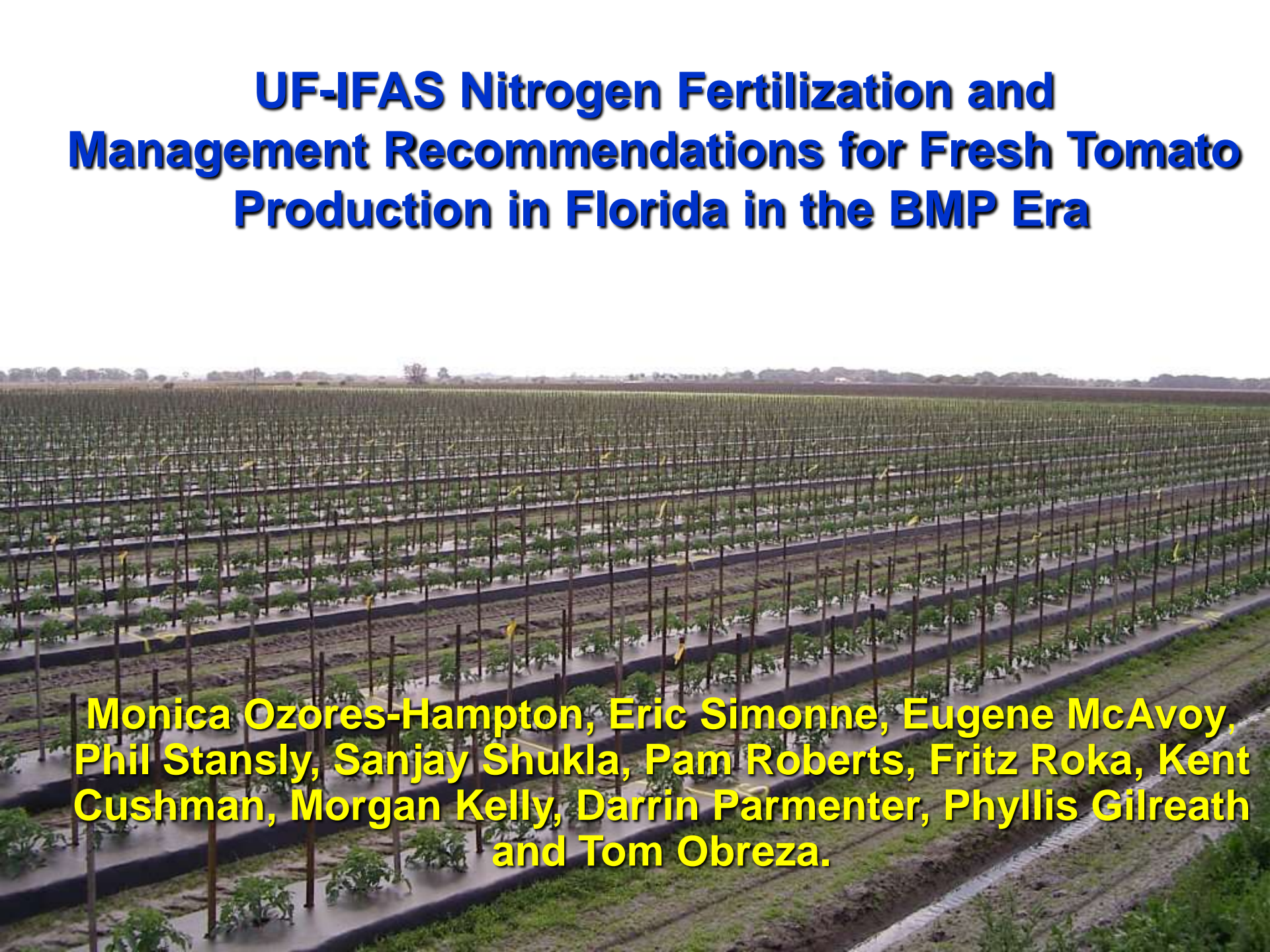


# **UF-IFAS Nitrogen Fertilization and Management Recommendations for Fresh Tomato Production in Florida in the BMP Era**



**Monica Ozores-Hampton, Eric Simonne, Eugene McAvoy, Phil Stansly, Sanjay Shukla, Pam Roberts, Fritz Roka, Kent Cushman, Morgan Kelly, Darrin Parmenter, Phyllis Gilreath and Tom Obreza.**

# Objectives

- Establish partnerships with selected southwest Florida vegetable growers to evaluate the effects of N nutrient applications under commercial growing conditions;
- Evaluate the effect of selected N application rates on plant growth, disease incidences, and production;
- Determine the optimal N rate for tomato production and evaluate the cost effectiveness of selected N application rates;
- Propose, if needed, a change in N recommendation to PNOC
- Develop an Extension plan to demonstrate the updated N recommended rate and facilitate the adoption of nutrient BMPs by the industry.

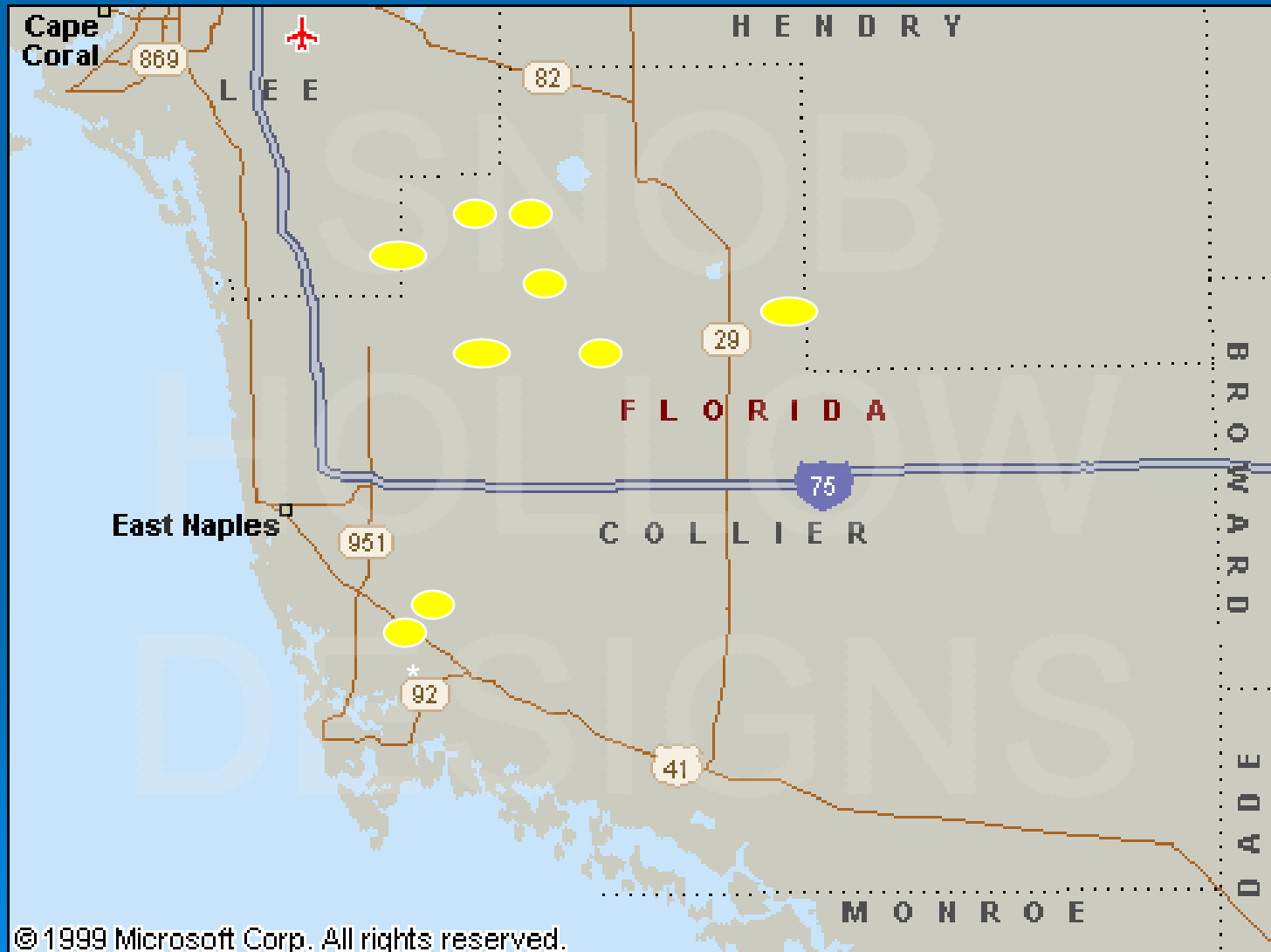


# Experiment Locations



\*

# Experiment Locations



| Trial number   | Location   | Season         | Irrigation type | N rate (lb/acre) | Exp size (acres) |
|----------------|------------|----------------|-----------------|------------------|------------------|
| <b>2006-07</b> |            |                |                 |                  |                  |
| 1              | Collier    | Fall, Aug 31   | Seepage         | 200 and 260      | 21 (CRD)         |
| 2              | Collier    | Winter, Oct 16 | Drip            | 200 and 300      | 35               |
| 3              | Collier    | Winter, Oct 17 | Seepage         | 200, 250, 200+C  | 1 (CRD)          |
| 4              | Collier    | Winter, Oct 26 | Seepage         | 200 and 320      | 3 (CRD)          |
| 5              | Collier    | Winter, Nov 15 | Seepage         | 200 and 260      | 21 (CRD)         |
| 6              | Collier    | Winter, Nov 27 | Drip            | 200 and 300      | 50               |
| 7<br>Pepper    | Palm Beach | Winter, Nov 23 | Seepage         | 200 and 300      | 5.5 (CRD)        |
| 8              | Palm Beach | Winter, Nov 21 | Seepage         | 200 and 300      | 5.5 (CRD)        |
| 9              | Palm Beach | Winter, Nov 24 | Seepage         | 200 and 300      | 5.5 (CRD)        |
| 10             | Collier    | Spring, Feb 12 | Seepage         | 200 and 260      | 18 (CRD)         |
| 11             | Manatee    | Spring, Feb 15 | Seepage         | 20 to 420        | 0.4 (CRD)        |
| 12             | Manatee    | Spring, Feb 19 | Drip            | 225 and 330      | 2 to 12          |
| 13             | Manatee    | Spring, Feb 19 | Drip            | 225 and 330      | 2 to 12          |
| 14             | Manatee    | Spring, Feb 19 | Drip            | 225 and 330      | 2 to 12          |



# Seep Experiments















2-12 plots per treatment with 3 reps  
10 plants per plot  
3 harvests







**4-12 plots per treatment**  
**10 plants per plot**  
**3 harvests**





**Weekly report to growers  
and IFAS**



**Final report to growers  
and final data set to IFAS**



# Fall Season

Aug-Oct 15



**Trial 1**  
**Seep Irrigation**  
**Fall, 2006 (August 31)**  
**21 acres**  
**200 vs 260 lb N/acre**





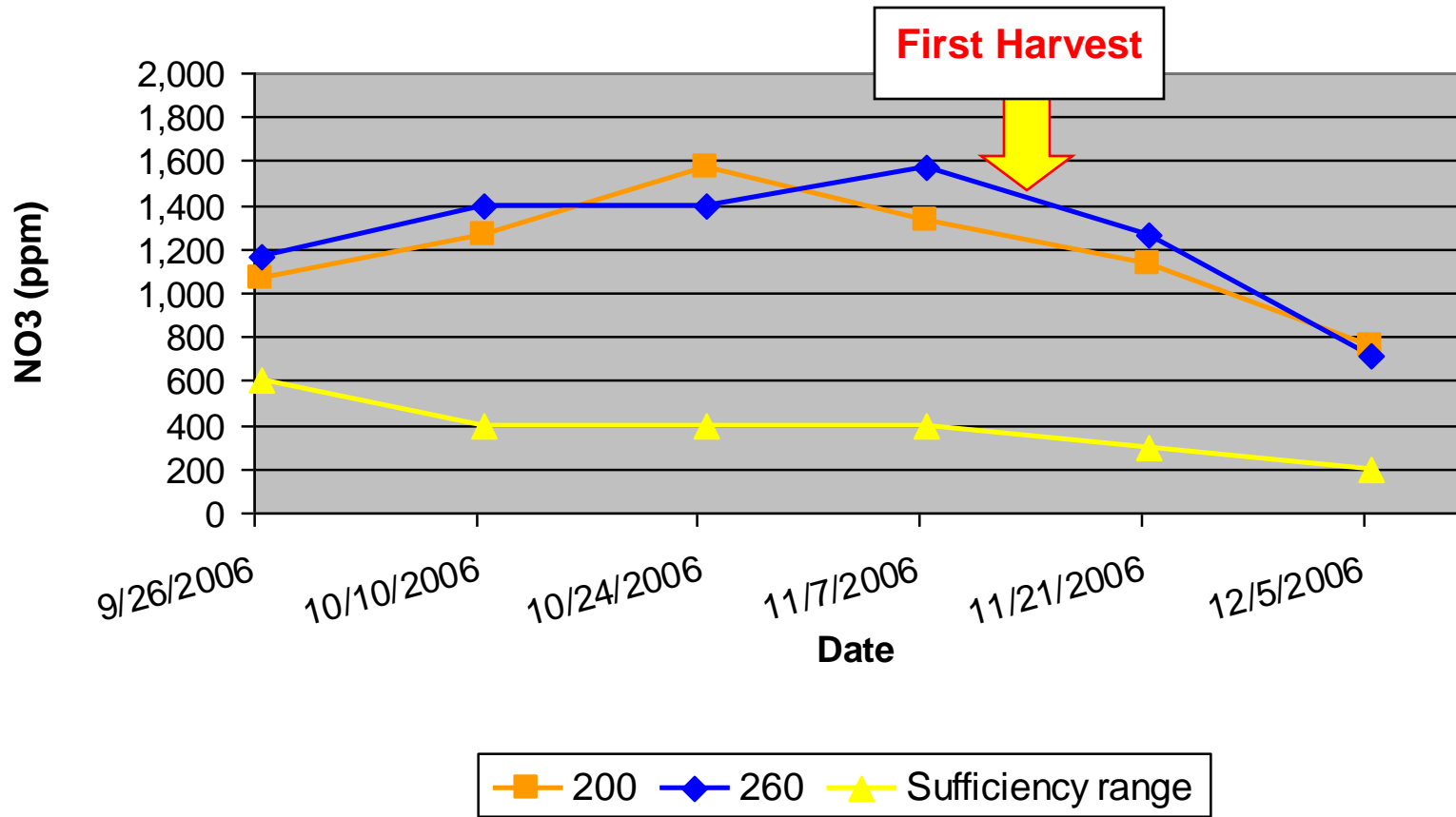
# Field History

## Trial 1

|                                |                     |
|--------------------------------|---------------------|
| <b>Experimental Design</b>     | CRD (3 Reps)        |
| <b>Plot Size</b>               | 3.4 acres           |
| <b>Experiment size</b>         | 21 acres            |
| <b>Irrigation</b>              | Seepage             |
| <b>Planting Date</b>           | Aug 31, 2006 (Fall) |
| <b>Bed wide</b>                | 32"                 |
| <b>Cell Size</b>               | 200                 |
| <b>Fumigation</b>              | M.B 150/acre (98:2) |
| <b>Linear ft per acre</b>      | 7,260               |
| <b>Plant population</b>        | 4,373               |
| <b>Bed Height</b>              | 8 in                |
| <b>Plant Spacing</b>           | 20 in               |
| <b>Row run</b>                 | North to South      |
| <b>Monitoring Wells</b>        | 6                   |
| <b>Planting to 3er Harvest</b> | 14 weeks            |
| <b>1st</b>                     | 13-Nov-06           |
| <b>2nd</b>                     | 27-Nov-06           |
| <b>3rd</b>                     | 13-Dec-06           |

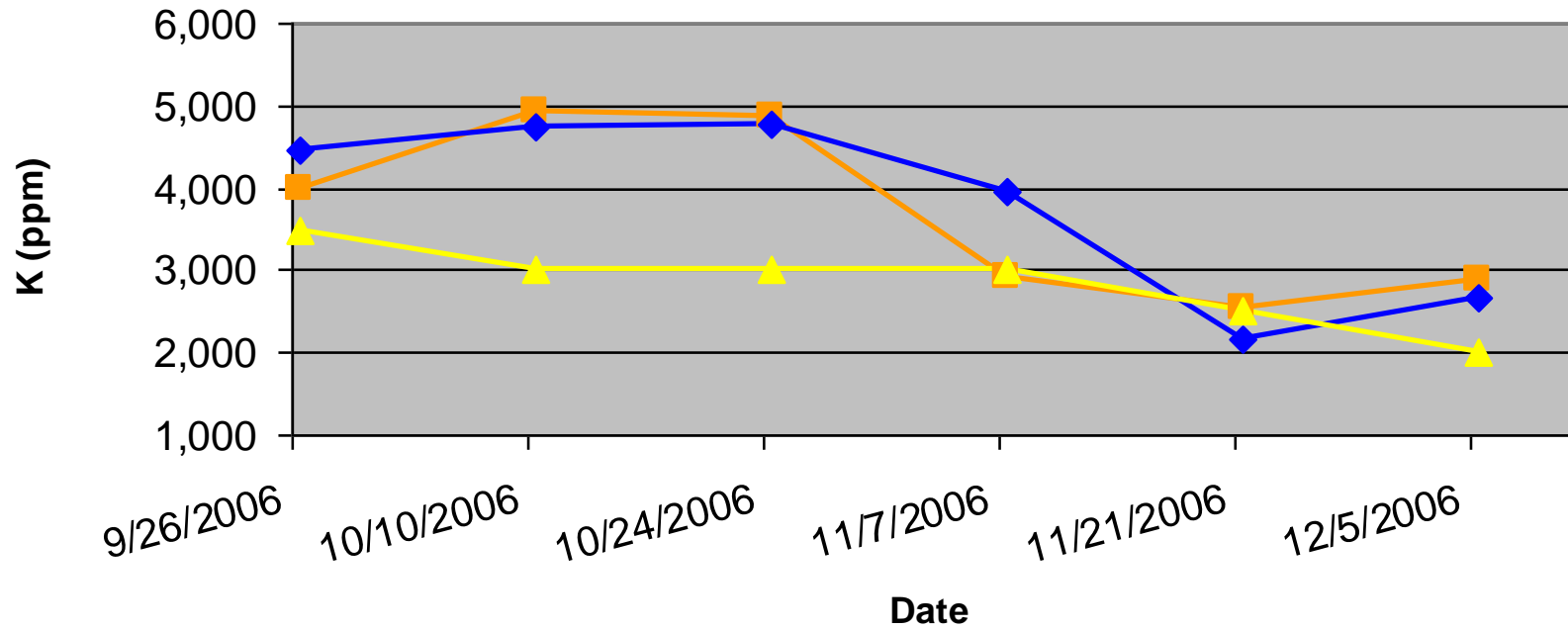
| <b>SOIL ANALYSIS</b> | <b>15-Aug-06</b> |
|----------------------|------------------|
| pH                   | 6.9              |
| Phosphorus (ppm)     | 152              |
| Potassium (ppm)      | 1                |
| Magnesium (ppm)      | 46               |
| Calcium (ppm)        | 486              |

