in the extension publication, Circular 1248, at: <http://edis.ifas.ufl.edu/ss312>.

Soil test recommendations by lab and extractant

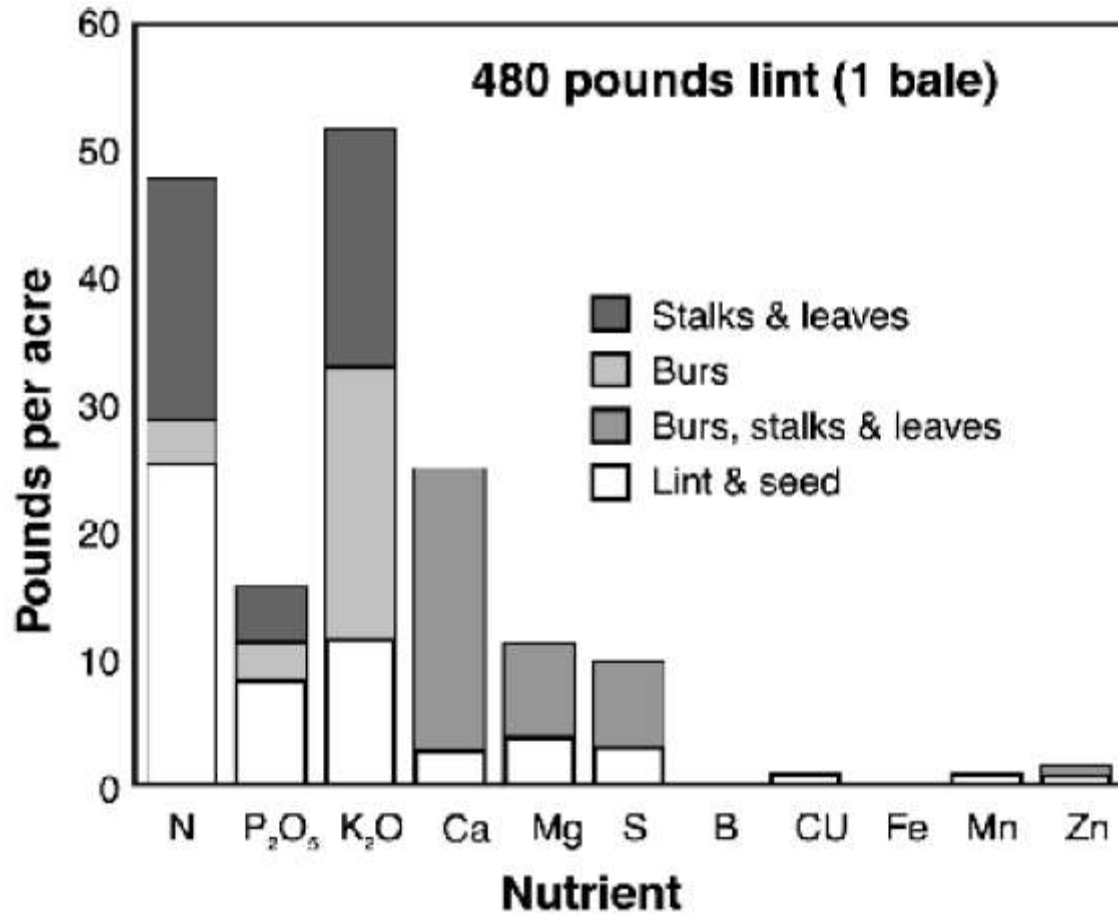
Lab & Extr.	Crop rec.	Lime tons/ac	Gypsum tons/ac	N lbs/ac	P lbs/ac	K lbs/ac	Mg lbs/ac	S lbs/ac	B lbs/ac	Zn lbs/ac	Mn lbs/ac	Cu lbs/ac
Waters (M1)	Corn (200 bu/ac)	1.0	-	280	60	230	35	23	1	5	10	-
UGA (M1)	Corn (200 bu/ac)	1.25	-	240	0	140	-	10	0	0	0	-
Waypoint (M3)	Corn (200 bu/ac)	0.5	-	183	0	125	17	11	1.5	0	2	0
UFL (M3)	Corn (200 bu/ac)	0.8	-	210	0	70	20	15-20	-	-	-	-
Waters (M1)	Cotton (2 bales/ac)	1	-	90	40	120	25	18	0.7	-	10	-
UGA (M1)	Cotton (2 bales/ac)	0.5	-	60	0	60	-	10	0.5	0	0	-
Waypoint (M3)	Cotton (2 bales/ac)	0.5	-	100	0	104	17	11	1.5	0	2	0
UFL (M3)	Cotton (2 bales/ac)	0.5	-	60 90	0	70	20	-	-	-	-	-
Waters (M1)	Peanut (2 tons/ac)	1	0.5	20	40	80	15	8	0.7	-	5	-
UGA (M1)	Peanut (2 tons/ac)	0.5-1.25	-	0	0	0	-	0	0.5	-	0	-
Waypoint (M3)	Peanut (2 tons/ac)	0.5	0.5	0	0	97	17	16	1	0	0	0
UFL (M3)	Peanut (2 tons/ac)	0	0.4	0	0	40	20	-	0.5	-	-	-

- 60 lbs N/ac on cotton is now 90 lbs N/ac!
- If you need more fertility, document the reason.

