



For The Soil | For The Plant | For the Future

# Cotton

# Managing Cotton Growth

- **Goal: Provide everything the plant needs without excess**
- “Think Like a Cotton Plant”
  - Cotton is a perennial crop. Unlike annual crops, its first priority is to **survive**, itself.
    - Too much resources (water, fertilizer), it will attempt to grow into a tree and put off fruiting until later. (“High cotton is a misnomer.”)
    - Too little resources, it will abort reproduction and conserve energy for itself. (Remember, it expects to live until next year)

# Managing Cotton Growth

- “Think Like a Cotton Plant”
  - Cotton’s second priority is **seed production**.
    - Reproductive growth begins when there is adequate (but not luxurious):
      - Water
      - Fertility
      - Heat
      - Sunlight
    - At or just after flowering, plant reassesses resources and “decides” whether to keep or abort that fruiting position.
    - Maintaining adequate resources throughout boll-fill ensures good seed quality and viability

# Managing Cotton Growth

- “Think Like a Cotton Plant”
  - Cotton’s last priority is **lint production**.
    - Lint was used in the wild ancestors of cotton to disperse seed.
    - Lint quality (length, uniformity, strength, etc) is of little concern to the plant. In its “mind”, a little fuzz around the seed will do.
    - These qualities are the first sacrificed in a stress event during boll-fill.
- **Cotton plant first, seed second, lint last!!**

# Managing Cotton Growth

- Ways to manage balance in vegetative and reproductive growth:
  - Utilize slow-release fertility products
  - Spoon-feed fertilizer
  - Manage irrigation
  - Quick response with growth regulator (mepiquat) after heavy rain event or excessive fertilizer application

# Fertility in Cotton

- Nitrogen
  - Excess – Leads to excessive vegetative growth, reduced early boll retention and delayed boll opening
  - Deficiency – reduced leaf area and limits number of bolls the plant can fill
- Solution:
  - Use High NRG N or spoon feed UAN+eNhance in multiple apps to limit loss factors and avoid luxury consumption.
  - NResponse can be used as a foliar to boost N levels in season or rescue N deficiencies



# Fertility in Cotton

- Phosphorus
  - Needed close to the small root zone
  - Needed early in the season mainly due to cold soil temps
  - Essential for seed production and in turn lint production
- Solution:
  - Utilize Pro-Germinator for its ability to be safely placed close to the row for season-long phosphate feeding

*Pro*-Germinator®

# Fertility in Cotton

- Potassium
  - Need dramatically rises when plant is producing and filling bolls
  - Needed for maintaining water pressure inside cells to promote fiber elongation
  - Excellent responses to foliar potassium
- Solution:
  - Utilize Kalibrate for planter and sidedress applications and Sure-K for foliar apps to maintain potassium levels throughout the season

**Kalibrate**™  
Precision Potassium

**Sure-K**®



# Fertility in Cotton

- Calcium, Magnesium, Sulfur
  - Calcium – Properly balanced in BS%, essential for staple length
  - Magnesium – Properly balanced in BS%, essential for photosynthesis
  - Sulfur – Essential for nitrogen utilization
- Solution:
  - Utilize LiberateCa for planter time and foliar apps of calcium
  - S-Calate, MicroLink Mg, AccesS can be applied with nitrogen to help with calcium, magnesium, and sulfur availability to the plant.



# Fertility in Cotton

- Micronutrients
  - Zinc – important for proper P uptake and utilization
  - Manganese & Iron – important in N utilization, photosynthesis, protein synthesis
  - Boron – important for square and boll retention and formation
- Solution:
  - Apply Micro500 at planter-time or foliar to boost micronutrient levels
  - Utilize individual MicroLink micros as needed in all application methods
  - Foliar applications of boron and manganese are popular in combination with Sure-K or Ferti-Rain



# Fertility in Cotton

- Foliar Potential in Cotton
  - Ability to apply specific nutrients during periods of high demand in season (N,K, Mn, B)
  - Cotton is very receptive to foliar applications due to leaf structure and multiple reproductive sites
  - Cotton management typically requires many trips with crop protection products
- Solution:
  - Ferti-Rain, Sure-K, NResponse, and the MicroLink line have all shown favorable results when used as foliars in cotton
  - AgroLiquid's products are generally able to mix with most crop protection products