# Nitrogen Sap



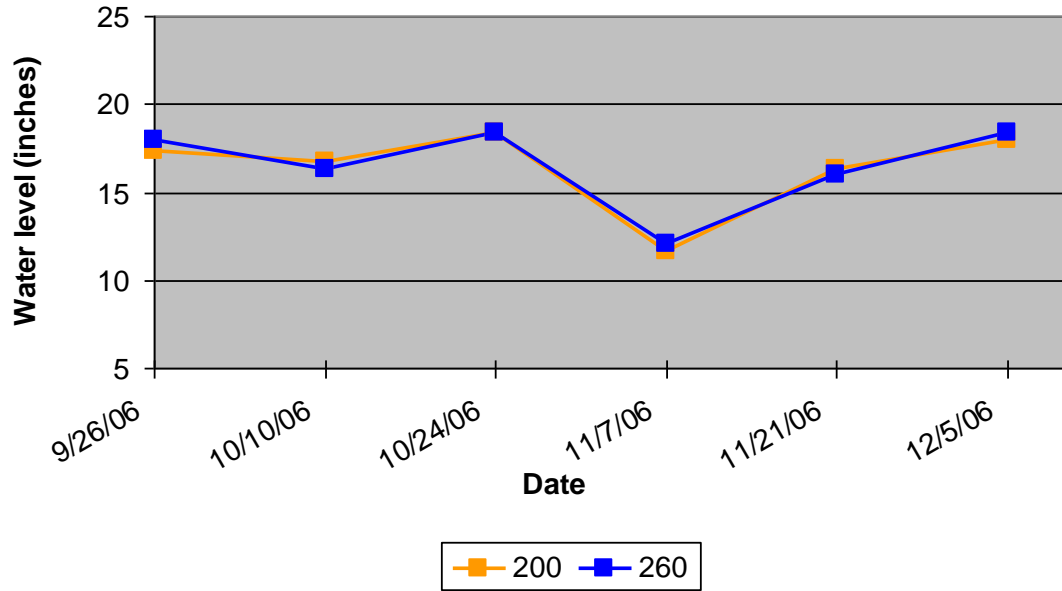


# Potassium Sap

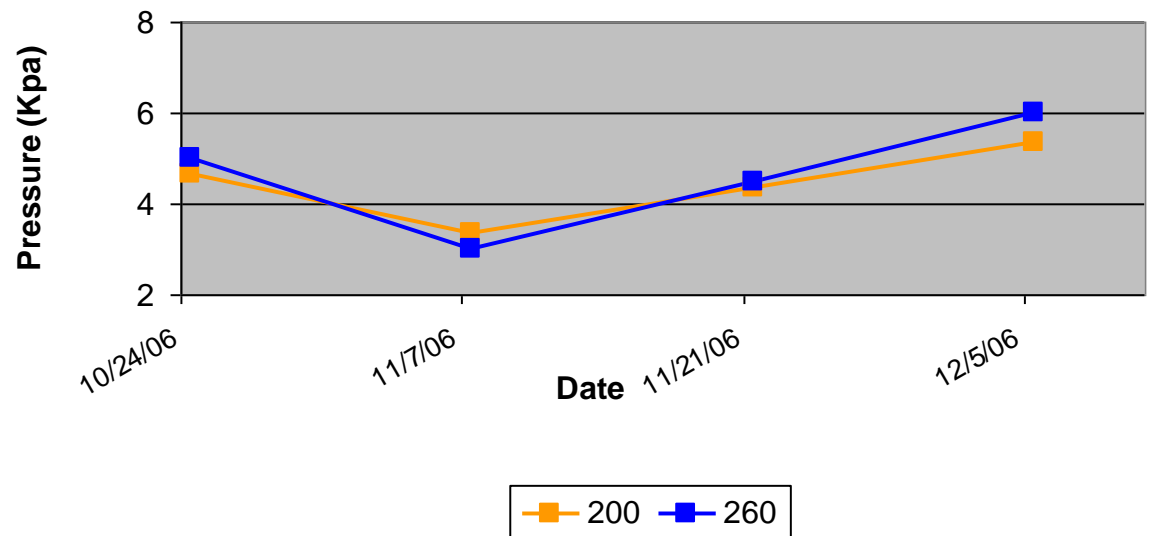


—■— 200 —◆— 260 —▲— Sufficiency range

### Water Tables

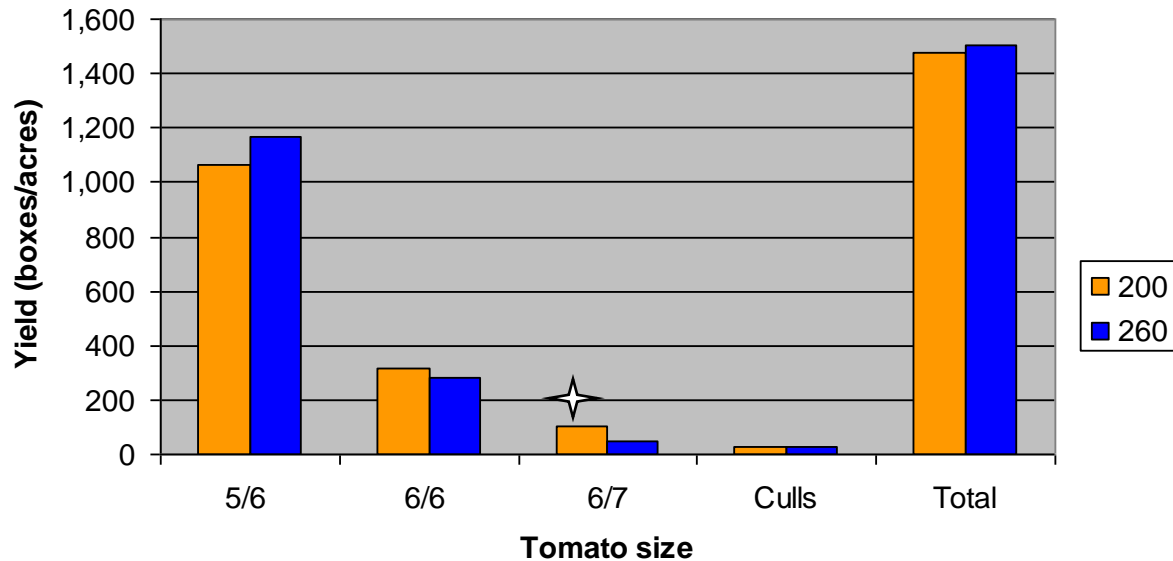


### Tensiometer

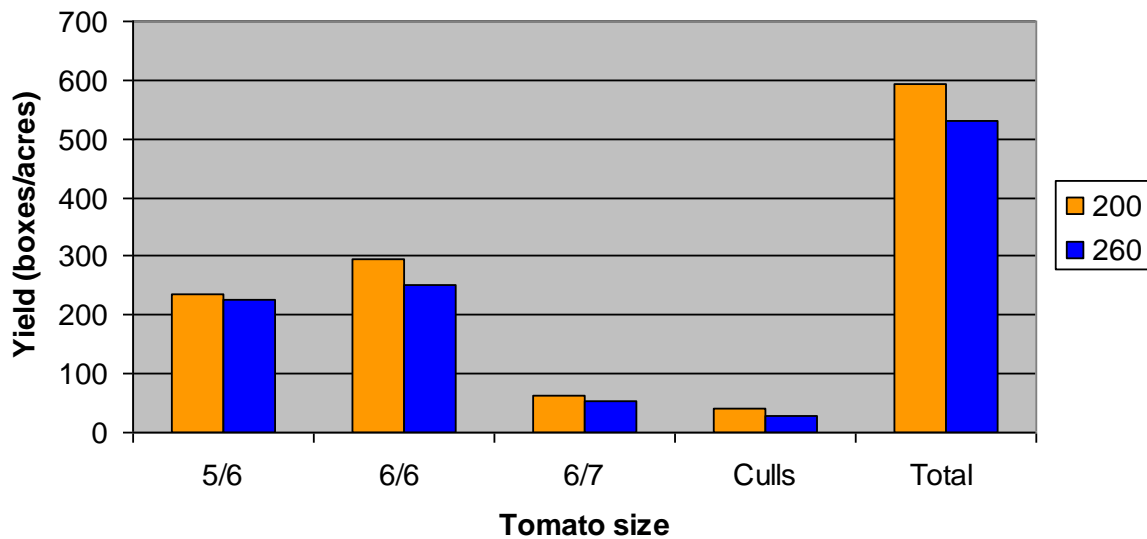




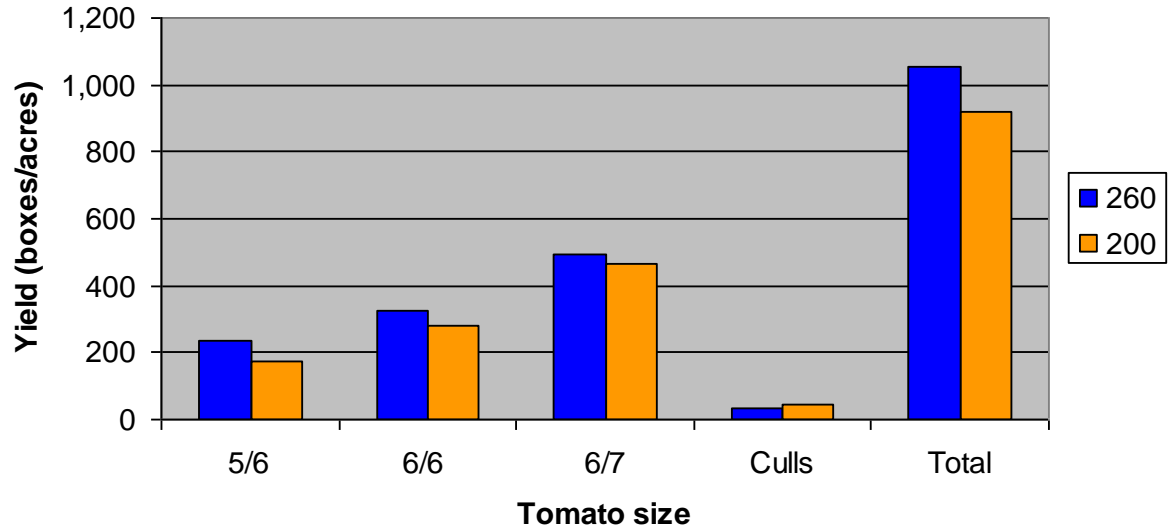
### First Harvest (November 13, 2006)



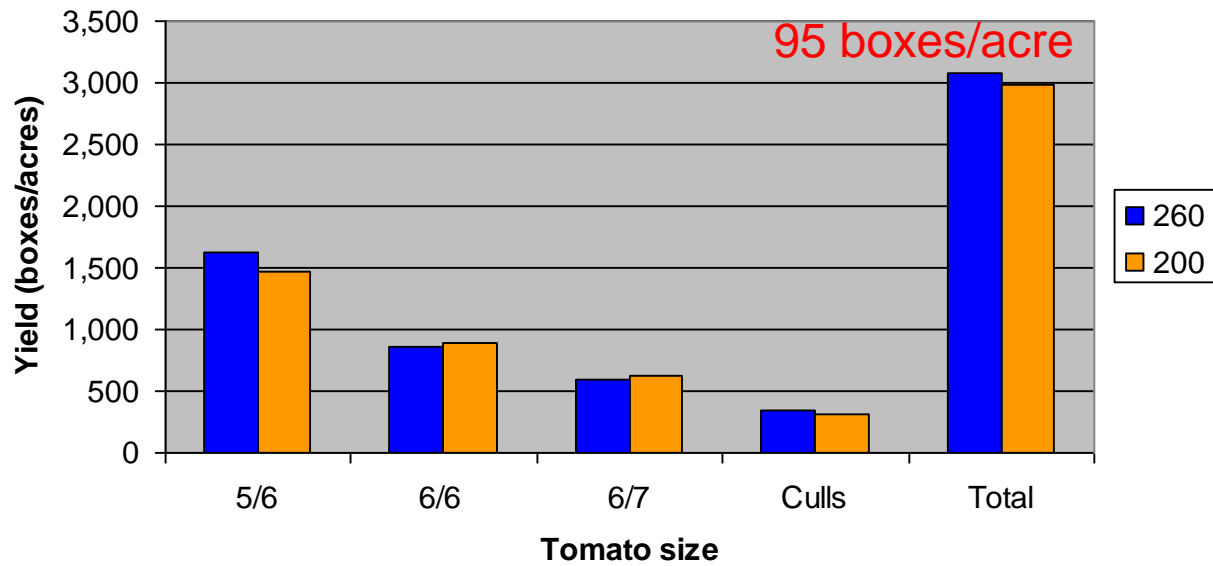
### Second Harvest (November 27, 2006)



### Third Harvest (December 13, 2006)



### Total Harvest



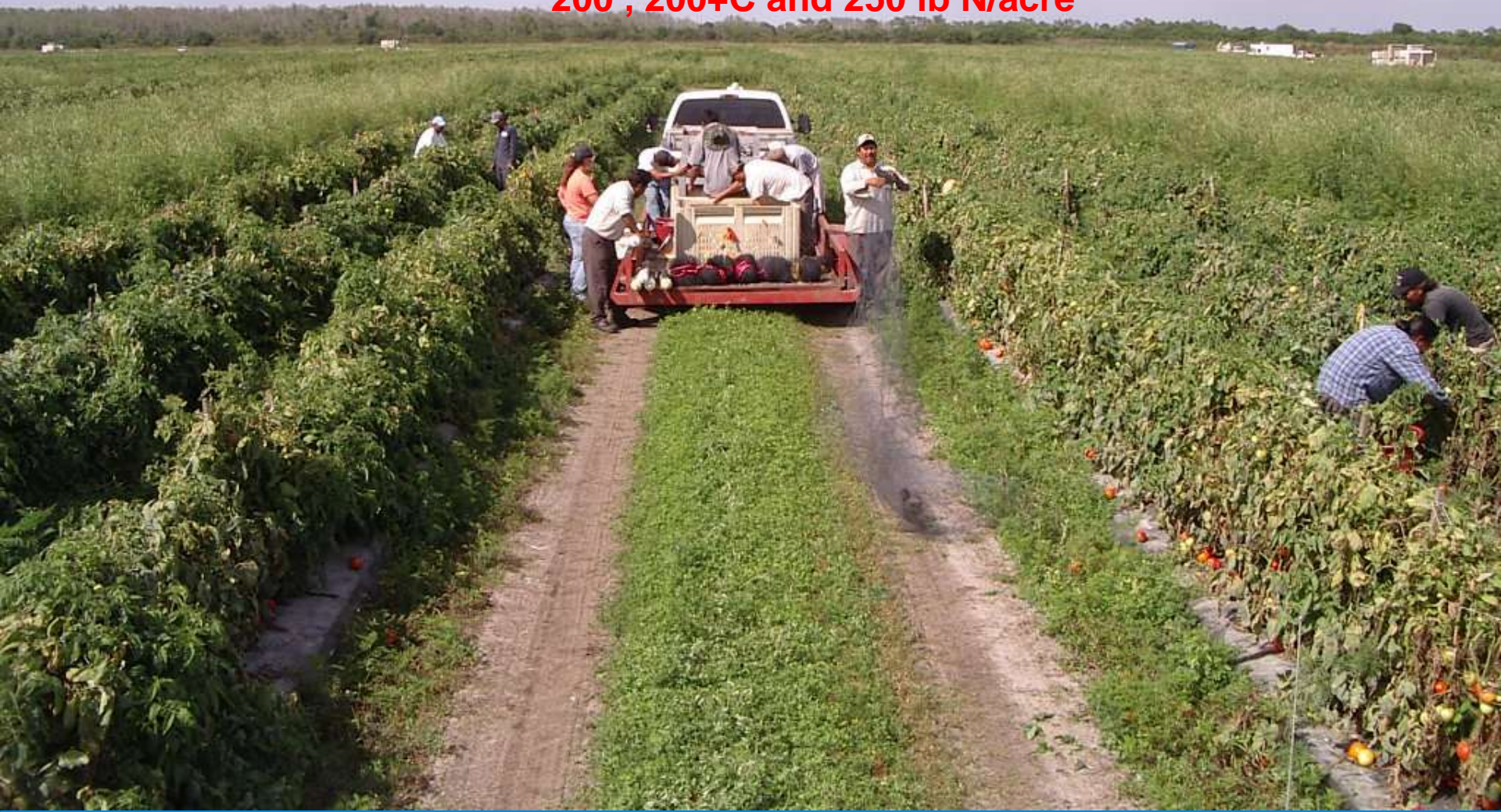


# Winter Season

Oct 15 - Dec 1



**Trial 3**  
**Seep Irrigation**  
**Winter, 2006 (Oct 17)**  
**1 acre**  
**200 , 200+C and 250 lb N/acre**



# Field History

## Trial 3

## Trial 4

| Experimental Design     | CRD (3 Reps)          |
|-------------------------|-----------------------|
| Irrigation              | Seepage               |
| Plot size               | 0.17 acres            |
| Experiment size         | 1 acres               |
| Planting Date           | Oct 17, 2006 (Winter) |
| Cell Size               | 242                   |
| Fumigation              | M.B.                  |
| Linear ft per acre      | 7,260                 |
| Plant population        | 4,840                 |
| Bed Height              | 8 in                  |
| Plant Spacing           | 18 in                 |
| Row run                 | North - South         |
| Monitoring Wells        | 6                     |
| Planting to 3rd Harvest | 20 weeks              |
| 1st                     | 24-Jan-07             |
| 2nd                     | 16-Feb-07             |
| 3rd                     | 7-Mar-07              |

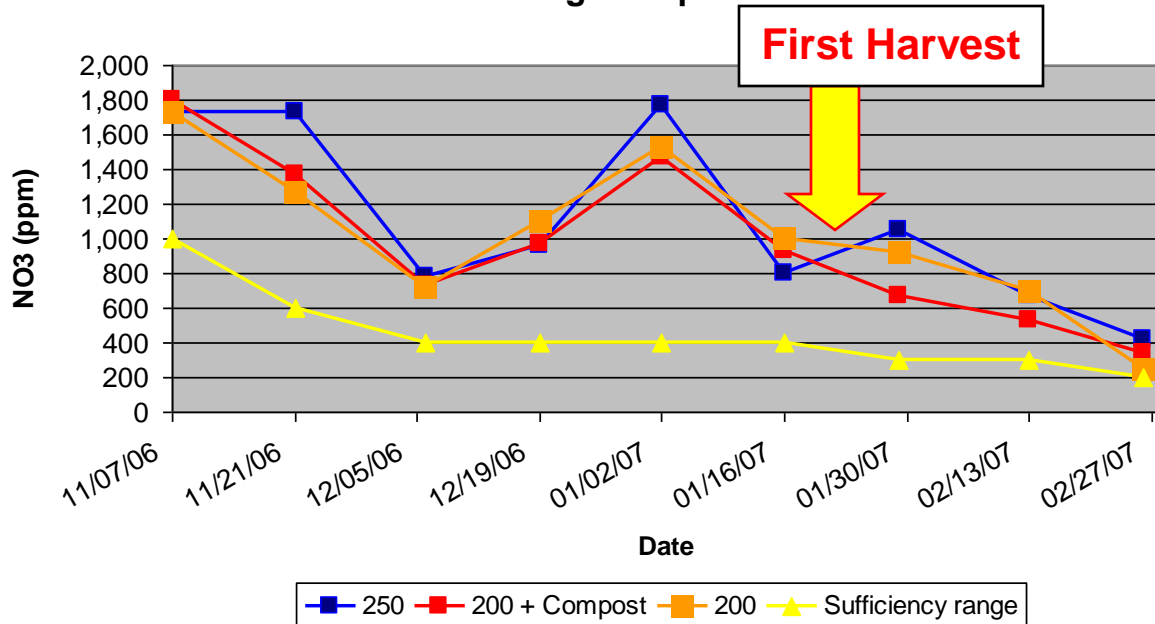
| Experimental Design     | CRD (3 Reps)          |
|-------------------------|-----------------------|
| Irrigation              | Seepage               |
| Plot size               | 0.5 acres             |
| Experiment size         | 3 acres               |
| Planting Date           | Oct 26, 2006 (Winter) |
| Cell size               |                       |
| Fumigation              | M.B 200/Acre (67:33)  |
| Linear ft per acre      | 7,260                 |
| Plant population        | 3,346                 |
| Bed Height              | 8 in                  |
| Plant Spacing           | 26 in                 |
| Row run                 | North-south           |
| Monitoring Wells        | 6                     |
| Planting to 3er Harvest | 16 weeks              |
| 1st                     | 17-Jan-07             |
| 2nd                     | 1-Feb-2007            |
| 3rd                     | 15-Feb-2007           |



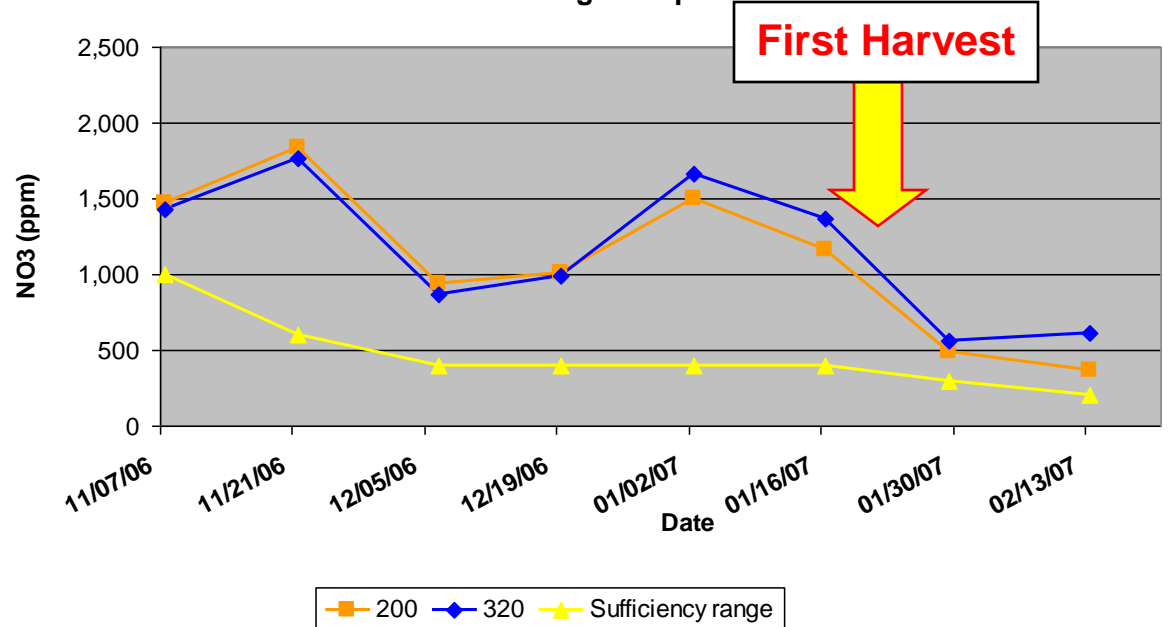
**Trial 4**  
**Seepage Irrigation**  
**Winter, 2006 (Oct 26)**  
**3 acres**  
**200 vs. 320 lb/acres**