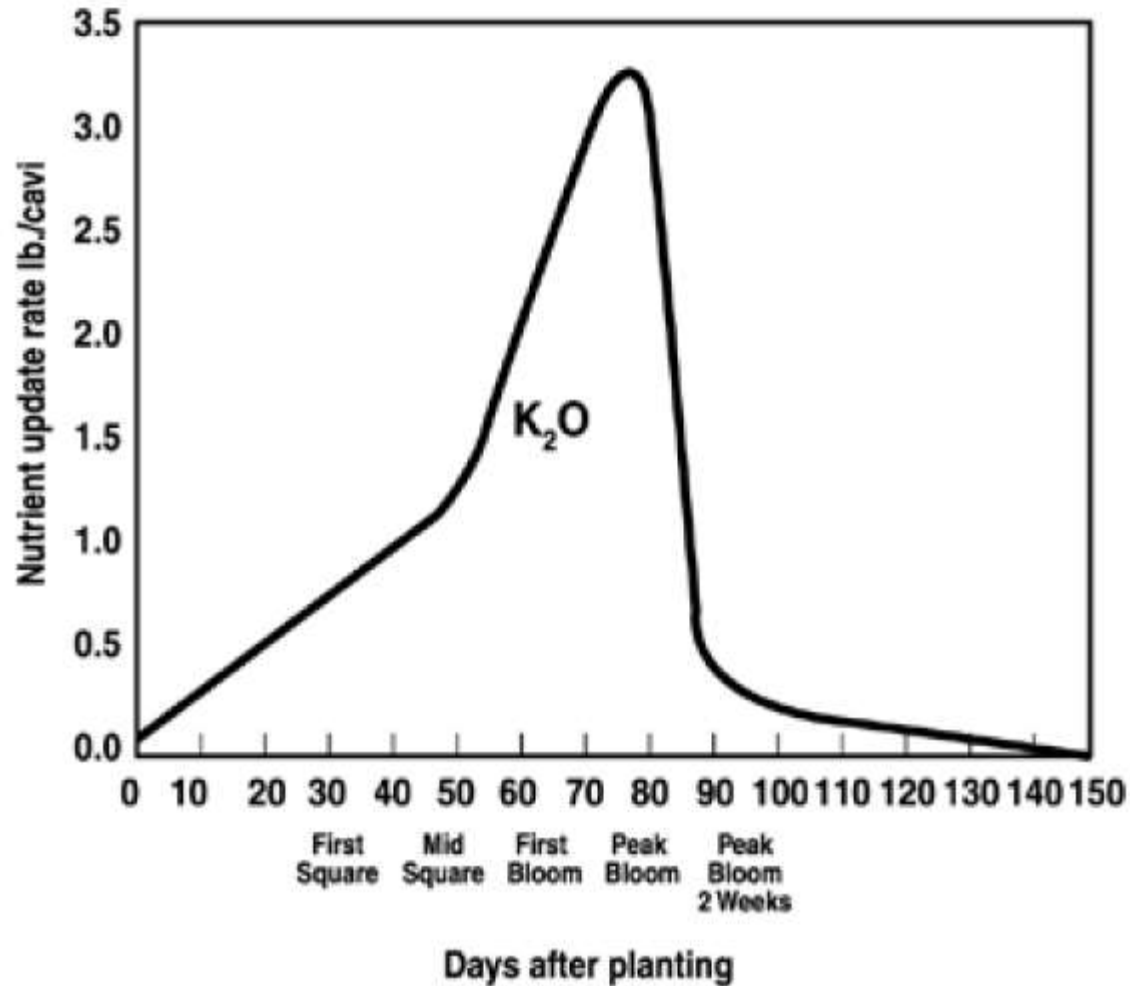
At-plant fertilizer

- “Starter” is banded near the row, typically 2x2”
 - May be able to reduce rates by 25-30% compared to broadcast
 - More responsive on sandy soils
- “Pop-up” is in row with the seed.
 - Use caution! Not recommended.
 - Do not exceed salt index of 5.
 - Do not use ammonium or urea fertilizers
 - Ammonium is toxic to seedlings.

