



**COTTON PLANT'S WATER & NUTRIENT REQUIREMENTS (principle applies to all multi-fruit plants)  
TRADITION VS. HIGHER YIELDS**

WATER is the key to all LIFE

- Requirement varies with stage of growth - Peak is at reproduction – highest with most bolls.
  - Needs closely parallels Nitrogen requirement – **highest at boll development.**
  - Young Plant needs very little water – stress can aid earlier fruiting rather than big stalks.
- Excess in soil profile cuts off oxygen supply resulting in less nutrient availability and uptake.
  - Lack of Oxygen reduces Iron (Fe) to an unavailable form that accumulates in plant tissue.
- Drip Irrigation in a dry profile may cause temporary stress in roots in the flooded zone.
- **Balanced Nutrients allow plants to use water more efficiently**
  - Research documents that **water can be used 3 to 10 times more efficiently** with proper food.

PLANT NUTRIENTS are needed as well as water. Nitrogen & Phosphate are the most controlling for growth and fruiting – Potash and other minerals and micronutrients are essential for quality fruit development in the proper order of physiological needs.

NITROGEN & WATER PROMOTES FAST VEGETATIVE GROWTH at expense of fruit development.

- To MAXIMIZE fruiting limit Nitrogen & Water early.
  - o High nitrogen uptake reduces P and other nutrient uptake thus reducing fruiting.
- Aid PHOSPHATE UPTAKE by supplying small amounts of P and adjuvants to aid uptake
  - o Humus products can double uptake
  - o Multi Hormones (PGR IV type) also aid uptake
  - o Soil Inoculants (beneficial soil microbes) are research proven uptake aids.
  - o Molasses (sugars) supply energy for plants and microbes to perform better.

**ASK THE PLANTS** with a regular program (crop logging) of petiole testing to tell what, when, how much!

**TRADITIONAL WAYS do not maximize the GENETIC POTENTIAL of improved Varieties!!**

**ADJUST to, amounts and plants physiological needs of plant nutrient timing what nutrient** is most needed to attain the higher genetic potentials.

**PLANTS FEED IN SMALL AMOUNTS EACH DAY ON PLANT FOODS & WATER!!!** Too Much N too early = rank stalks and little fruiting **BALANCE NUTRIENTS EARLY** especially **High Phosphate** to encourage boll set.

COTTON NEEDS **ONLY:**

10 LB/AC OF ACTUAL N  
02 lb/ac of P<sub>2</sub>O<sub>5</sub>

+20 lb/ac N to early square  
05 lb/ac P<sub>2</sub>O<sub>5</sub>

+60 lb/ac N to early bolls  
23 lb/ac P

+50 lb/ac N =more bolls  
31 lb/ac P + balanced nutrients & adjuvants

**Control insects & disease and manage water & balanced nutrients.**

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**AGE**  
0-20 DA

20-40 da

40-70 da

70-91 da

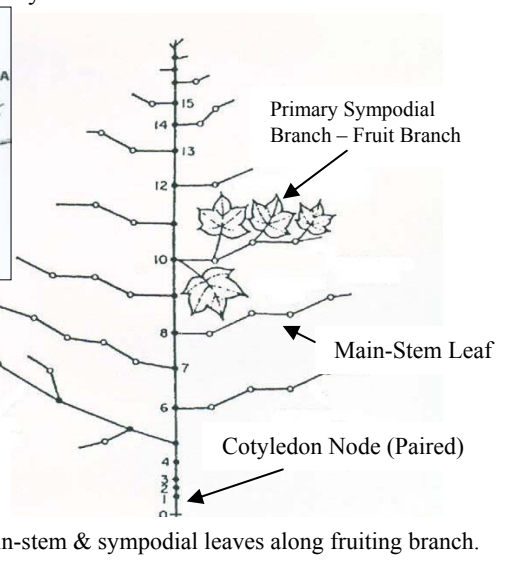
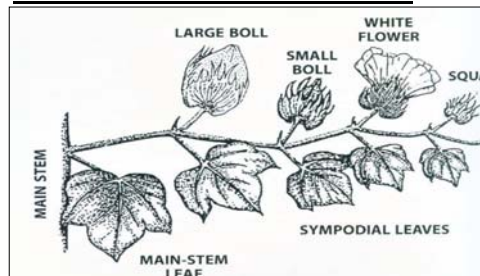
91-109 da

109-124 da

124-136 da

**LATERAL BRANCH FRUITING** is the Key

Germination and seedling Emergence.



**VITAL only the plant can tell when - what & how much nutrients are needed** - TPSL Cotton Petiole Tests NO<sub>3</sub>-P<sub>2</sub>O<sub>5</sub>+minerals & micros leads the field in crop consulting.