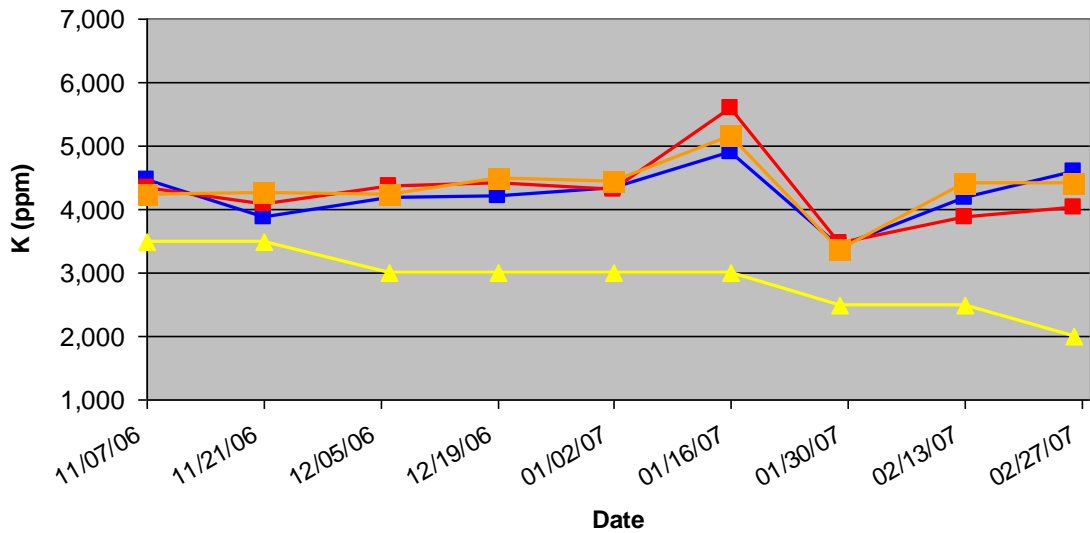
### Nitrogen Sap



### Nitrogen Sap

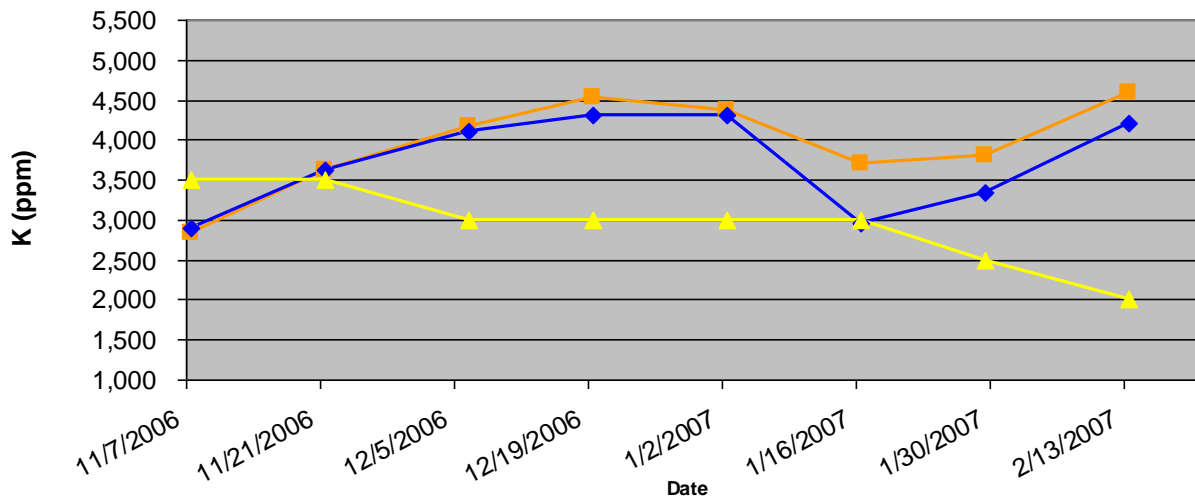


### Potassium Sap



■ 250 ■ 200 + Compost ■ 200 ▲ Sufficiency range

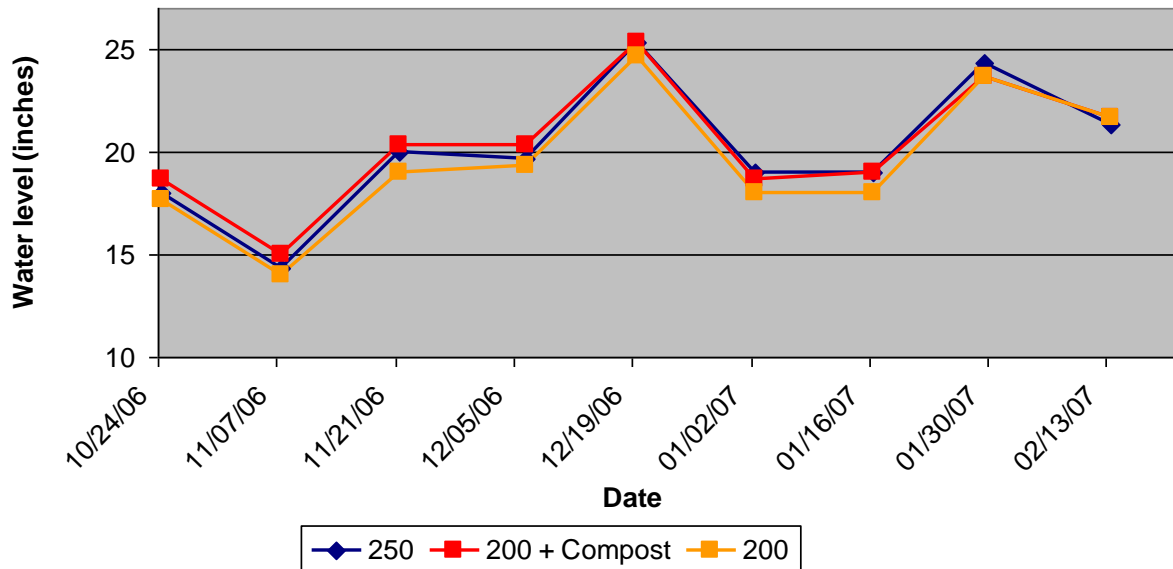
### Potassium Sap



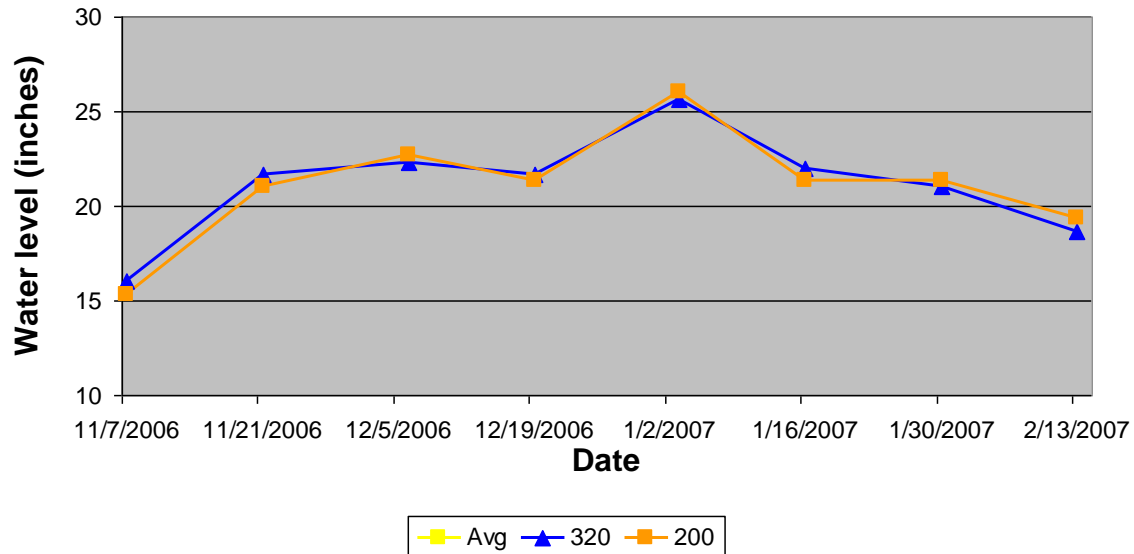
■ 200 ■ 320 ▲ Sufficiency range



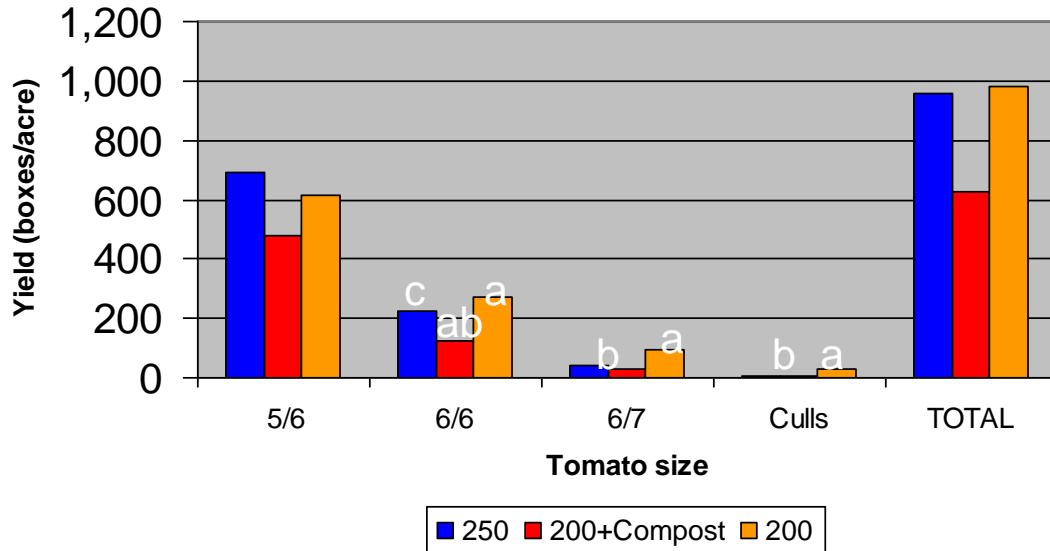
### Water Table



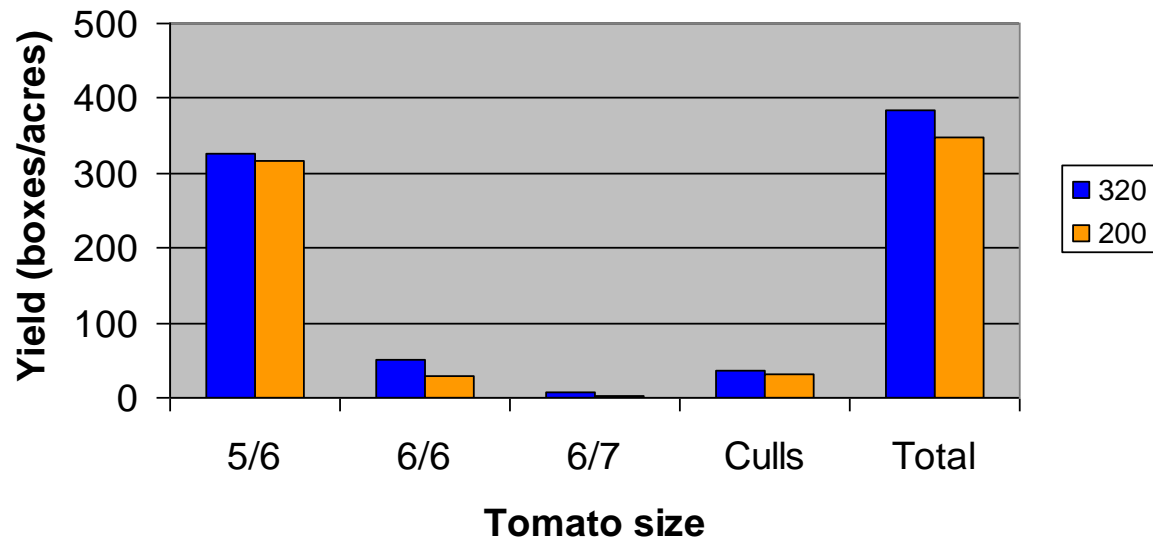
### Water Tables



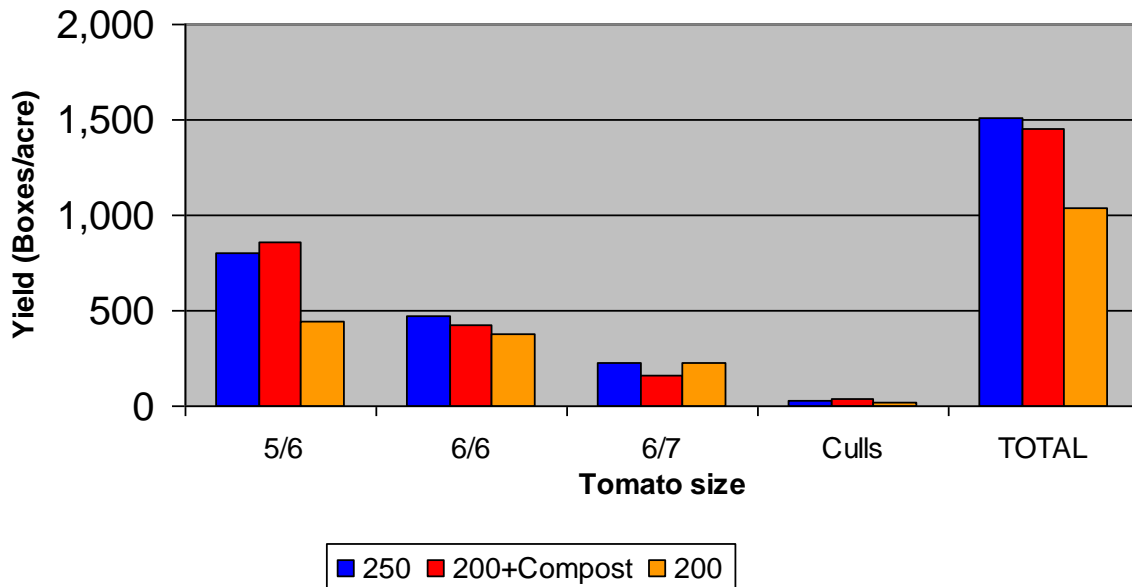
### First Harvest (January 24, 2007)



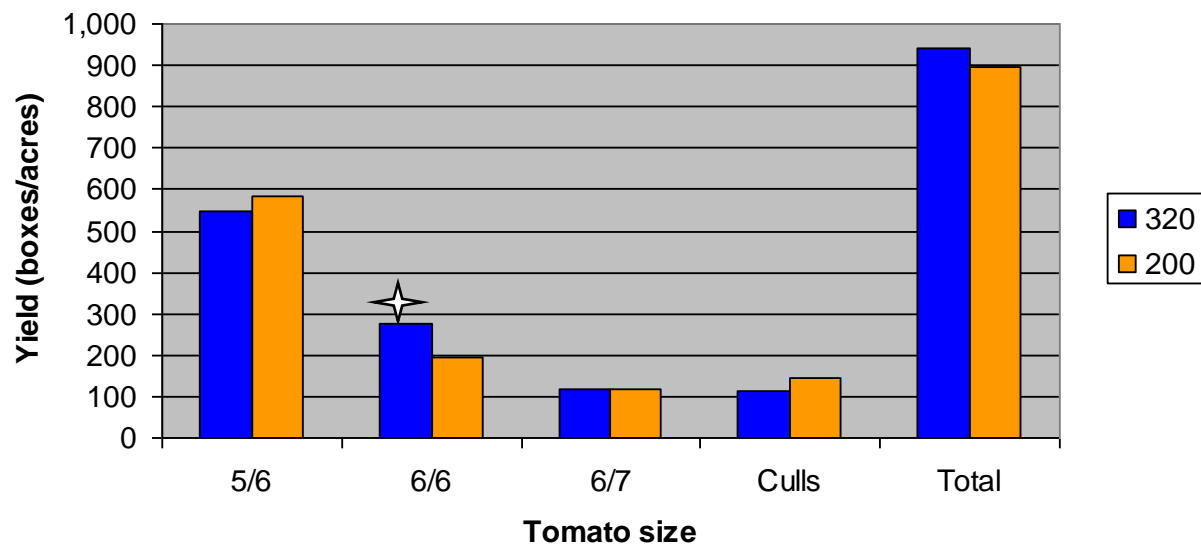
### First Harvest (January 17, 2007)



### Second Harvest (February 16, 2007)

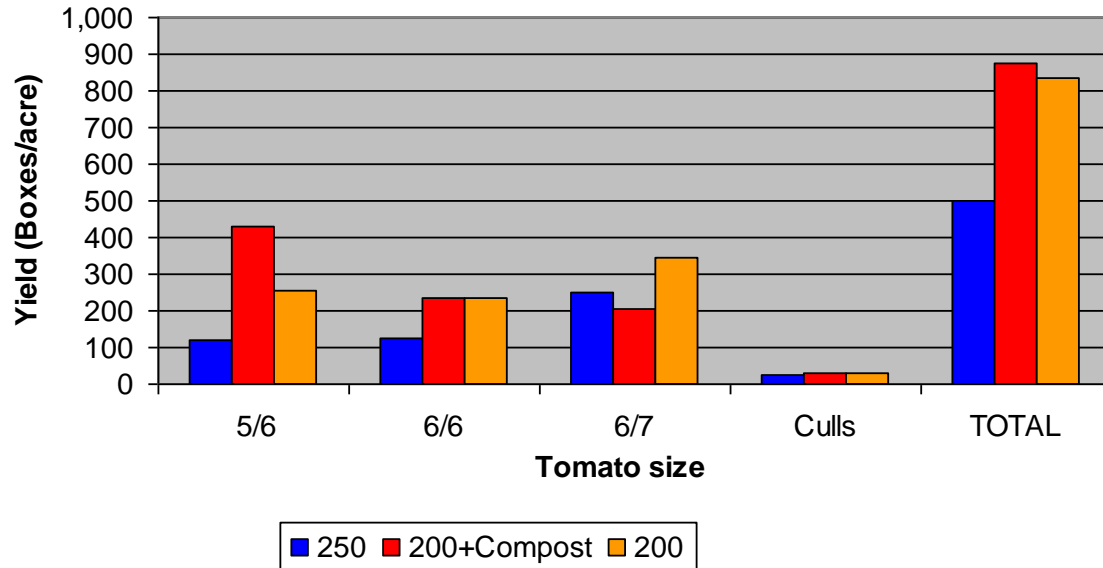


### Second Harvest (February 1, 2007)

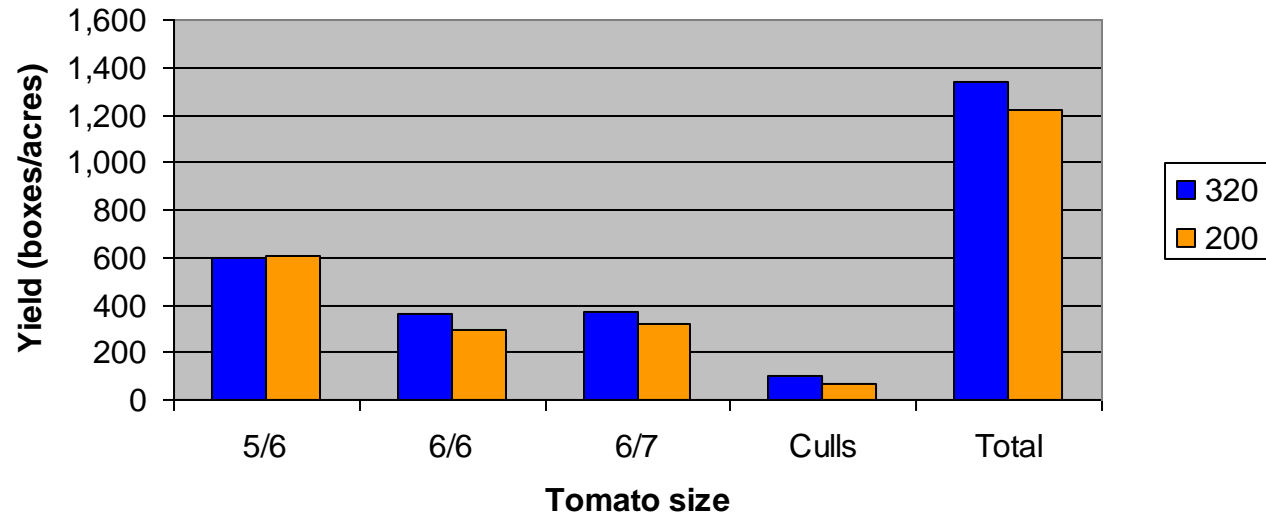




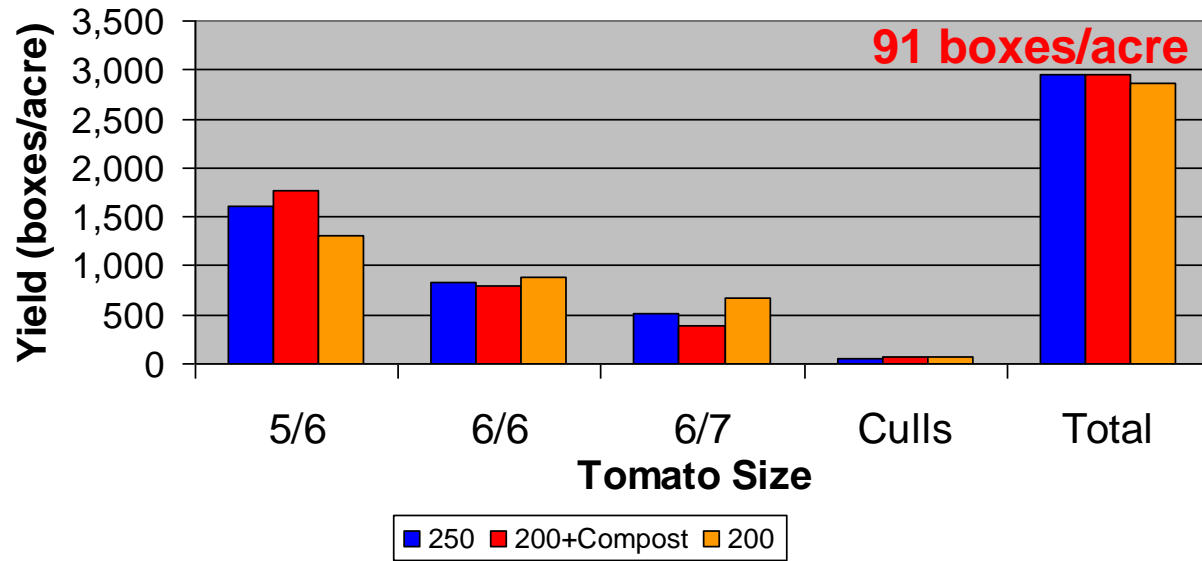
### Third Harvest (March 7, 2007)



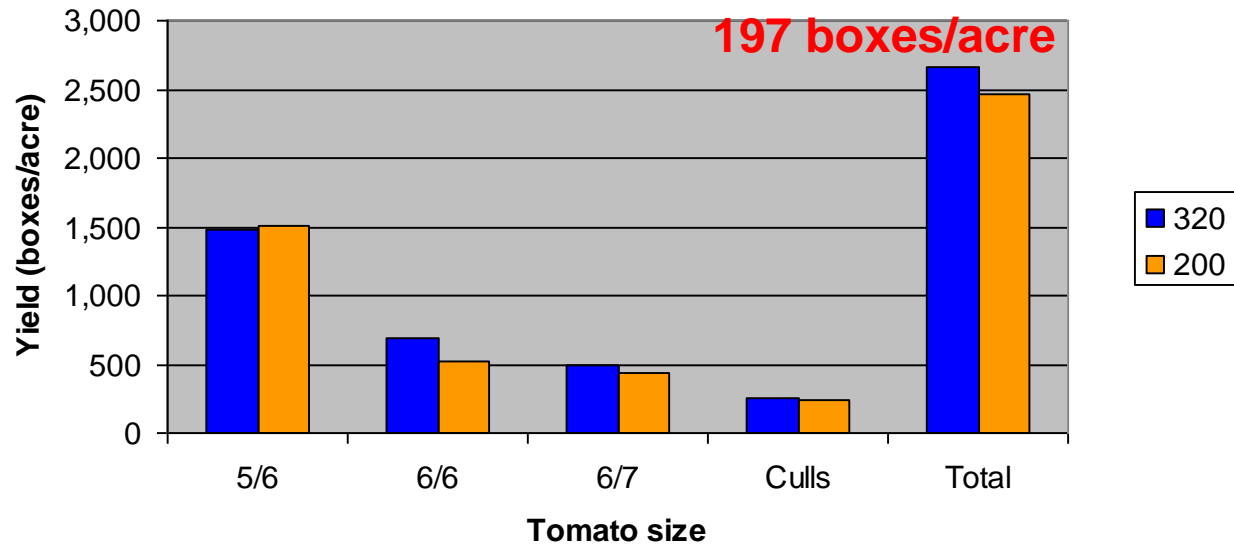
### Third Harvest (February 15, 2007)



## Total Harvest



## Total Harvest



**Trial 5**  
**Seepage Irrigation**  
**Winter, 2006 (Nov 15)**  
**21 acres**  
**200 vs 260 lb N/acre**





**Trial 8-9**  
**Seepage Irrigation**  
**Winter, 2006 (Nov 22)**  
**5.5 acres**  
**200 vs 300 lb N/acre**  
**20% CRF hot mix**



