



# Feedback Requirement for Nitrogen Management

The utilization of a feedback approach requires a systematic approach to soil and crop monitoring. Accordingly, there are some basic requirements associated with a feedback approach per se. The following information provides an outline of a feedback approach to N management in an irrigated cotton production system.

## **Feedback Management Requirements**

- Useable/accessible measurements
- Established baselines/guidelines
- Reference base
- Common variety types (species)
- Regionally specific baselines
- Validation of recommendations

## **Estimation Total N Needs**

- Use realistic yield goal
- Use approximately 60 lbs. N/bale of lint/acre
- Subtract residual soil  $\text{NO}_3^-$ -N present in irrigation water
- Split applications in-season in approximately 40 to 70 lbs. N/acre increments

## **Crop Monitoring - N Management**

- Crop vigor estimate
- Height to node ratios (HNRs - refer to baselines)
- Fruit retention (plant mapping)
- High fruit load = high N demand
- N fertility status
- Petiole  $\text{NO}_3^-$ -N guidelines

Begin fertilizer N applications at or just prior to the first post-plant irrigation, which should occur near the time when the first squares are appearing on the plant. Proceed with additional split applications, dependant upon plant conditions, and complete fertilizer application by peak bloom.

## **Case 1**

- High fruit load (high fruit retention)
- HNR within thresholds (perhaps low)
- N input needed
- Decline on petiole  $\text{NO}_3^-$ -N levels
- Provide application of N fertilizer
- PIX™ not needed

## **Case 2**

- Low fruit load (low fruit retention)
- HNR is high (relative to guidelines)
- Hold back or reduce N fertilizer inputs
- Consider PIX™ application

## **Case 3**

- HNR is low (relative to guidelines)
- Maintain N fertilizer inputs
- PIX™ not needed
- Crop is experiencing some form of stress
- Water, N, salinity, etc.
- Limiting growth
- Identify and correct

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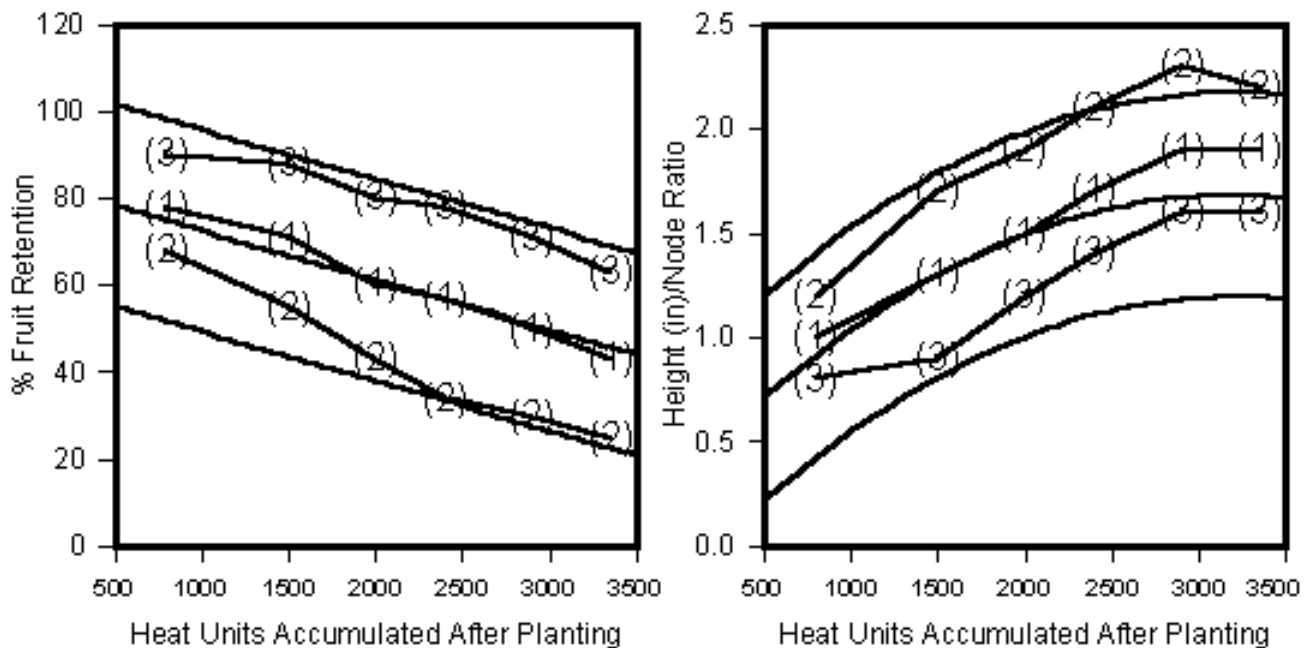
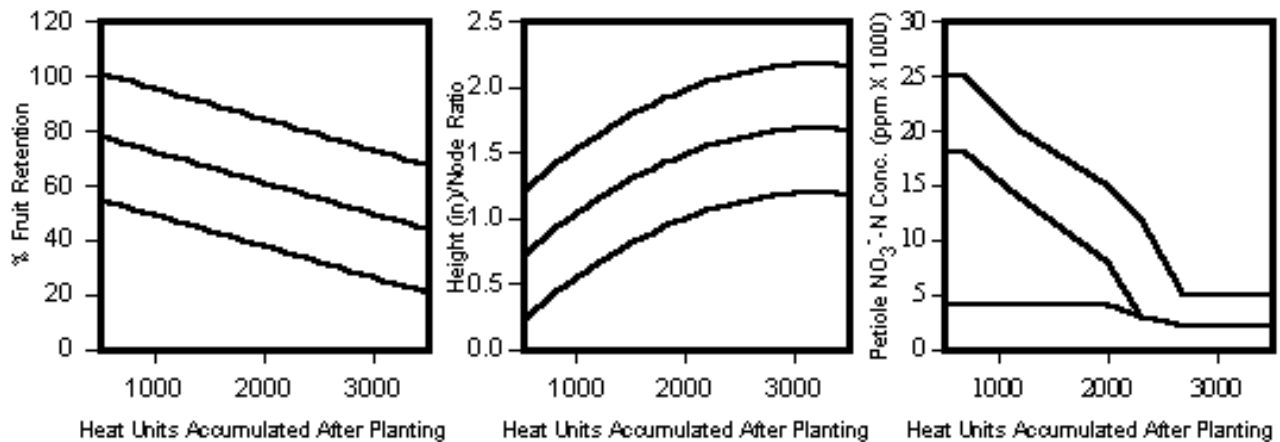
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*This information has been reviewed by university faculty.*

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