

### Crop Fertility and Drip Irrigation



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June 15, 2010

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Photo: Mark Leffler

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Feeder roots  
around emitters

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### Nitrogen

- Apply 30–40% preplant.
- Meet additional needs, as required, with drip.
- Use a total of 90–120 lb/acre for most drip-irrigated vegetables over the entire season.

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### Phosphorus



- Important for early growth
- Soil test recommendations . . . Can these be reduced?
- Preplant application only

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### Potassium



- Critical for fruit quality
- Preplant application insufficient
- Application through drip essential
- Apply with every water application

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**Sulfur**

- Many soils in NC are low.
- Soil test and apply preplant.
- Monitor with tissue sampling for additional sulfur needs.
- Consider gypsum.

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**Calcium**

- Important for blossom-end rot control
- Soil test recommendations adequate
- Consider gypsum in sandy soils
- Adequate soil water critical!

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**Boron**

- Important for potassium uptake
- Preplant application insufficient
- Additional applications as required

(Note: some vegetables don't require boron)

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### Preplant Recommendations for Drip

- Soil test.
- Apply  $P_2O_5$ , potassium, boron and lime as recommended.
- Apply 30–40% of N preplant.

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### Use Plant Analysis

- Sample latest mature, fully extended leaf.
- Sample weekly, beginning when first fruit is the size of a dime.



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### Other Considerations

- N and K levels will be  $> 4\%$  early in season.
- $K \geq 2.5\text{--}3\%$  is desirable at harvest.
- $K \leq 2\%$  produces soft fruit.
- $K \leq 1\%$  is unharvestable.

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### Tomato Fertility Recommendations

- Begin applying fertilizer when fruit is about the size of a dime.
- Apply greenhouse grade 13-0-44 at a rate of 20–25 lb/acre/wk.
- Two weeks before first harvest, increase rate to 50 lb/acre/wk.
- Once 50% of crop is harvested, begin reducing rate.

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### Other Fertility Considerations

- Calcium levels should not be a concern with drip irrigation.
- Low P<sub>2</sub>O<sub>5</sub> levels at harvest should not be a concern.
- Monitor boron levels throughout season.

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### Quality Fruit Begins with Careful Fertility

- Follow soil test.
- Use plant analysis for monitoring.
- Monitor key elements like boron and potassium.

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