# Field History

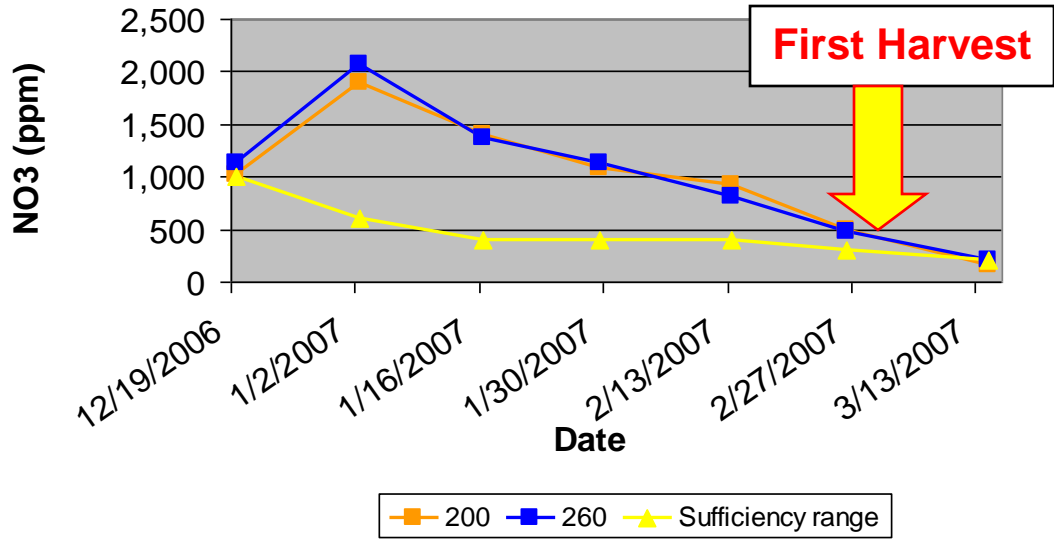
**Trial 5**

**Trial 8-9 (21 % CRF)  
Hot Mix**

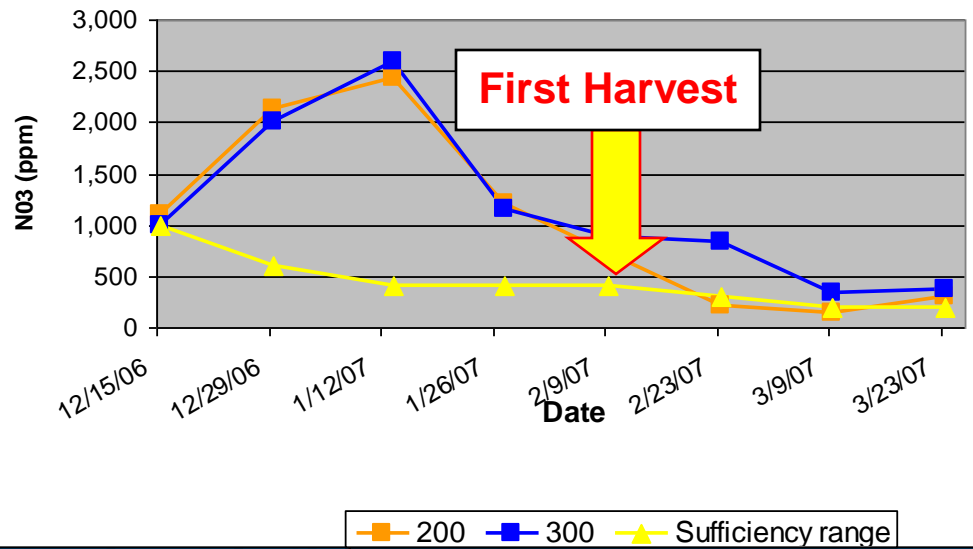
| Experimental Design     | CRD (3 Reps)          |
|-------------------------|-----------------------|
| Irrigation              | Seepage               |
| Plot size               | 3.4 acres             |
| Experiment size         | 21 acres              |
| Planting Date           | Nov 15, 2006 (Winter) |
| Bed wide                | 32 in                 |
| Cell Size               | 200                   |
| Fumigation              | M.B 150/acre (98:2)   |
| Linear ft per acre      | 7,260                 |
| Plant population        | 4,373                 |
| Bed Height              | 8 in                  |
| Plant Spacing           | 20 in                 |
| Row run                 | North to South        |
| Monitoring Wells        | 6                     |
| Planting to 3er Harvest | 18 weeks              |
| 1st                     | 26-Feb-07             |
| 2nd                     | 14-Mar-07             |
| 3rd                     | 22-Mar-07             |

| Experimental Design     | CRD (3 Reps)          |
|-------------------------|-----------------------|
| Irrigation              | Seepage               |
| Plot size               | 0.9 acres             |
| Experiment size         | 5.5 acres             |
| Plant Date              | Nov 22, 2006 (Winter) |
| Cell Size               |                       |
| Fumigation              | M.B                   |
| Linear ft per acre      | 7,260                 |
| Plant population        | 3,630                 |
| Bed Height              | 9 in                  |
| Plant Spacing           | 24 in                 |
| Row run                 | North to South        |
| Monitoring Wells        | 3                     |
| Planting to 3er Harvest | 17 weeks              |
| 1st                     | 19-Feb-07             |
| 2nd                     | 9-Mar-07              |
| 3rd                     | 23-Mar-07             |

# Trial 5 Nitrogen- Sap



# Trial 8-9 Nitrogen Sap

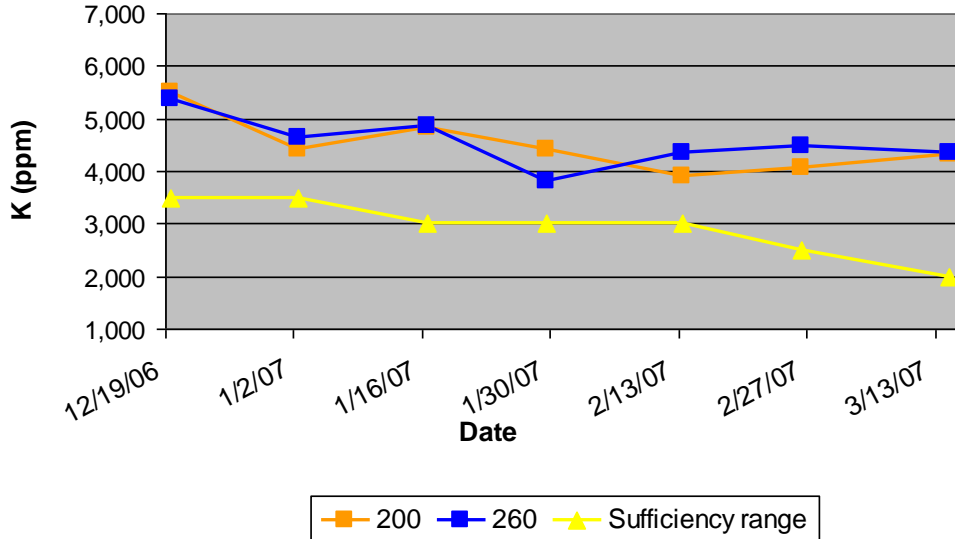


| N Rates (Lb/acre) | Nitrogen (%) |          |         |         |         |
|-------------------|--------------|----------|---------|---------|---------|
|                   | 12/15/06     | 12/29/06 | 1/13/07 | 1/27/07 | 2/9/07  |
|                   | FB           | FF       | 1-inch  | 2-inch  | 2>inch  |
| 300               | 6.1          | 5.4      | 5.5     | 5.0     | 4.6     |
| 200               | 5.7          | 5.3      | 5.3     | 5.4     | 4.3     |
| Adequate range    | 3.0-5.0      | 2.8-4.0  | 2.5-4.0 | 2.5-4.0 | 2.5-4.0 |



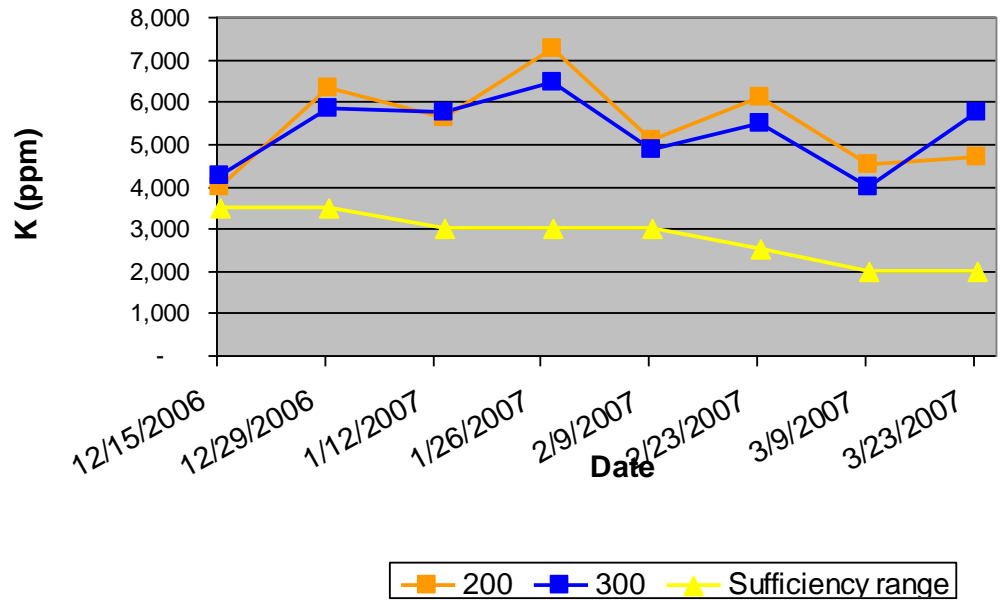
# Trial 5

## K- Sap



# Trial 8-9

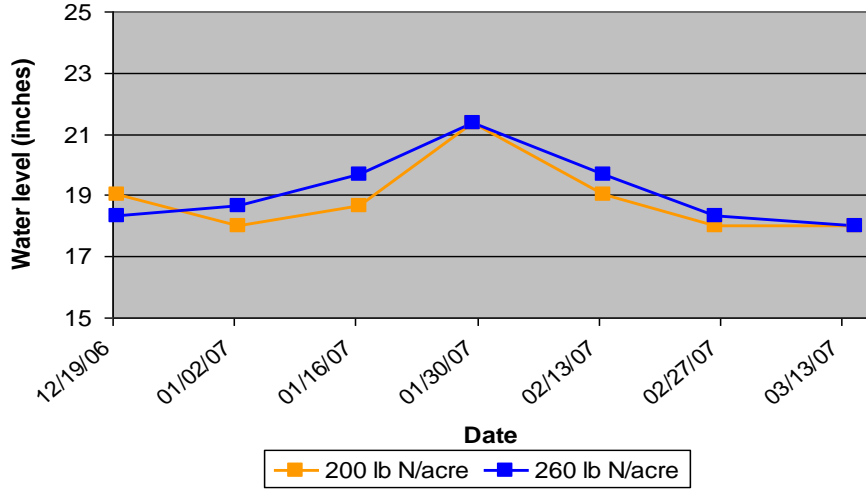
## K Sap



| N Rates (Lb/acre) | Potassium (%) |          |         |         |         |
|-------------------|---------------|----------|---------|---------|---------|
|                   | 12/15/06      | 12/29/06 | 1/13/07 | 1/27/07 | 2/9/07  |
|                   | FB            | FF       | 1-inch  | 2-inch  | 2>inch  |
| 300               | 2.9           | 5.3      | 6.0     | 4.9     | 5.0     |
| 200               | 3.0           | 4.9      | 6.5     | 5.1     | 5.0     |
| Adequate range    | 3.0-5.0       | 2.5-4.0  | 2.5-4.0 | 2.5-4.0 | 2.5-4.0 |

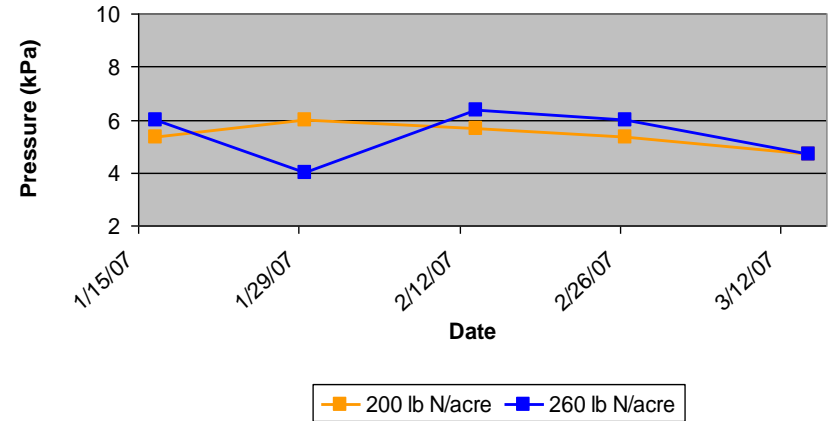
# Trial 5

## Water Tables



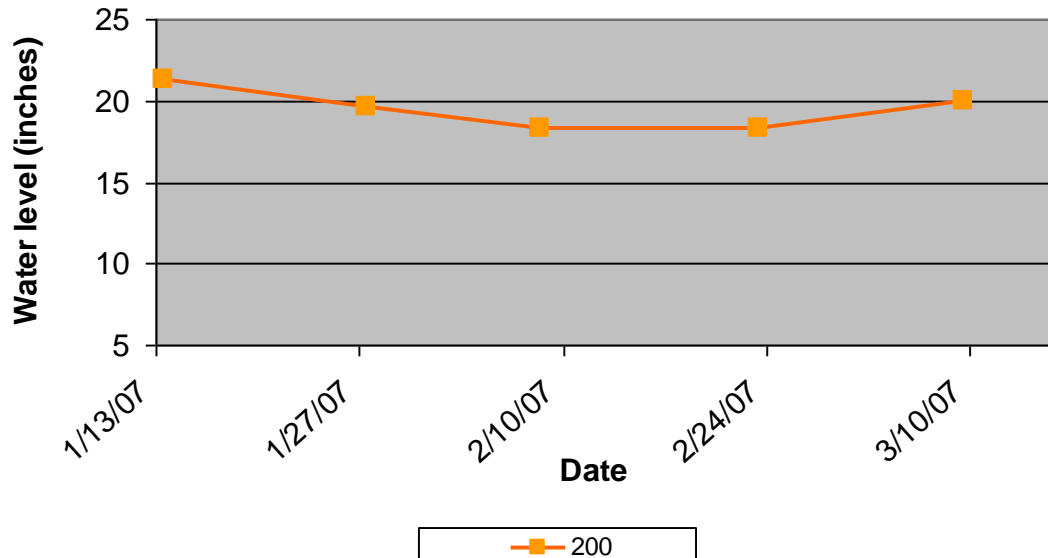
# Trial 5

## Tensimeter

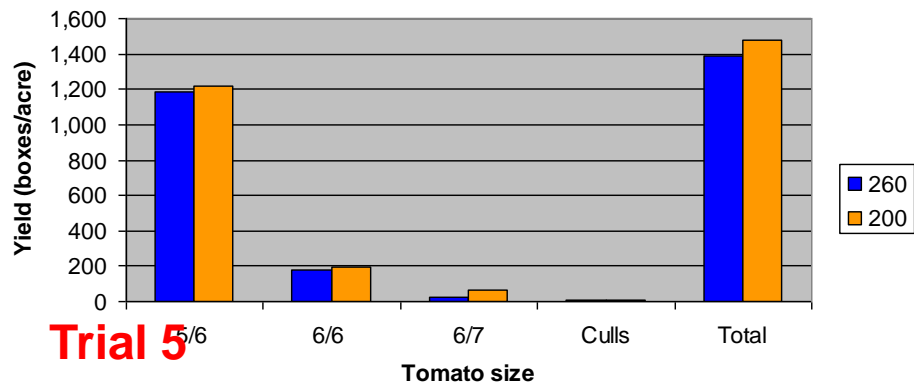


# Trial 8-9

## Water Tables



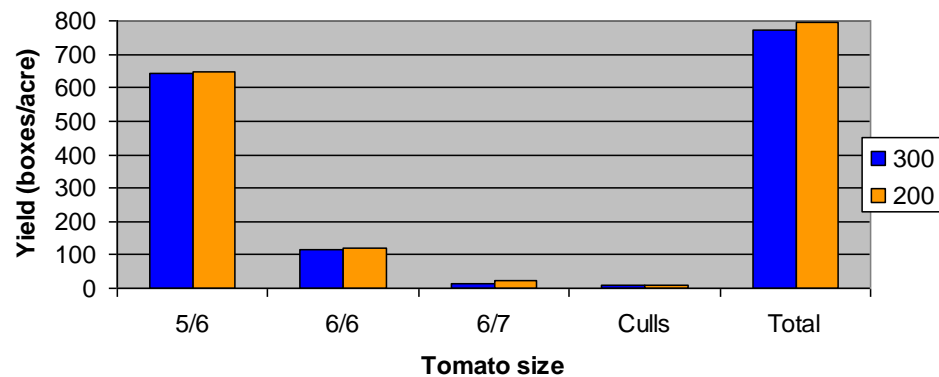
### First Harvest (Feb 26, 2007)



## Trial 8-9

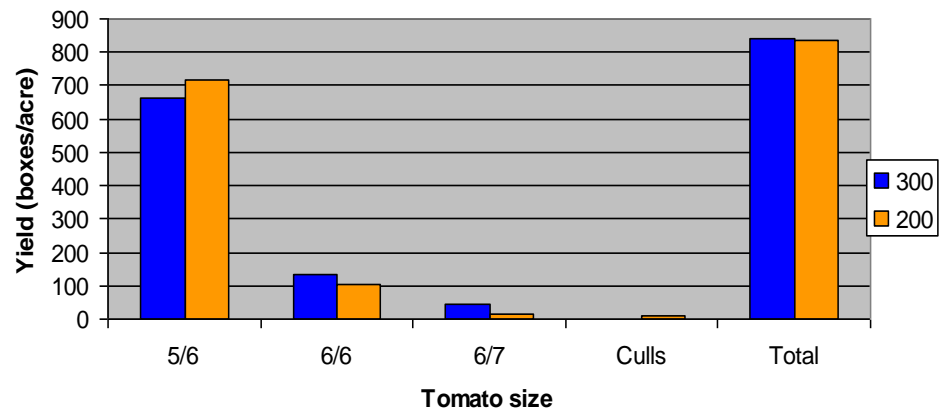
### Var 1

#### First Harvest (February 19, 2007)



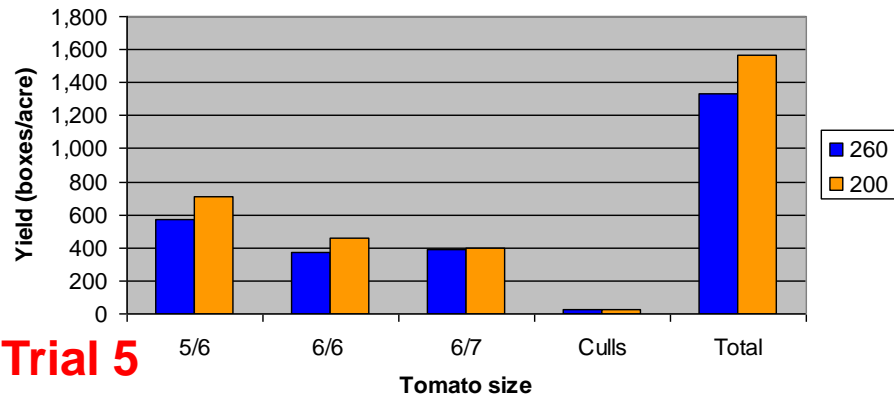
### Var 2

#### First Harvest (February 19, 2007)





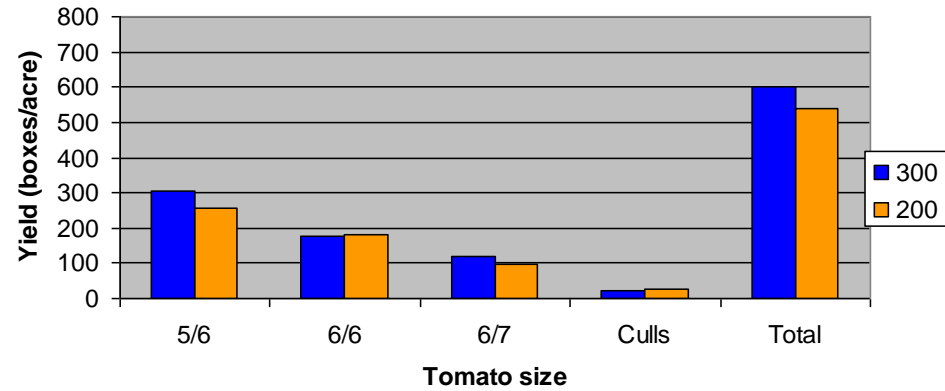
### Second Harvest (March 14, 2007)



## Trial 8-9

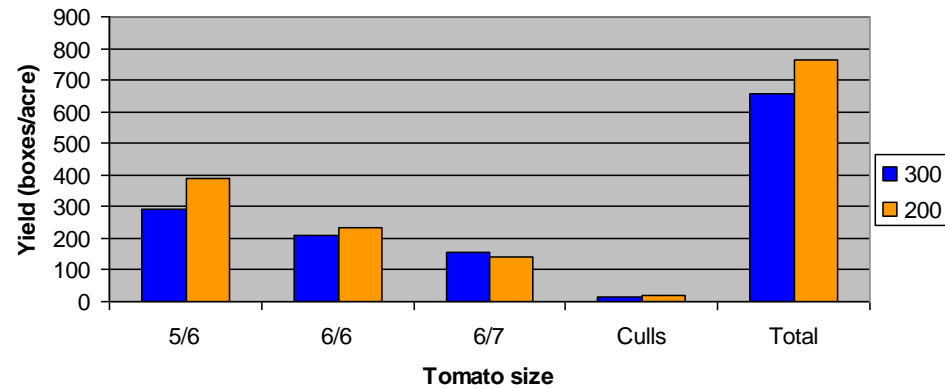
### Second Harvest (March 9, 2007)

#### Var 1

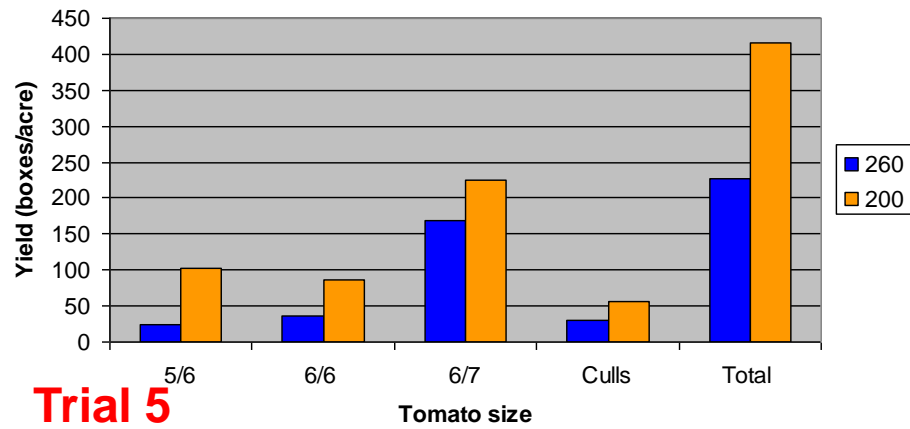


### Second Harvest (March 9, 2007)

#### Var 2



Third Harvest (March 22, 2007)

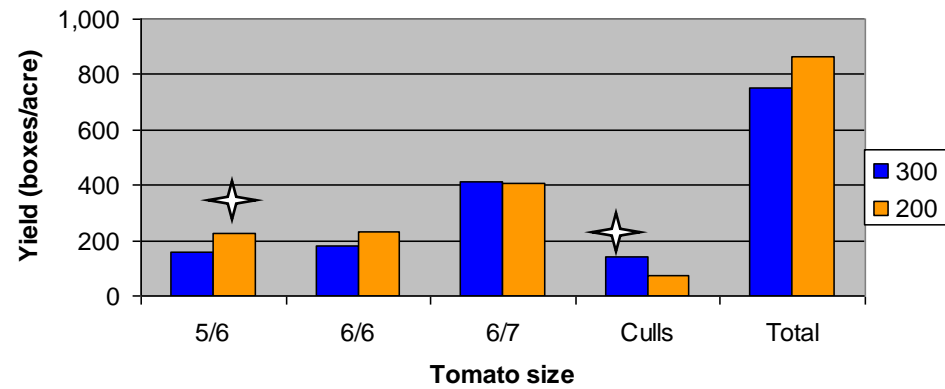


**Trial 5**  
**Virus**

**Trial 8-9**

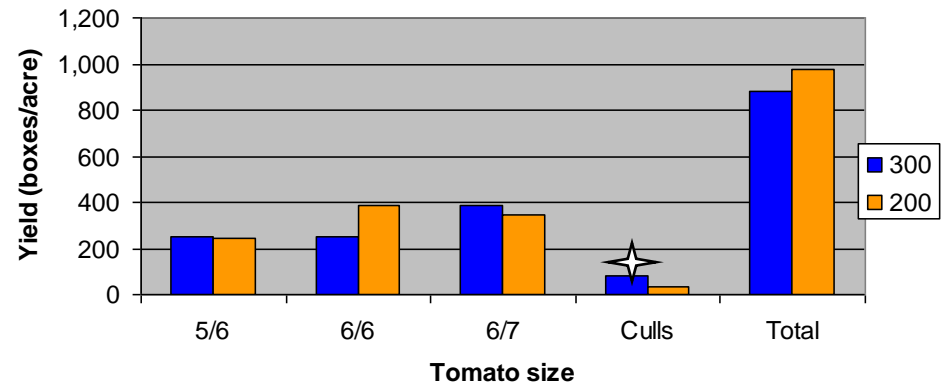
Third Harvest (March 23, 2007)