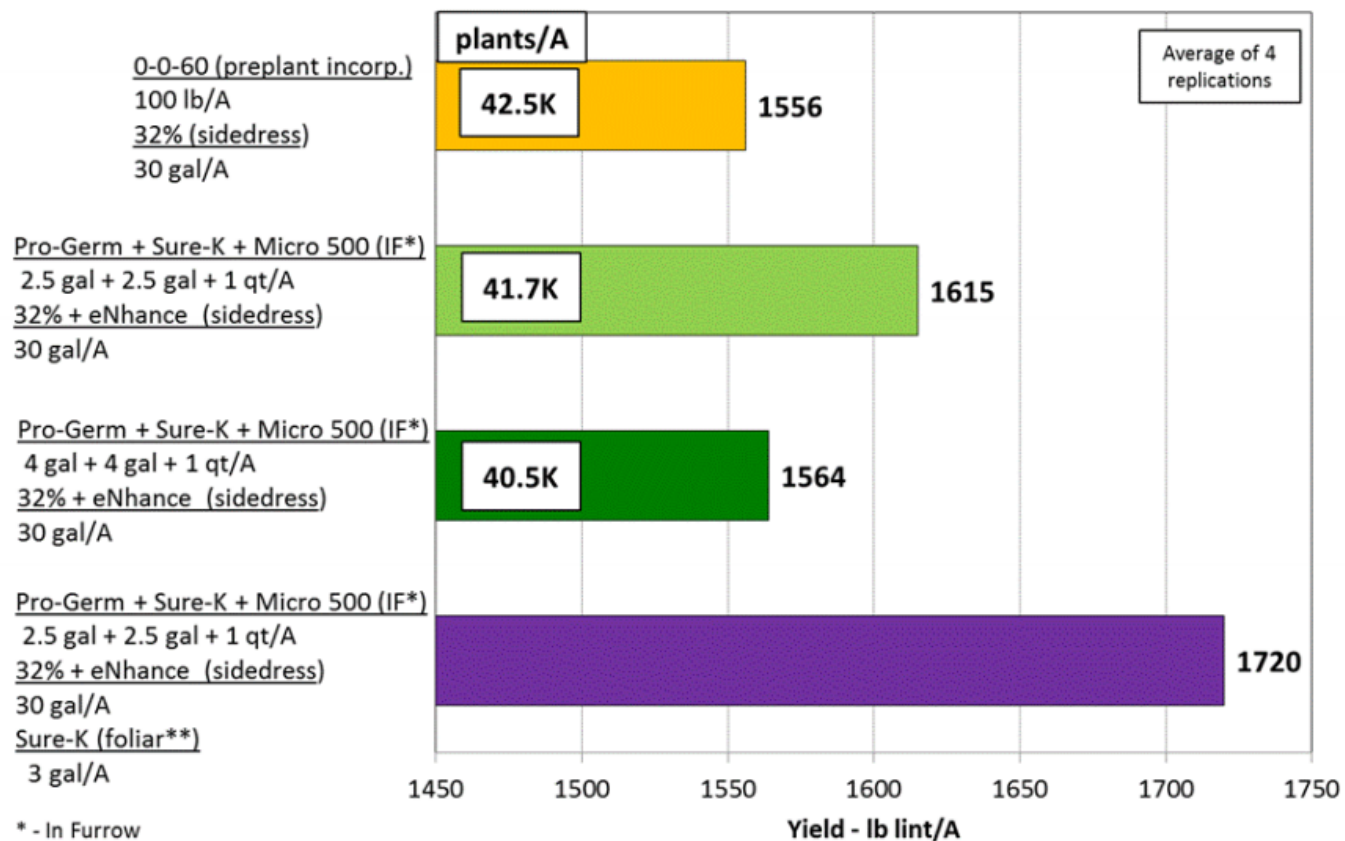


# Fertility in Cotton

- AgroLiquid Considerations
  - Max 3 gals in-furrow; try to get guys set up on 2X2 and 0X2 planters
  - Our strength is banding close to furrow and can help increase efficiency in tap root crop like cotton
  - Also use our strength with foliars in cotton (FertiRain, SureK, Micros). Timing is important here but our ability to add specific nutrition at key times is a big benefit
  - Slow release forms of nutrition reduce luxury consumption

## Effect of Fertilizers on Stand and Yield of Cotton

Impact Agronomics, Inc. Pantego, NC - 2014



\* - In Furrow

\*\* - 2 foliar applications at first square and first boll

# Sources:

- “Think Like a Cotton Plant” – Charles Stichler and Kater Hake. Physiology Today – National Cotton Council. Nov. 1991, Volume 3, Number 2