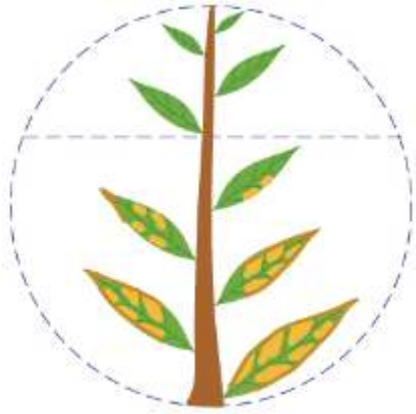
Cotton nutrient removal



Cotton K demand



K deficiency



Credit: Bobby Golden, MSU



Credit: IPNI Crop Nutrient Deficiency Image Collection, C.R. Crozier

Cotton fertility

- FL BMPs now allow 90 lbs N/ac
- Low uptake for 40-60 days
- Sensitive to N, K, S deficiency
- Split 1/3 K at plant, 2/3 K at square to early bloom
- S generally needed when clay is <12" deep

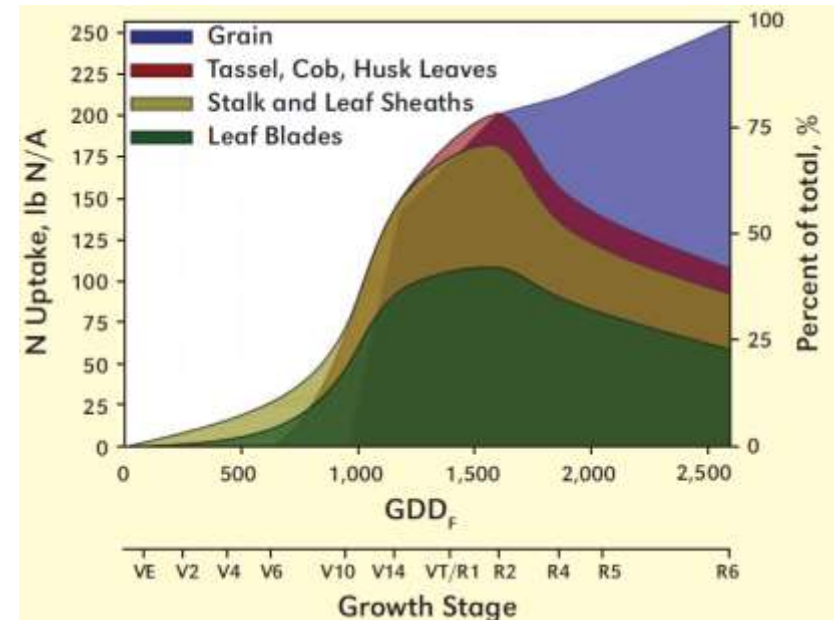
Previous Crop	Soil Type			
	Clay 12" deep or more		Clay 8-12" deep	
	Starter	Sidedress	Starter	Sidedress
	lbs N/A			
Cotton	20	90-120	20	60-90
Peanuts or Soybeans	10-20	80-100	0	60-70
*Double Crop with Wheat	10-20	80-100	10-20	60-70

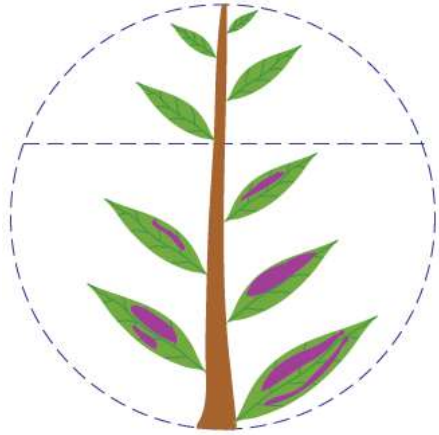
Peanut fertility

- Gypsum at pegging, of course
- pH >6.0 for good nodulation – Lime in Fall
 - Target 6.2-6.5
- Excellent nutrient scavenger
- B can be applied foliar with fungicides
 - 0.5-0.75 lbs B/ac

Corn fertility

- Split N applications:
 - 20-25% at planting, remainder sidedress at V6
 - Consider applying more N if >2" rain on sand
 - Yield won't increase after tassel
 - But grain N will
- Split K on deep sand
- 2x2" starter N + P





P deficiency



Take home

1. Buy urea now.
2. Incorporate urea with tillage, rain, or irrigation.
3. If in the BMP program, make sure you use the Mehlich 3 extractant.
4. You may use 90 lbs N/ac on cotton w/o documentation.
5. If you need more nutrients, just document why.

Questions?

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