**Var 1**

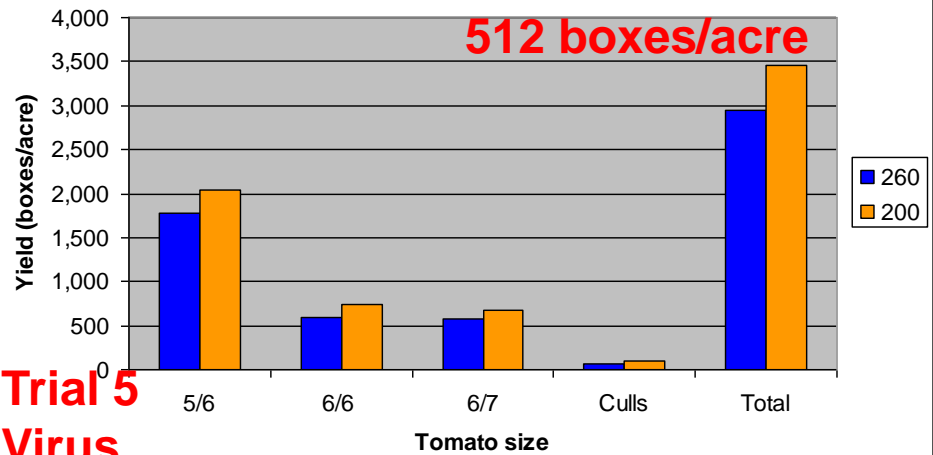


**Var 2**

Third Harvest (March 23, 2007)



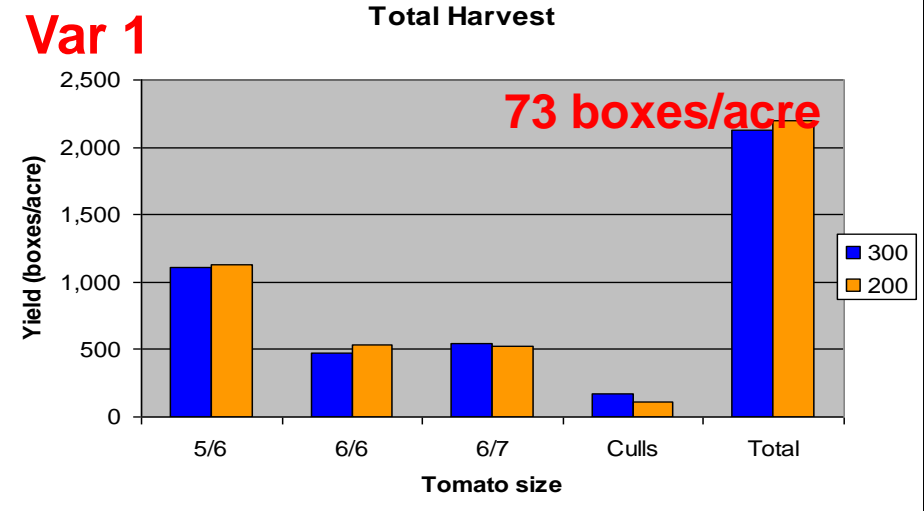
Total Harvest



Trial 5  
Virus

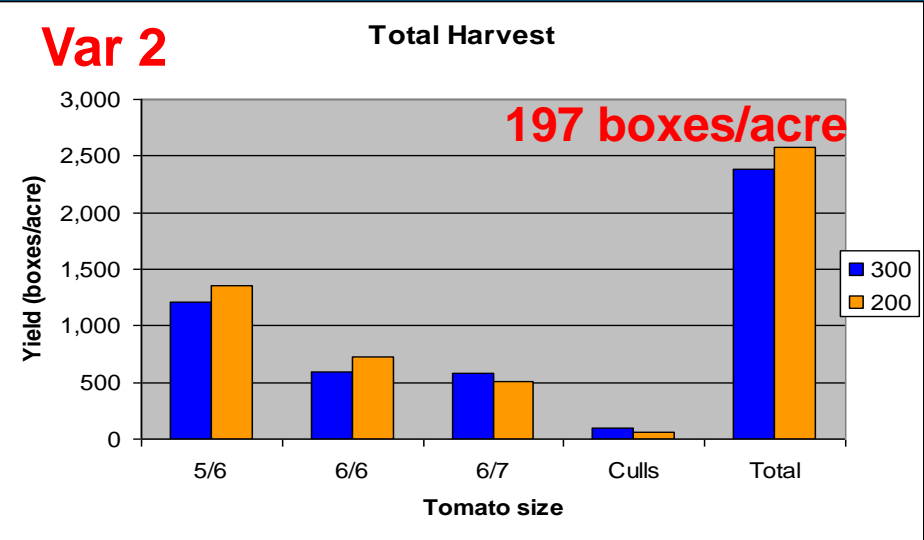
Trial 8-9

Total Harvest



Var 1

Total Harvest



Var 2



**Trial 2**  
**Drip Irrigation**  
**Winter 2007 (Oct 16)**  
**35 acres**  
**200 vs 300 lb N/acre**





**Trial 6**  
**Drip Irrigation**  
**Winter, 2006 (Nov 27)**  
**50 acres**  
**200 vs 300 lb N/acre**



# Field History

## Trial 2

## Trial 6

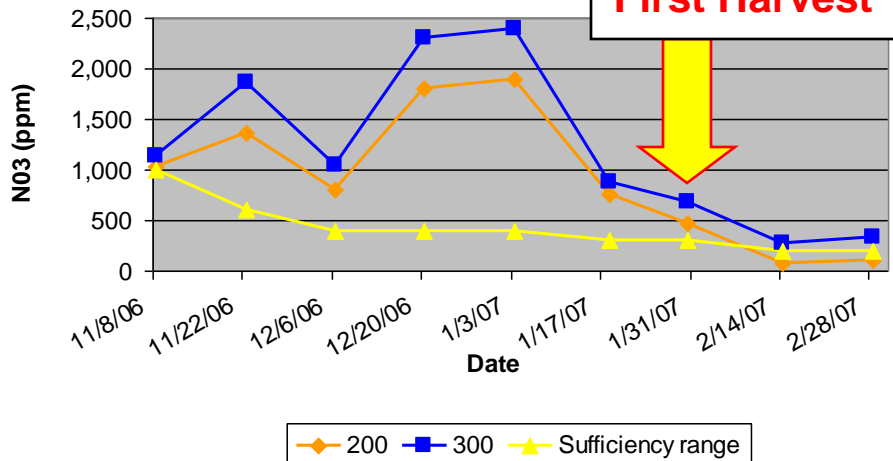
|                                |                                  |
|--------------------------------|----------------------------------|
| <b>Irrigation</b>              | Drip                             |
| <b>Plot size (acres)</b>       | 19.8 (10E/Grower)/15.4 (10W/BMP) |
| <b>Plant Date</b>              | Oct 16, 2006 (Winter)            |
| <b>Cell Size</b>               | 200                              |
| <b>Fumigation</b>              | M.B                              |
| <b>Linear ft per acre</b>      | 7,260                            |
| <b>Plant population</b>        | 4,356                            |
| <b>Bed Height</b>              | 9 in                             |
| <b>Plant Spacing</b>           | 20 in                            |
| <b>Row run</b>                 | North to South                   |
| <b>Monitoring Wells</b>        | 2                                |
| <b>Planting to 3er Harvest</b> | 20 weeks                         |
| <b>1st</b>                     | 18-Jan-07                        |
| <b>2nd</b>                     | 8-Feb-07                         |
| <b>3rd</b>                     | 1-Mar-07                         |

|                                |                       |
|--------------------------------|-----------------------|
| <b>Irrigation</b>              | Drip                  |
| <b>Plot size (acres)</b>       | 25                    |
| <b>Plant Date</b>              | Nov 27, 2006 (Winter) |
| <b>Fumigation</b>              | M.B                   |
| <b>Linear ft per acre</b>      | 7,260                 |
| <b>Plant population</b>        | 4,356                 |
| <b>Bed Height</b>              | 9 in                  |
| <b>Plant Spacing</b>           | 20 in                 |
| <b>Row run</b>                 | North to South        |
| <b>Monitoring Wells</b>        | 2                     |
| <b>Planting to 3er Harvest</b> | 19 weeks              |
| <b>1st</b>                     | 6-Mar-07              |
| <b>2nd</b>                     | 26-Mar-07             |
| <b>3rd</b>                     | 11-Apr-07             |



# Trial 2

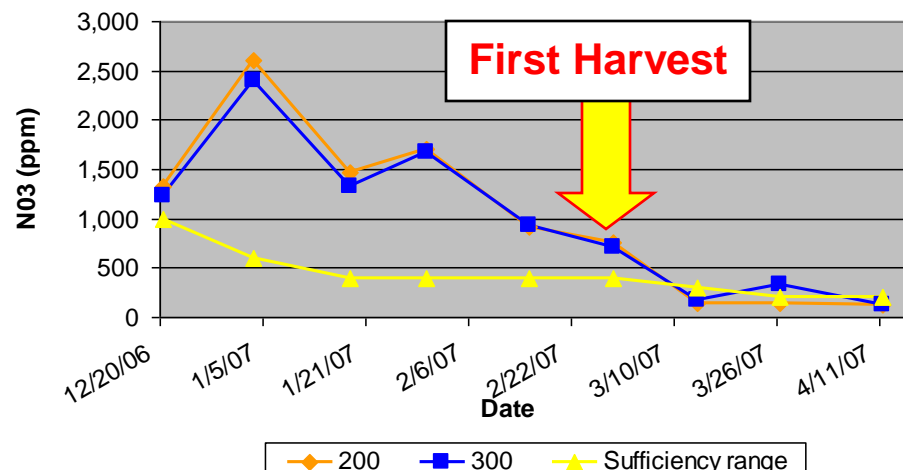
## Nitrogen Sap



| N Rates (Lb/acre) | Nitrogen (%) |            |           |            |          |           |           |           |
|-------------------|--------------|------------|-----------|------------|----------|-----------|-----------|-----------|
|                   | FB           | FF         | 1-inch    | 1>inch     | 2>inch   | 1st Harv  | 1st Harv  | 2nd Harv  |
|                   | 11/8/2006    | 11/23/2006 | 12/6/2006 | 12/20/2006 | 1/3/2007 | 1/18/2007 | 1/30/2007 | 2/14/2007 |
| 300               | 6.8          | 6.2        | 5.6       | 4.2        | 5.3      | 3.7       | 4.1       | 2.9       |
| 200               | 6.2          | 6.5        | 4.9       | 4.5        | 3.9      | 3.5       | 3.8       | 2.5       |
| Adequate range    | 3.0-5.0      | 2.8-4.0    | 2.5-4.0   | 2.5-4.0    | 2.5-4.0  | 2.0-3.5   | 2.0-3.0   | 2.0-3.0   |

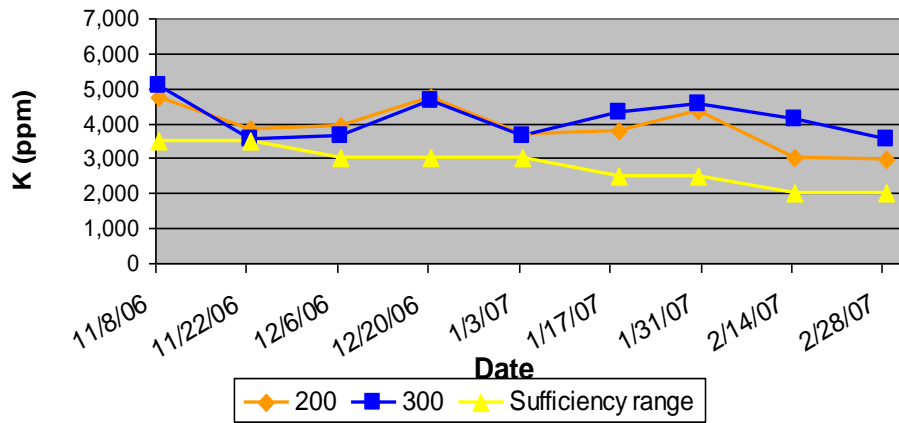
# Trial 6

## Nitrogen Sap



# Trial 2

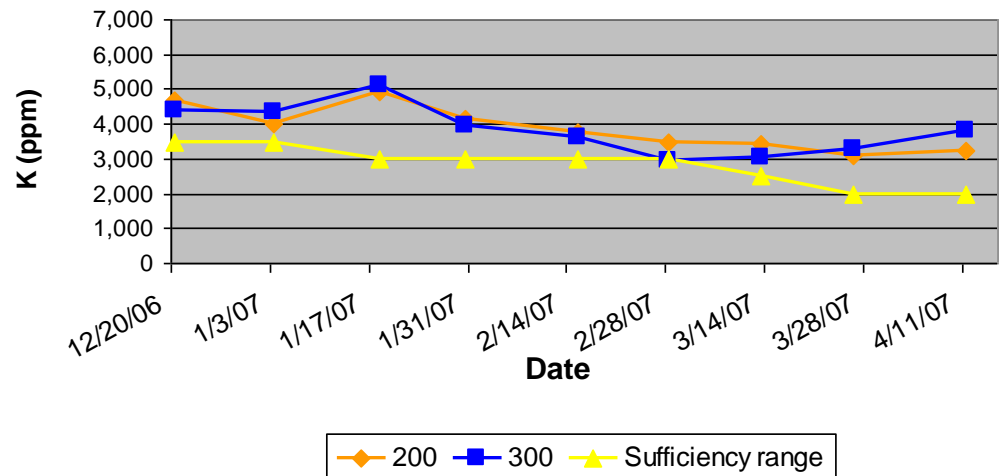
## Potassium Sap



| N Rates (Lb/acre) | Potassium (%) |            |           |            |          |           |           |                      |
|-------------------|---------------|------------|-----------|------------|----------|-----------|-----------|----------------------|
|                   | 11/8/2006     | 11/23/2006 | 12/6/2006 | 12/20/2006 | 1/3/2007 | 1/18/2007 | 1/30/2007 | 2/14/2007            |
|                   | FB            | FF         | 1-inch    | 1>inch     | 2>inch   | 1st Harv  | 1st Harv  | 2 <sup>nd</sup> Harv |
| 300               | 2.7           | 4.9        | 4.9       | 5.6        | 4.9      | 4.0       | 3.4       | 2.9                  |
| 200               | 2.9           | 5.1        | 5.0       | 4.2        | 4.3      | 3.9       | 2.7       | 2.5                  |
| Adequate range    | 3.0-5.0       | 2.5-4.0    | 2.5-4.0   | 2.5-4.0    | 2.5-4.0  | 1.5-2.5   | 1.5-2.5   | 1.5-2.5              |

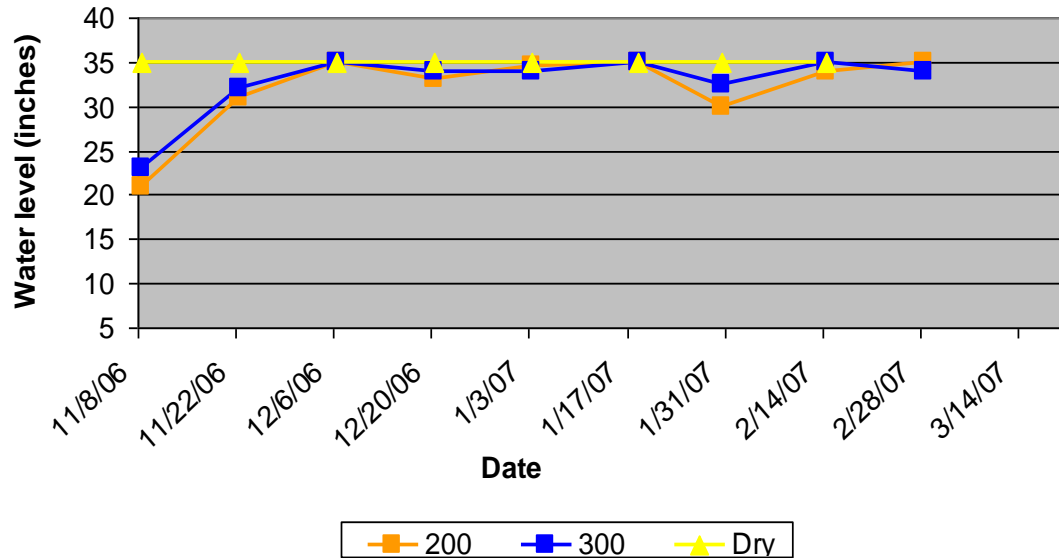
# Trial 6

## Potassium Sap



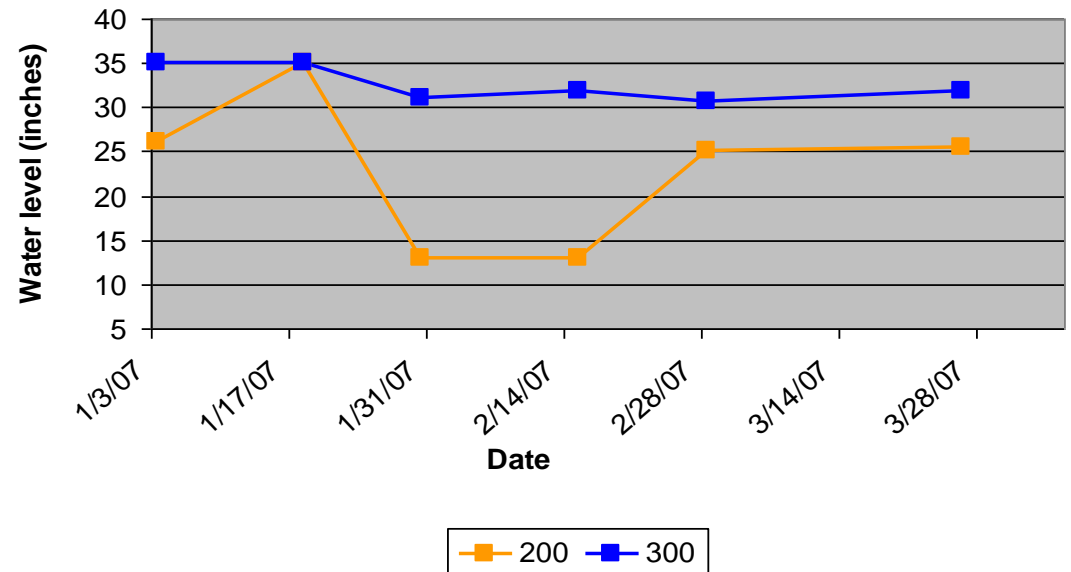
## Trial 2

### Water Tables



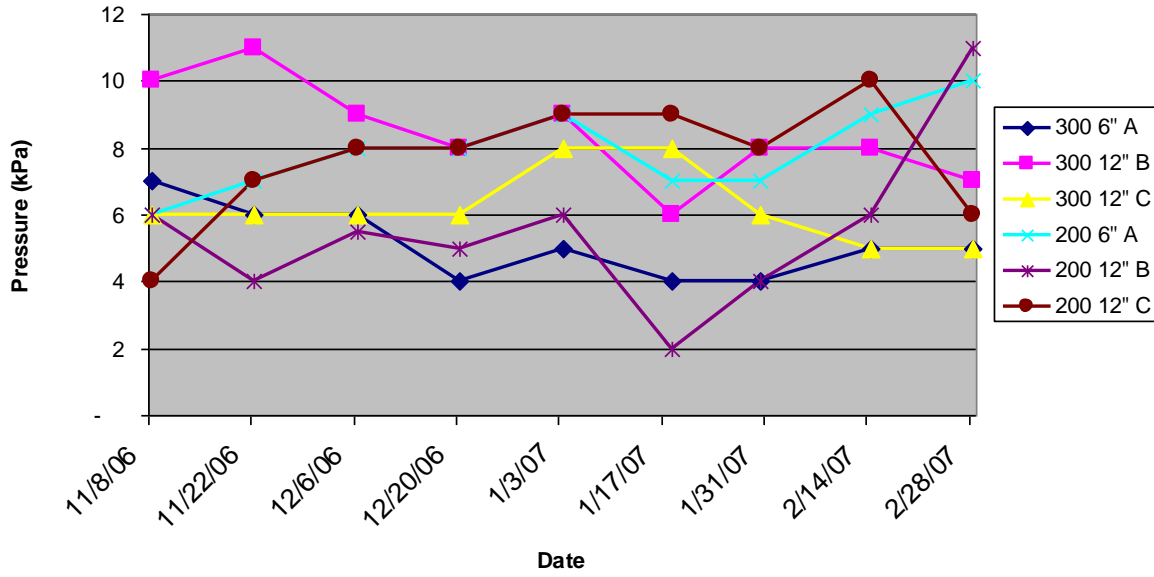
## Trial 6

### Water Tables



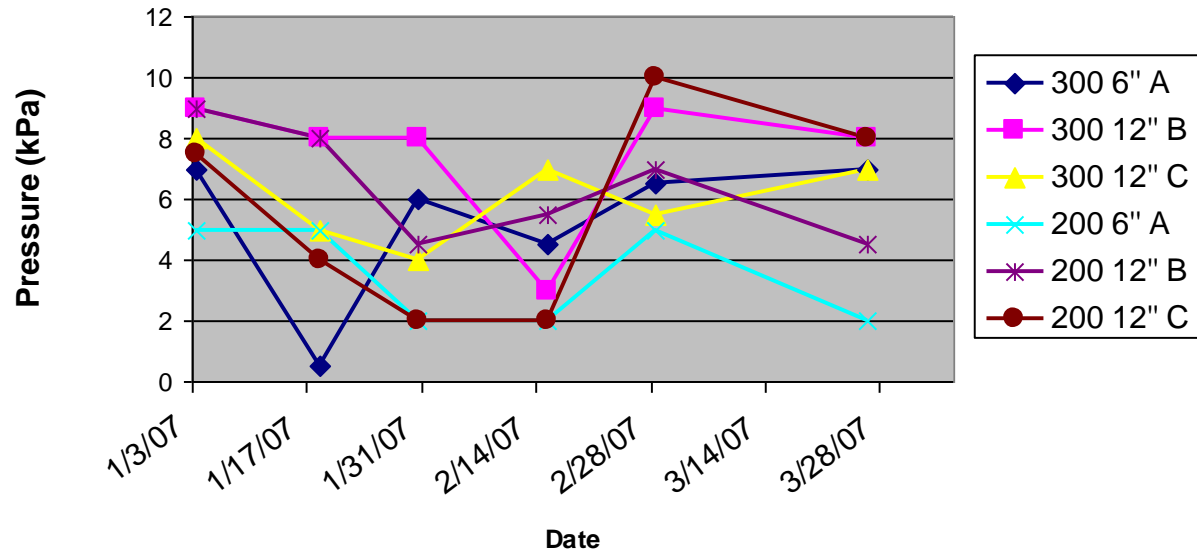
# Trial 2

## Tensiometer



# Trial 6

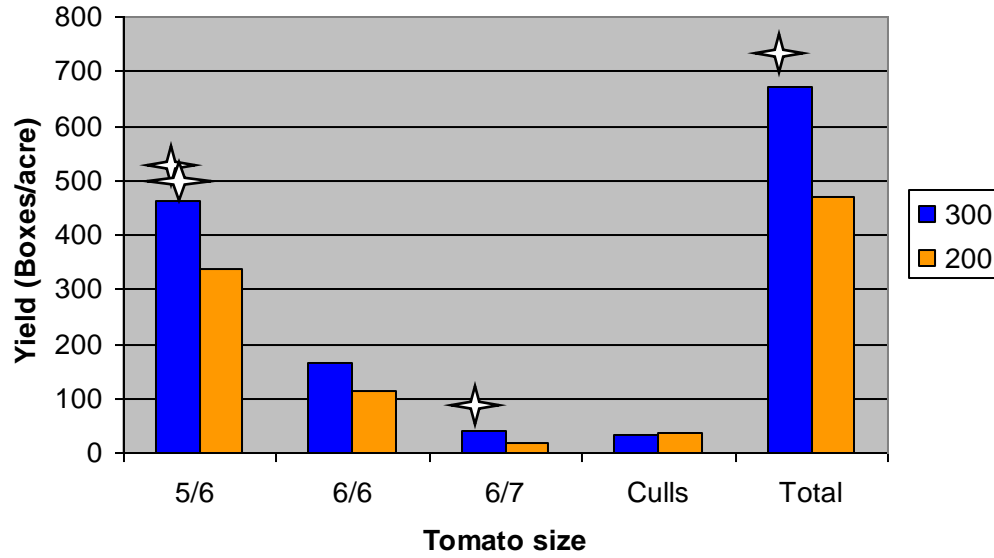
## Tensiometer





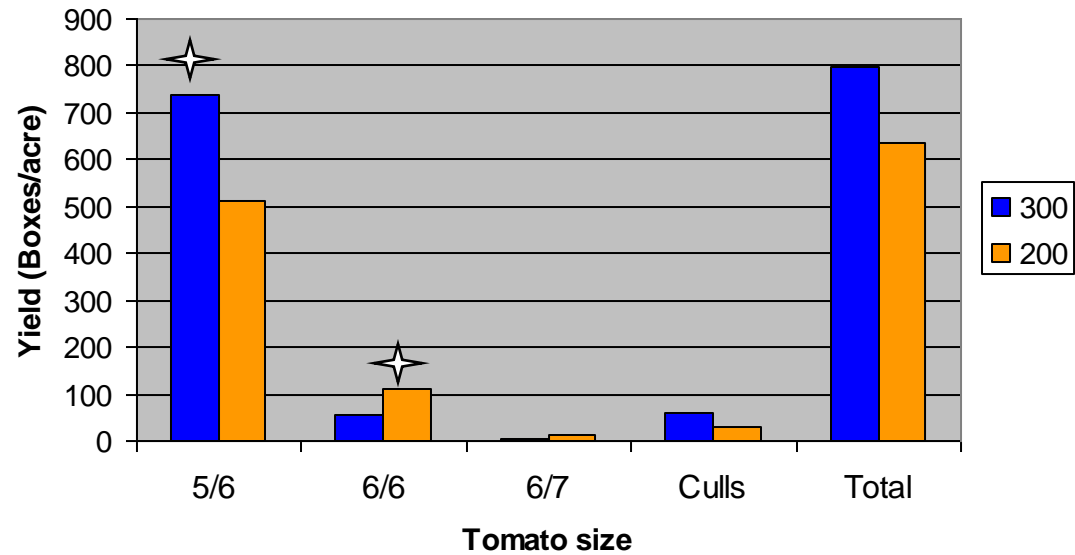
### First Harvest (January 18, 2007)

#### Trial 2



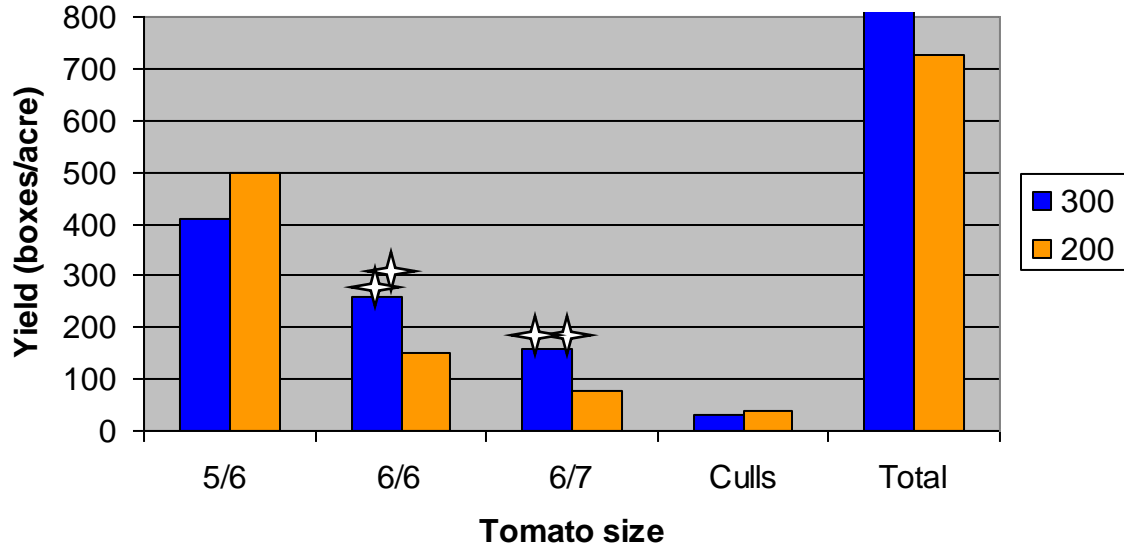
### First Harvest (March 6, 2007)

#### Trial 6



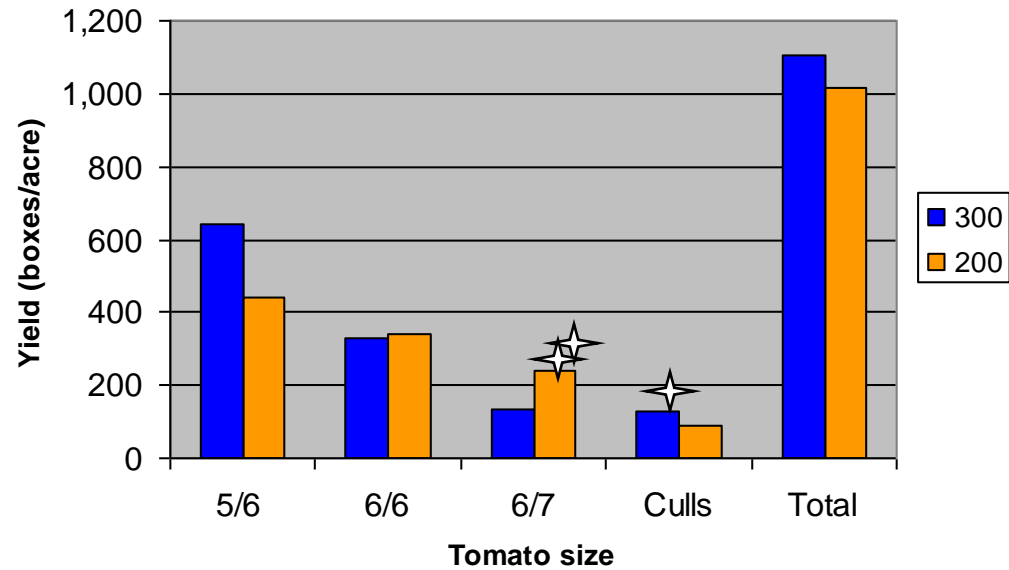
## Trial 2

Second Harvest (February 8, 2007)

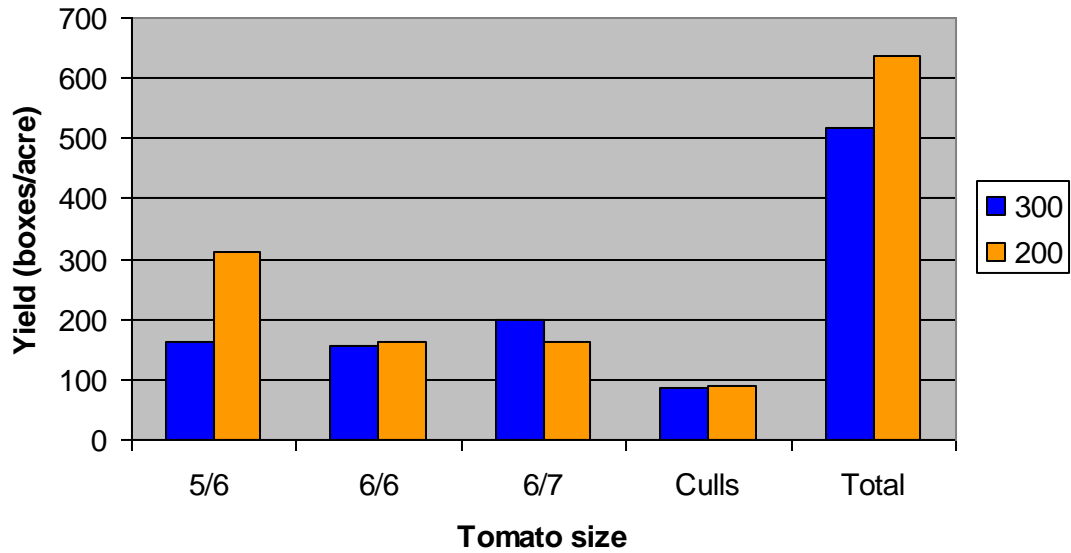


## Trial 6

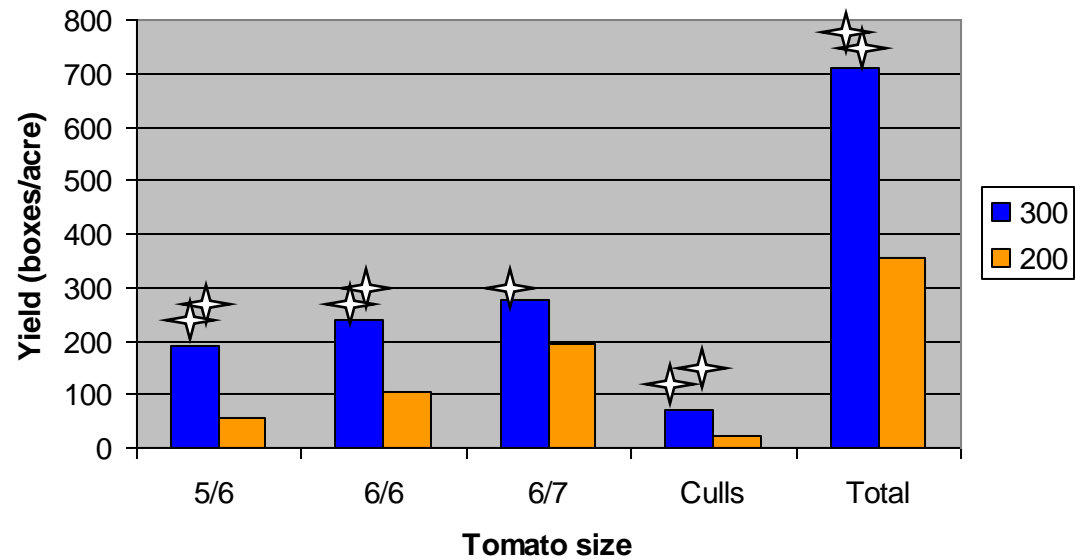
Second Harvest (March 26, 2007)



## Trial 2 Third Harvest (March 1, 2007)

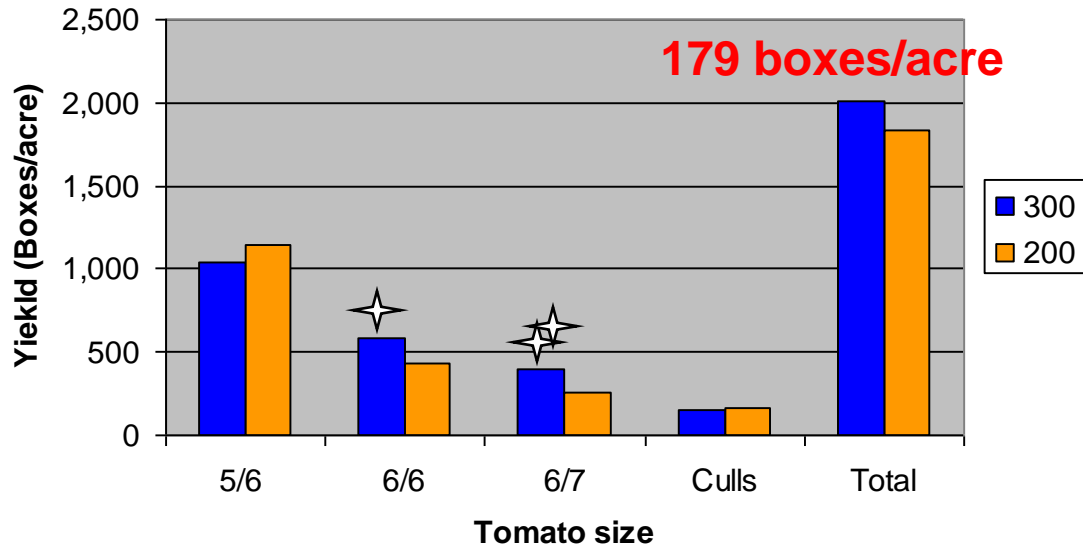


## Trial 6 Third Harvest (April 11, 2007)



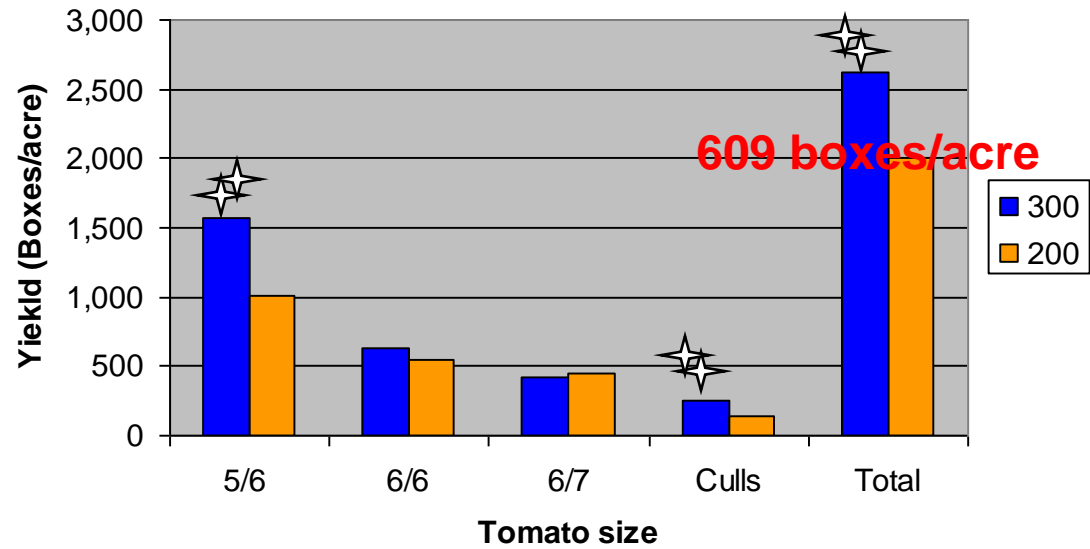
### Total Harvest

## Trial 2



### Total Harvest

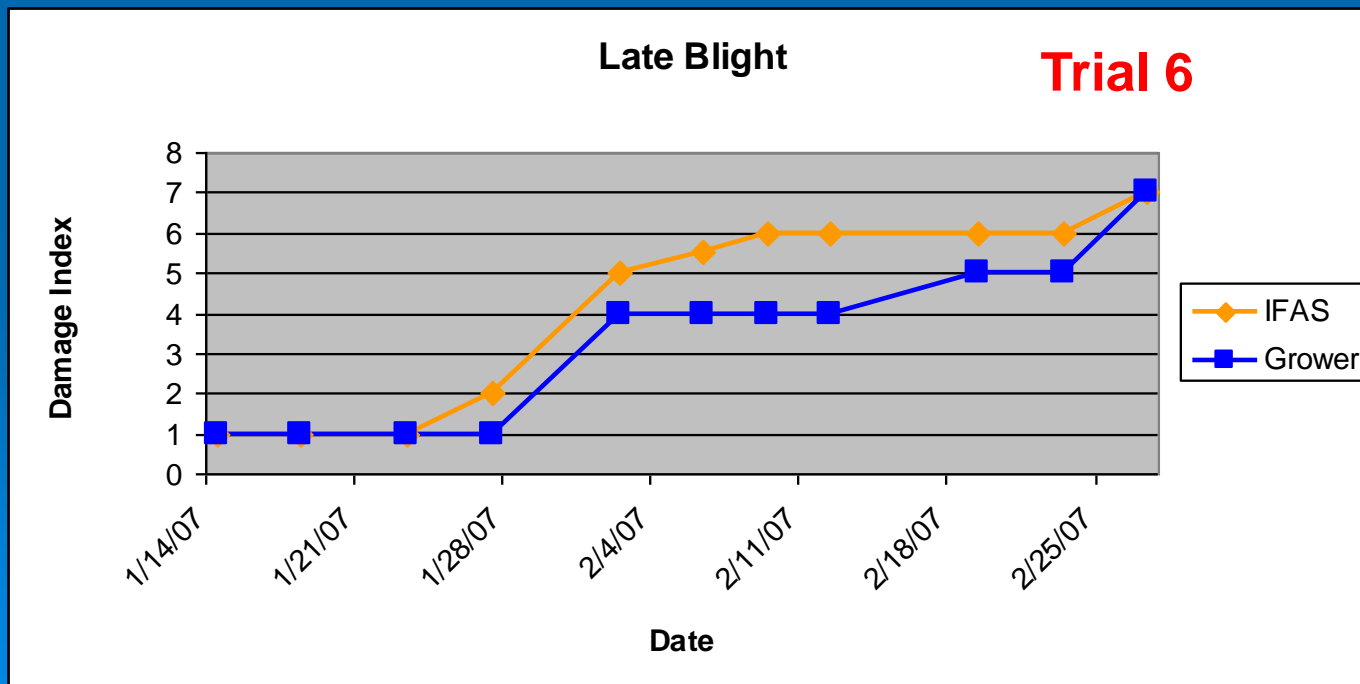
## Trial 6







|               |        |         |
|---------------|--------|---------|
| Foliar damage | 1 to 5 |         |
| Fruit Damage  | 6      | 5-20%   |
|               | 7      | 20-50%  |
|               | 8      | 50-100% |





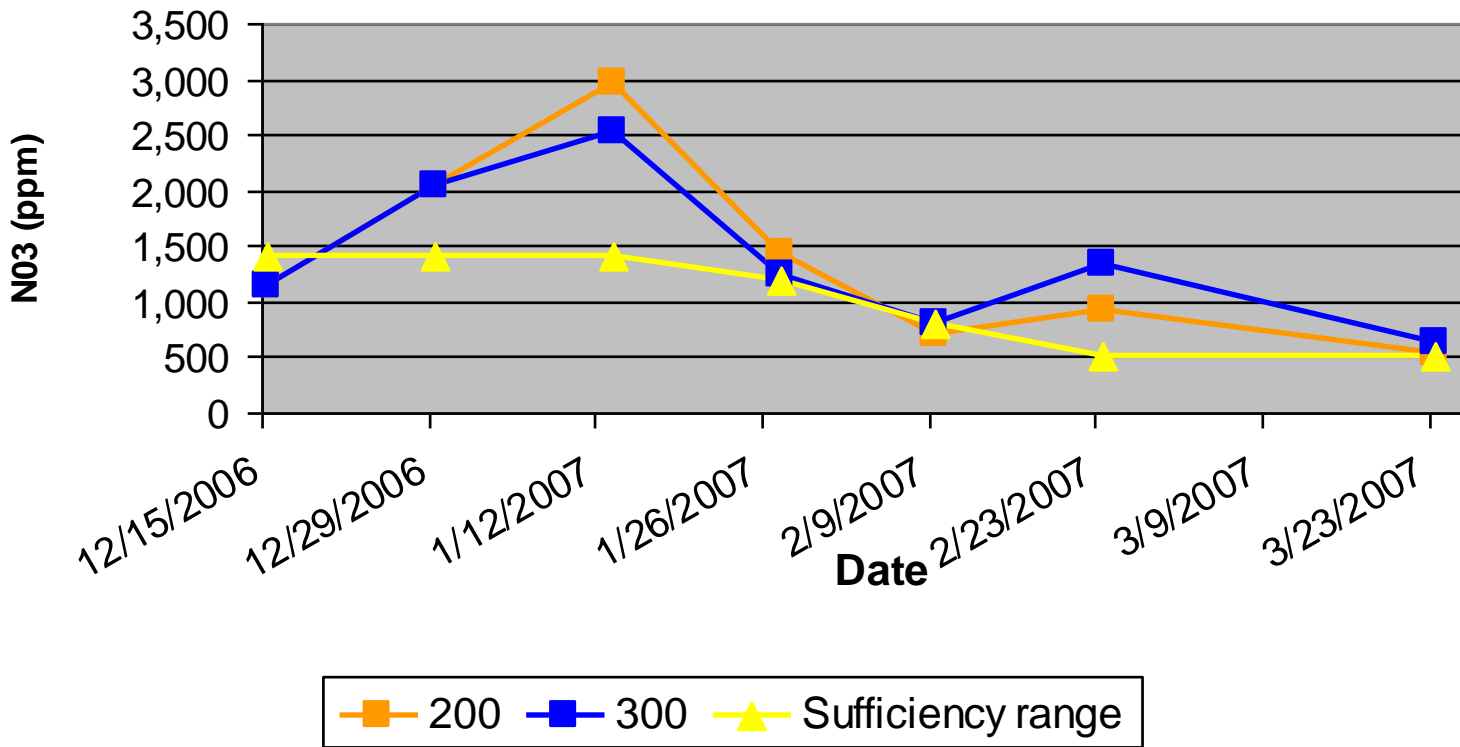
**Trial 7**  
**Seepage Irrigation**  
**Winter, 2006**  
**5.5 acres**  
**200 vs 300 lb N/acre**



# Field History

|                                |                       |
|--------------------------------|-----------------------|
| <b>Experimental Design</b>     | CRD (3 Reps)          |
| <b>Irrigation</b>              | Seepage               |
| <b>Plot size</b>               | 0.9 acres             |
| <b>Experiment size</b>         | 5.5 acres             |
| <b>Plant Date</b>              | Nov 23, 2006 (Winter) |
| <b>Cell Size</b>               | 242                   |
| <b>Fumigation</b>              | M.B                   |
| <b>Linear ft per acre</b>      | 7,260                 |
| <b>Plant population</b>        | 17,424                |
| <b>Bed Height</b>              | 9 in                  |
| <b>Plant Spacing</b>           | 10 in x 2 rows        |
| <b>Row run</b>                 | North to South        |
| <b>Monitoring Wells</b>        | 3                     |
| <b>Planting to 5th Harvest</b> | 22 weeks              |
| <b>1st</b>                     | 5-Feb-07              |
| <b>2nd</b>                     | 23-Feb-07             |
| <b>3rd</b>                     | 9-Mar-07              |
| <b>4th</b>                     | 23-Mar-07             |
| <b>5th</b>                     | 13-Apr-07             |
| <b>6th</b>                     | 30-Apr-07             |

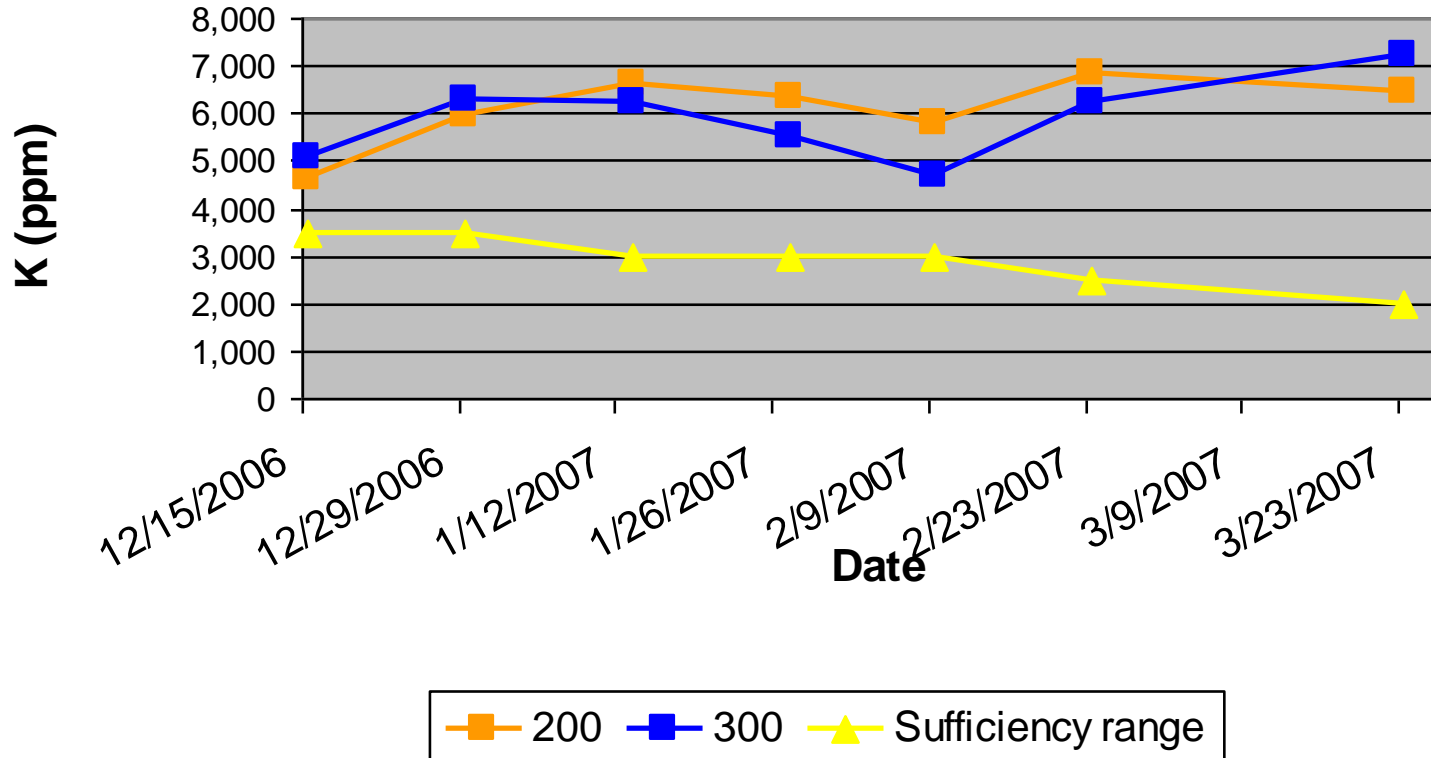
## Nitrogen Sap



| N Rates<br>(Lb/acre)  | Nitrogen (%) |          |         |         |                      |
|-----------------------|--------------|----------|---------|---------|----------------------|
|                       | 12/15/06     | 12/29/06 | 1/13/07 | 1/27/07 | 2/9/07               |
|                       | FB           | FOF      | FHG     | FHG     | 1 <sup>st</sup> Harv |
| <b>300</b>            | 7.0          | 5.7      | 5.3     | 5.1     | 4.6                  |
| <b>200</b>            | 6.7          | 6.1      | 5.9     | 5.0     | 4.6                  |
| <b>Adequate range</b> | 4.0-5.0      | 3.0-5.0  | 2.9-4.0 | 2.9-4.0 | 2.5-3.0              |

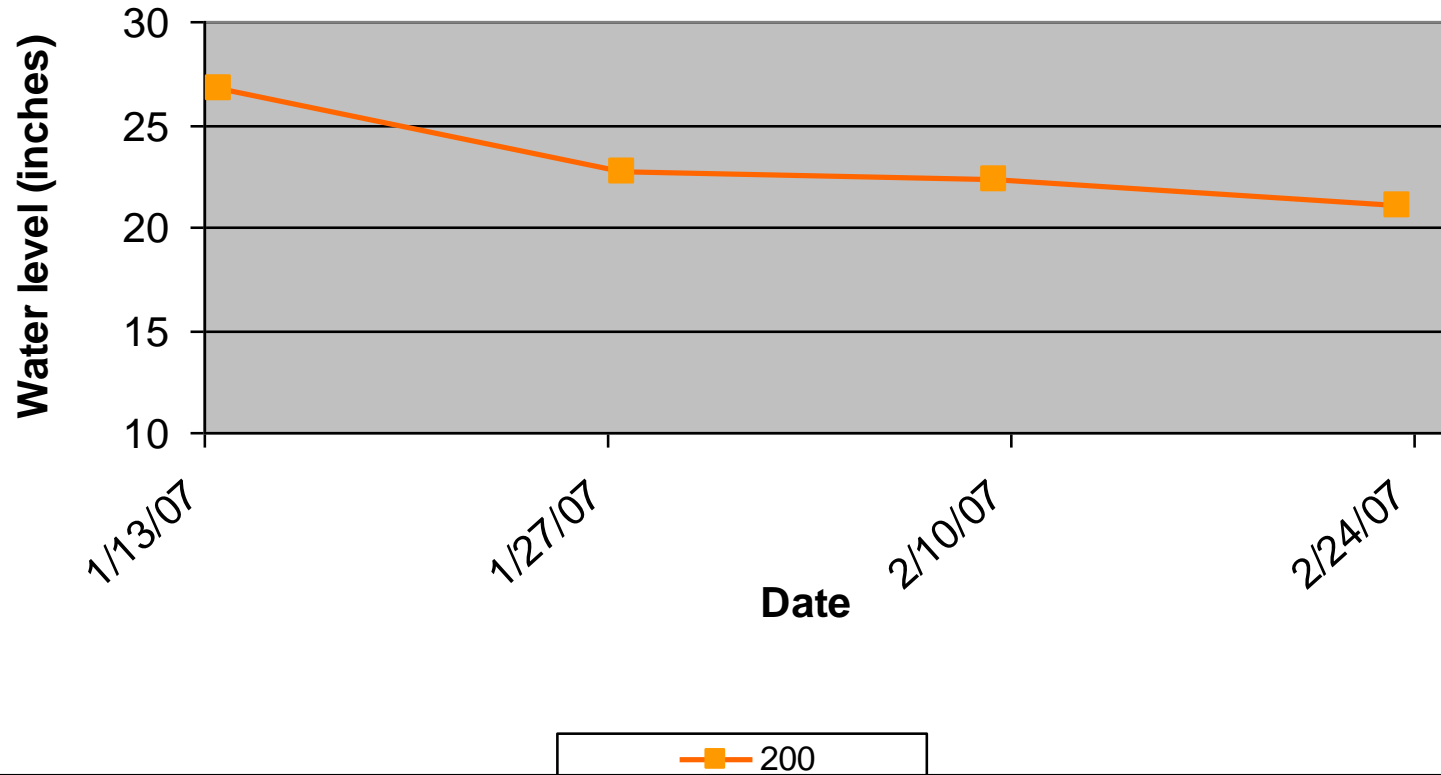


## Potassium Sap

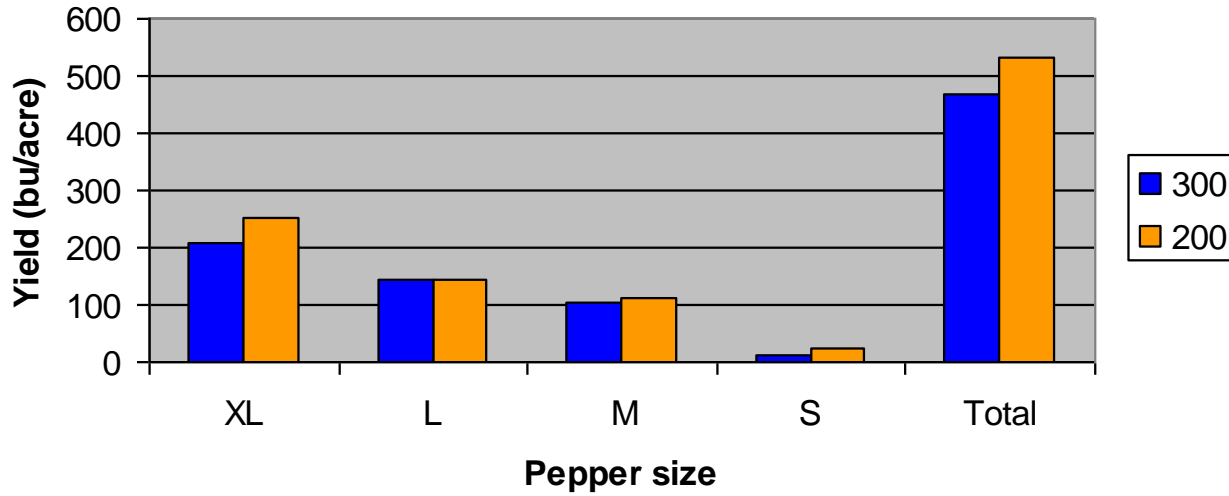


| N Rates<br>(Lb/acre)  | Potassium (%) |          |         |         |                      |
|-----------------------|---------------|----------|---------|---------|----------------------|
|                       | 12/15/06      | 12/29/06 | 1/13/07 | 1/27/07 | 2/9/07               |
|                       | FB            | FOF      | FHG     | FHG     | 1 <sup>st</sup> Harv |
| <b>300</b>            | 4.2           | 4.5      | 5.0     | 2.9     | 3.1                  |
| <b>200</b>            | 4.0           | 5.6      | 4.1     | 4.1     | 4.6                  |
| <b>Adequate range</b> | 5.0-6.0       | 2.5-5.0  | 2.5-4.0 | 2.5-4.0 | 2.0-3.0              |

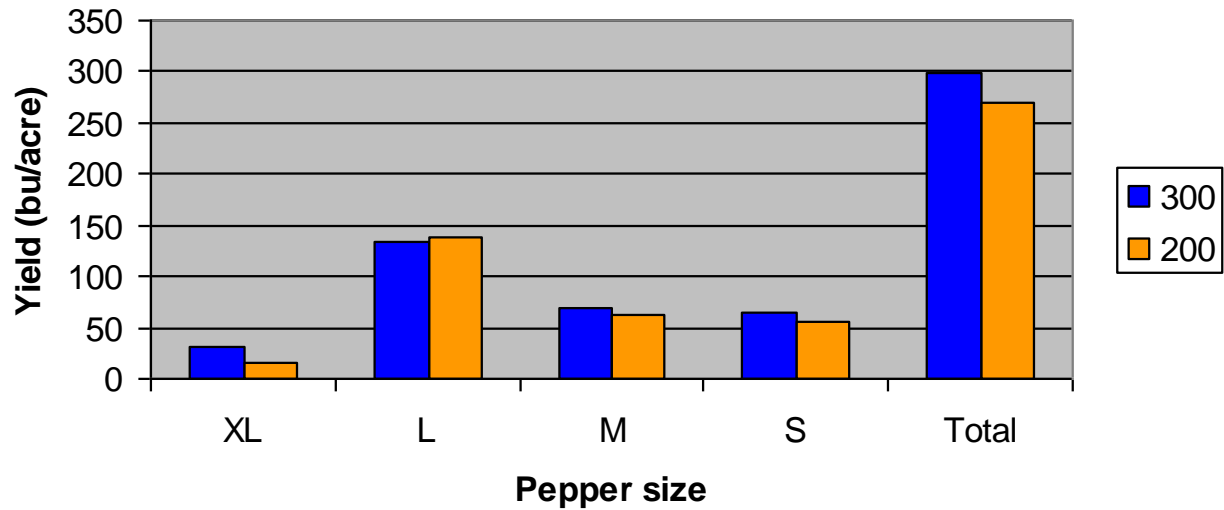
# Water Tables



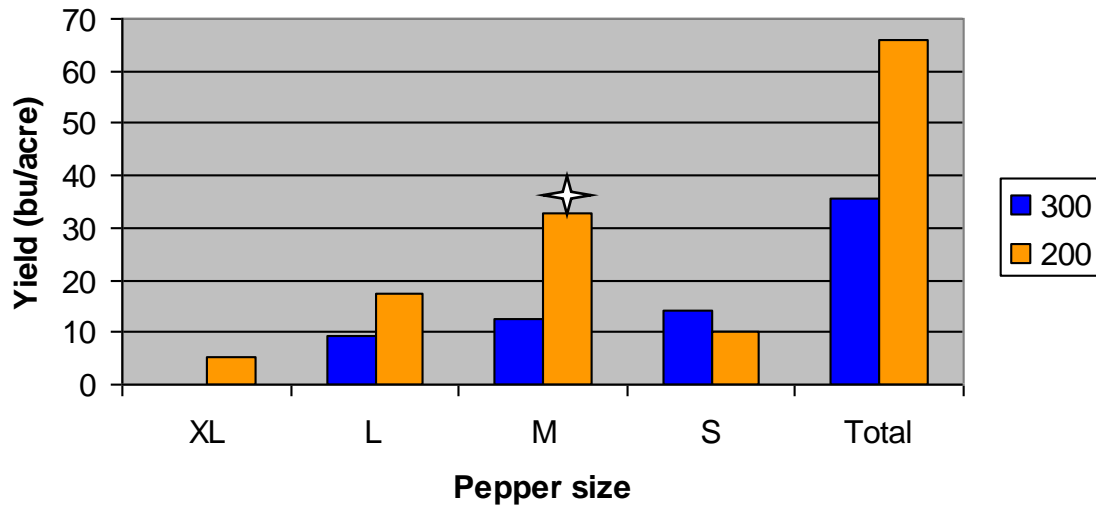
### First Harvest (February 5, 2007)



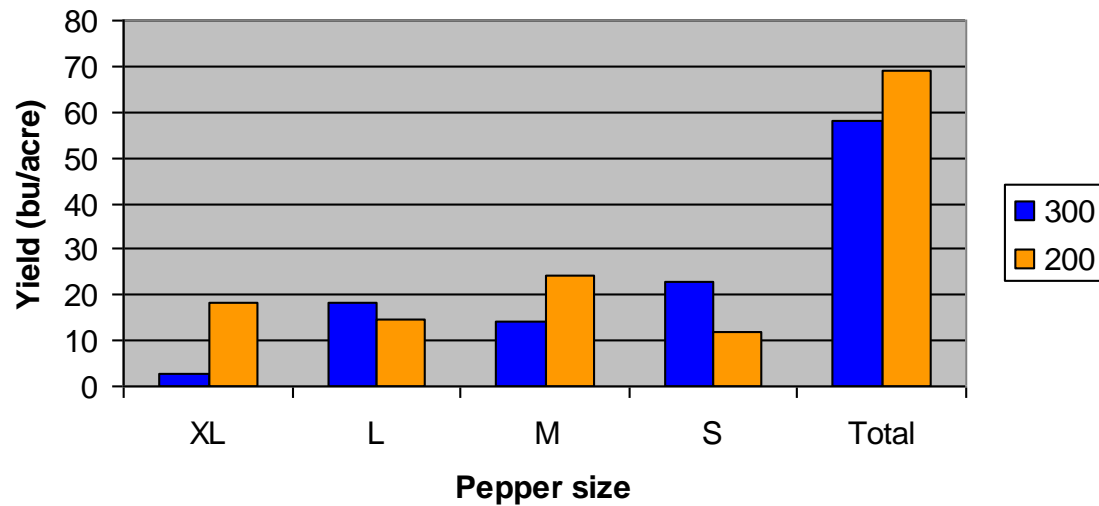
### Second Harvest (February 23, 2007)



### Third Harvest (March 9, 2007)

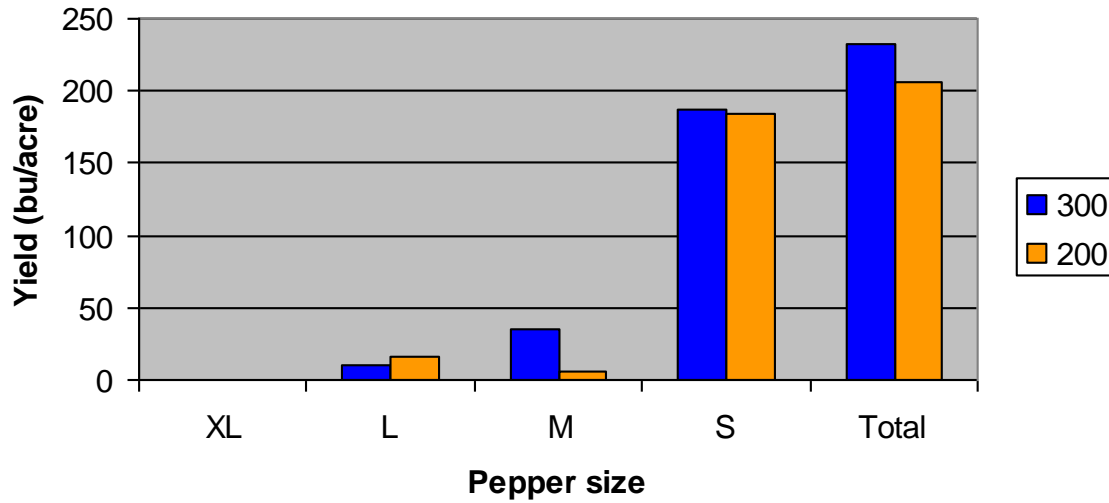


### Fourth Harvest (March 23, 2007)

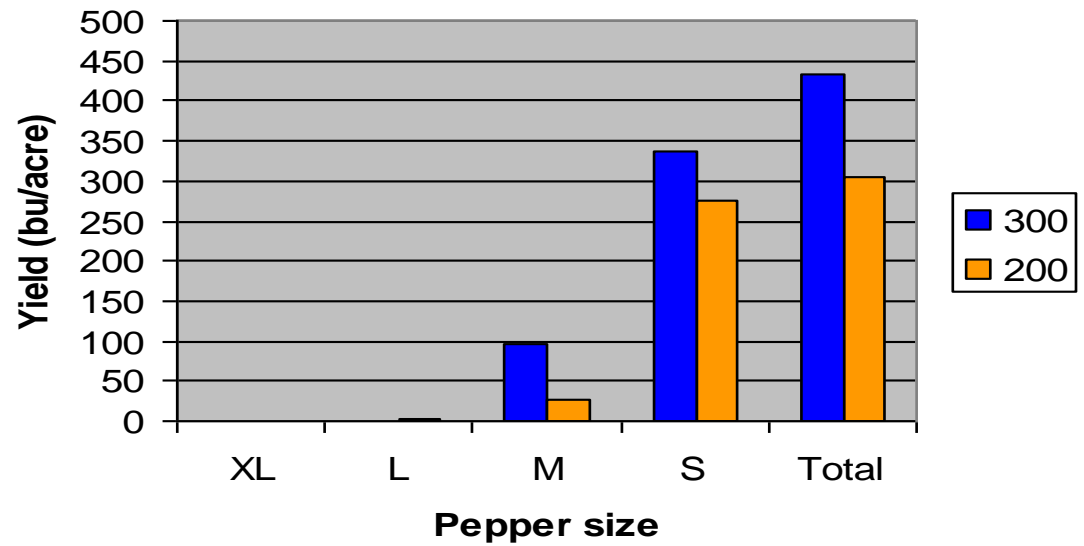




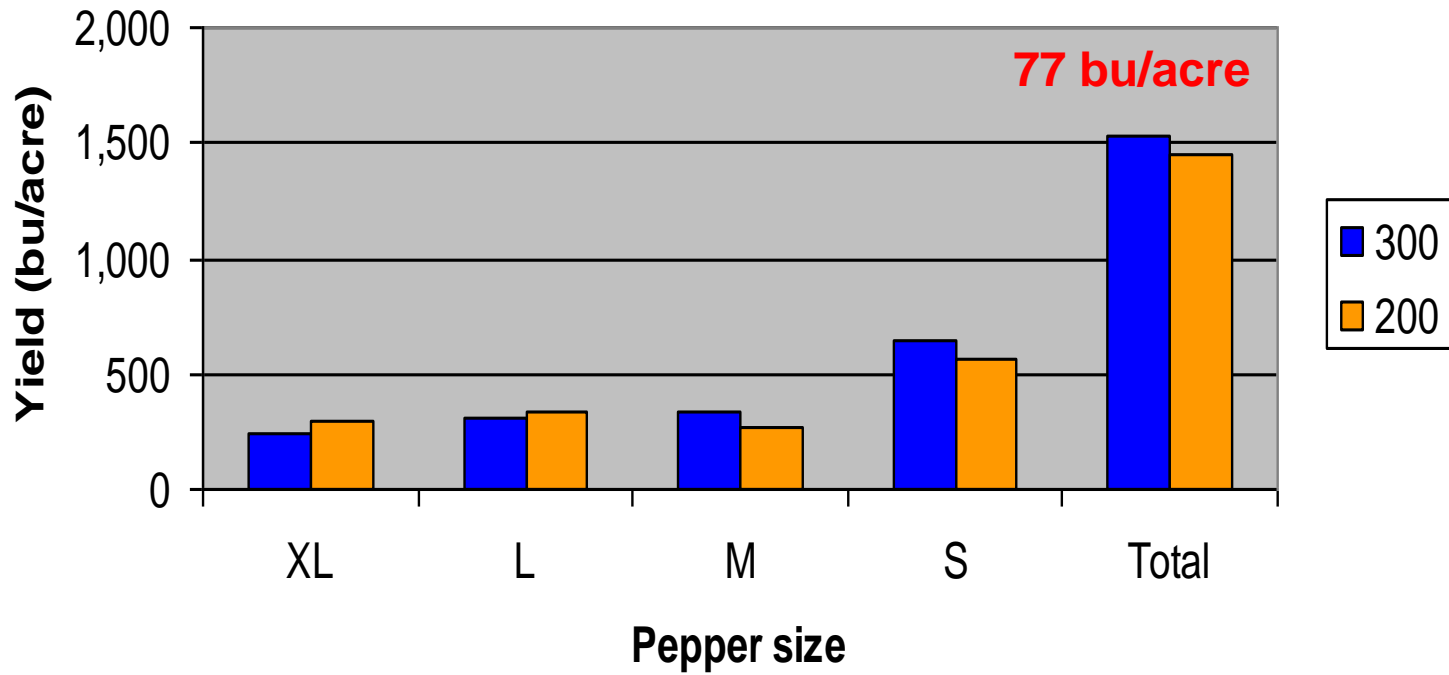
### Fifth Harvest (April 13, 2007)



### Sixth Harvest (April 30, 2007)



## Total Harvest



# Spring Experiments

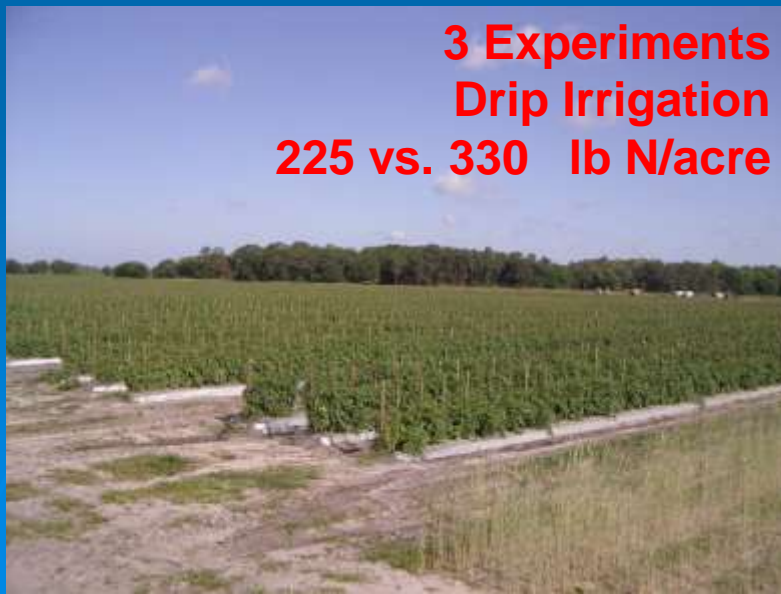
**Seep Irrigation  
200 vs. 260 lb N/acre**



**Seep Irrigation  
20 to 420 lb N/acre**



**3 Experiments  
Drip Irrigation  
225 vs. 330 lb N/acre**







# March 21 , 30 days after transplant



20



60



120



180



240



300



360



420



Grower



# April 2 , 45 days after transplant



20

60

120

180

240

300

360

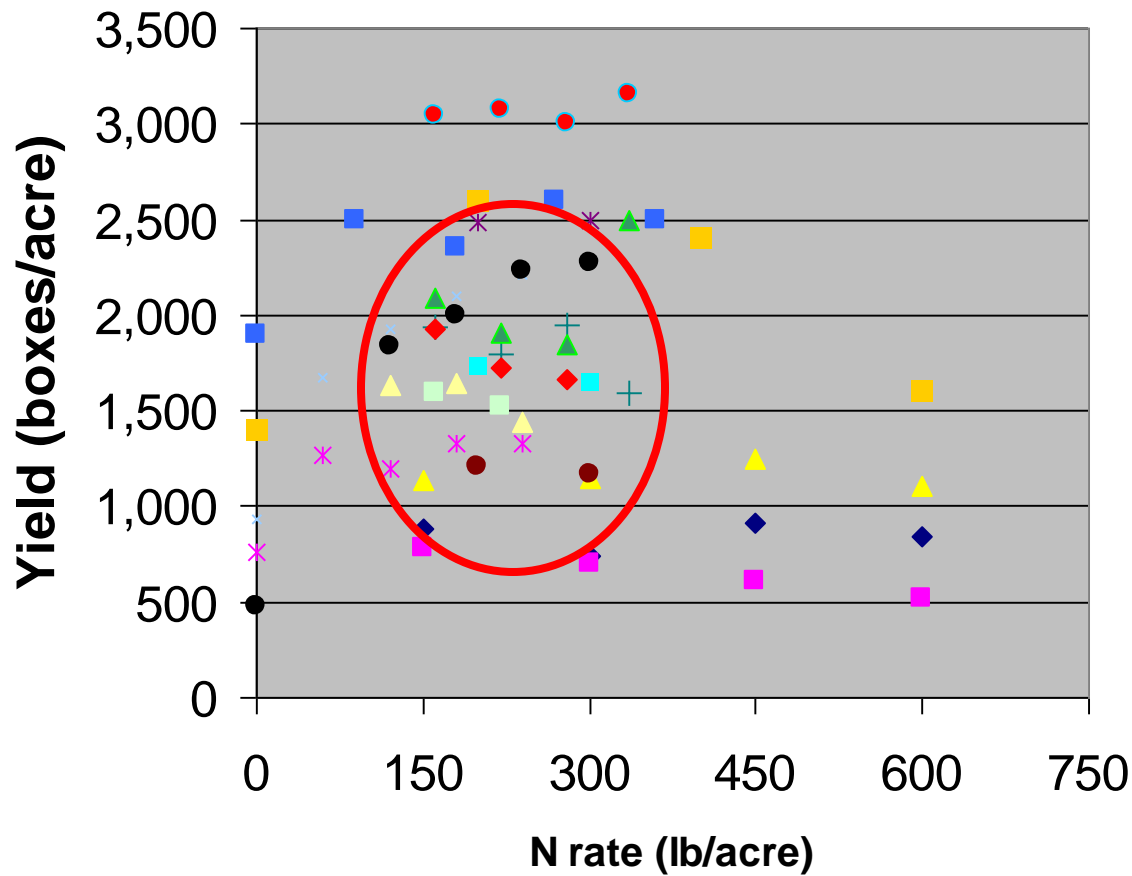
420

Grower



# April 14, 60 days after transplant

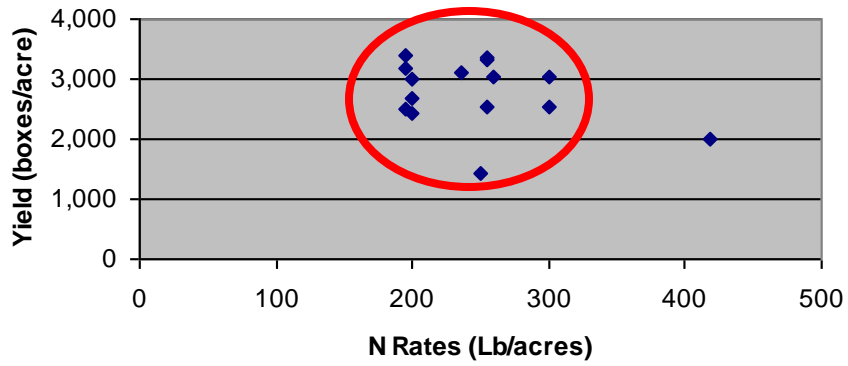




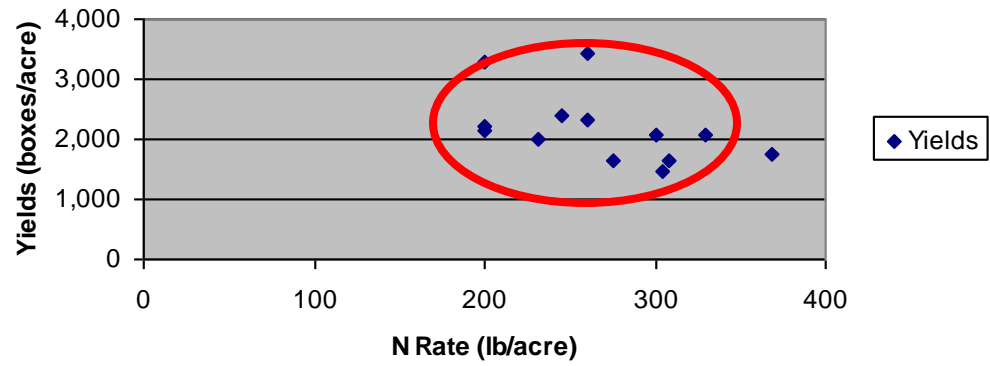
- ◆ Csizinszky et al., 1998
- Csizinszky et al., 1988
- ▲ Csizinszky et al., 1988
- Clark et al., 1989
- × Clark et al., 1989
- Clark et al., 1989
- + Hochmuth et al., 1989
- ▲ Hochmuth et al., 1989
- Hochmuth et al., 1989
- ◆ Schuler et al., 1989
- Schuler et al., 1991
- ▲ Schuler et al., 1992
- × Rhoads et al., 1996
- × Rhoads et al., 1996
- Loscascio et al., 1996
- Rhoads et al., 1999
- Rhoads et al., 1999



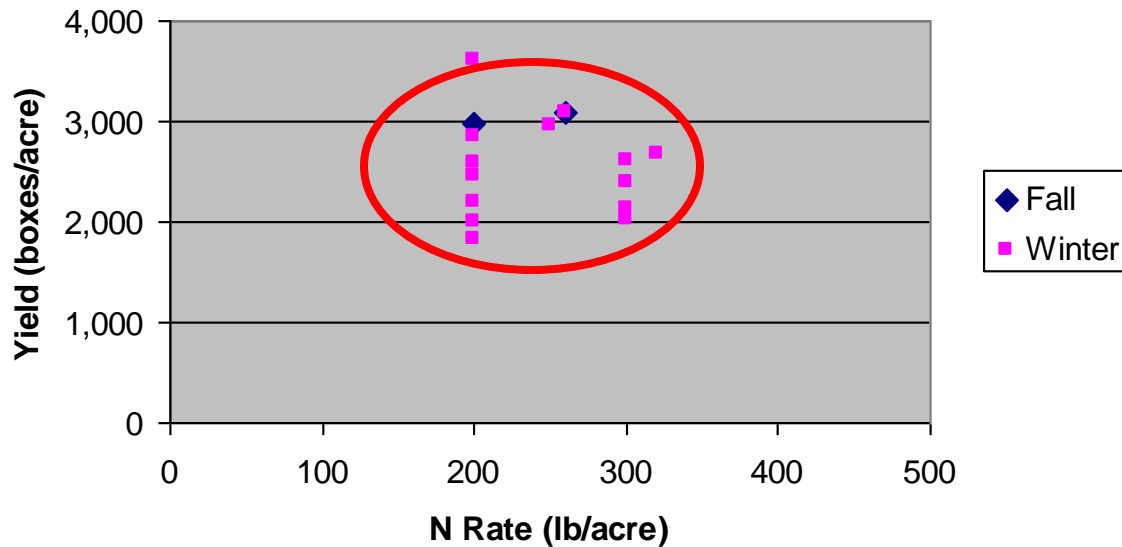
### Totamo Yields Season 2004-05



### Tomato Yields Season 2005-06



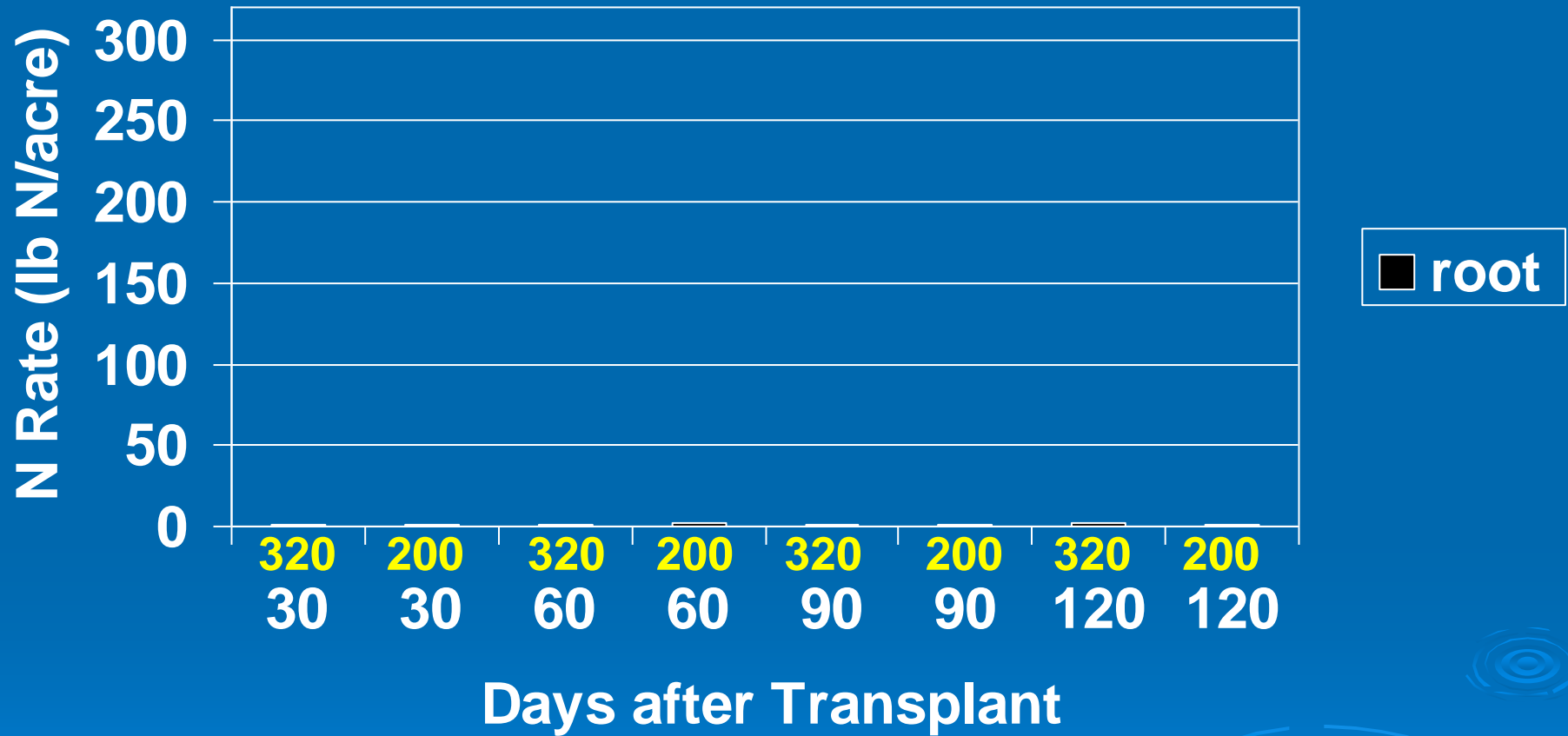
### Tomato Yield Season 2006-07



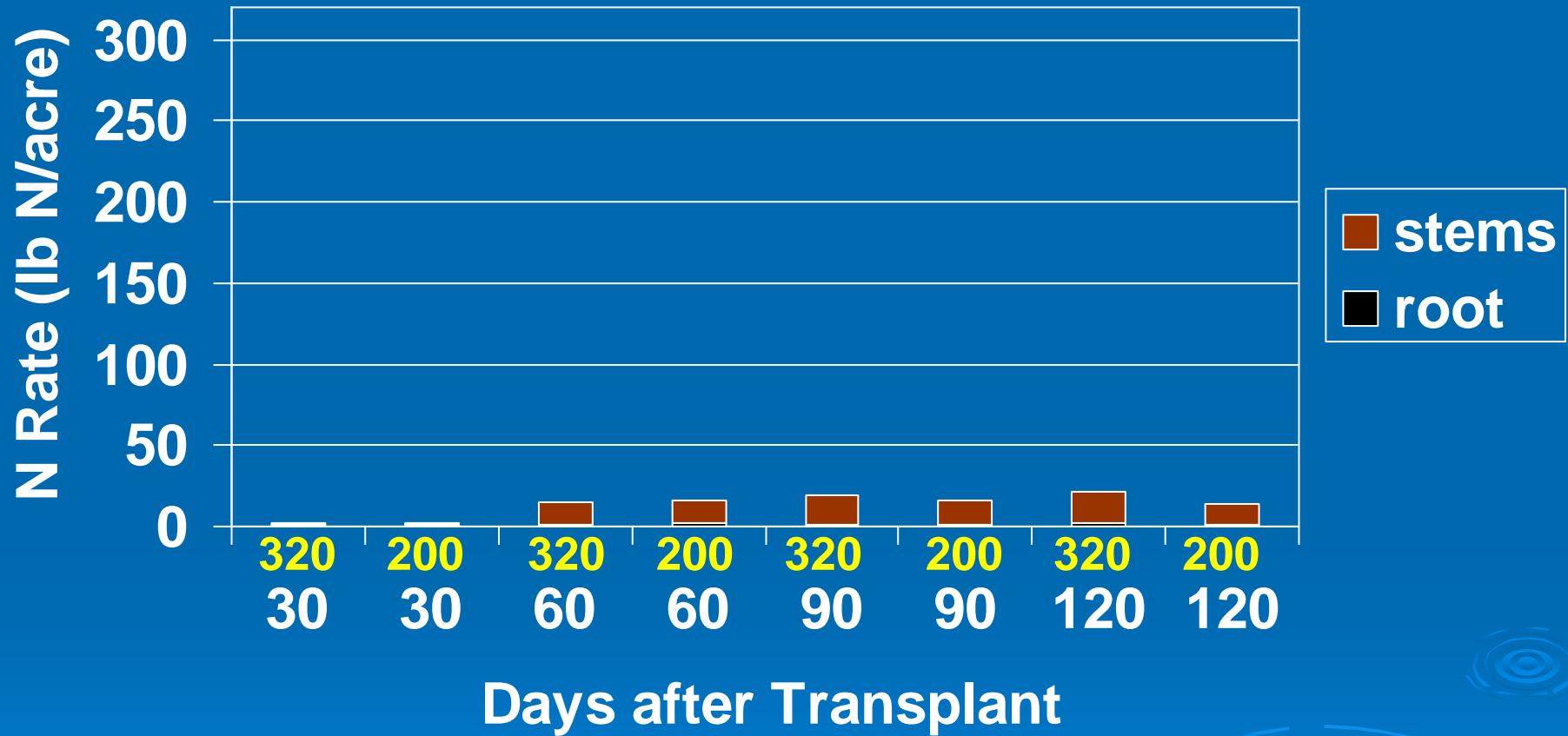
# N Budget (Season 2005-06)

|                                |                      |
|--------------------------------|----------------------|
| <b>Experimental Design</b>     | CRD                  |
| <b>Irrigation</b>              | Seepage              |
| <b>Plot size</b>               | 0.83 acres           |
| <b>Experiment Size</b>         | 5 acres              |
| <b>Planting Date</b>           | 4-Jan-06             |
| <b>Bed wide</b>                | M.B 200/Acre (67:33) |
| <b>Fumigation</b>              | MB                   |
| <b>Linear ft per acre</b>      | 7,260                |
| <b>Plant population</b>        | 3,346                |
| <b>Bed Height</b>              | 8 in                 |
| <b>Plant Spacing</b>           | 26 in                |
| <b>Row run</b>                 | North-south          |
| <b>Monitoring Wells</b>        | 6                    |
| <b>Planting to 3er Harvest</b> | 19                   |
| <b>1st</b>                     | 14-Apr-2006          |
| <b>2nd</b>                     | 4-May-2006           |
| <b>3rd</b>                     | 18-May-2006          |

# N Budget

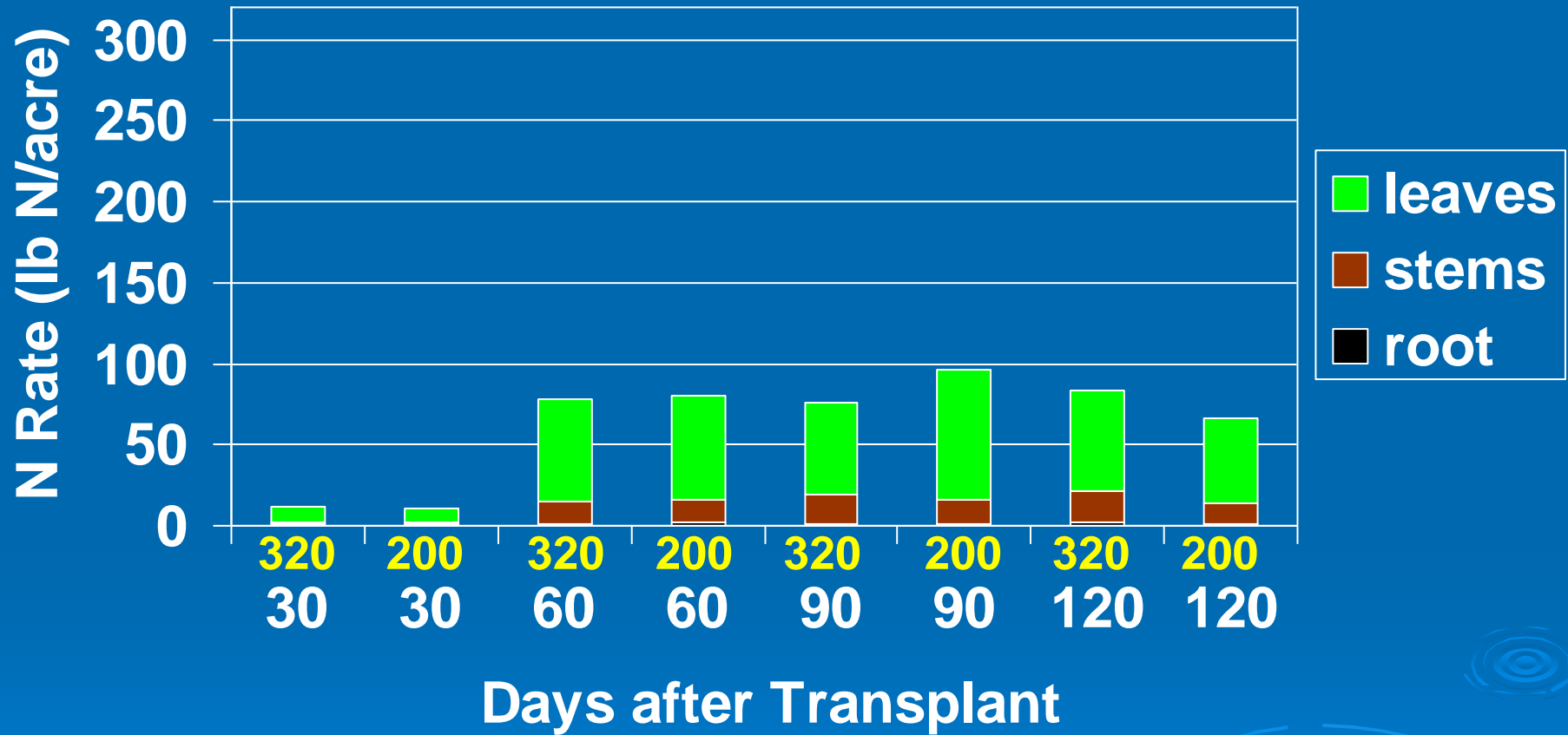


# N Budget

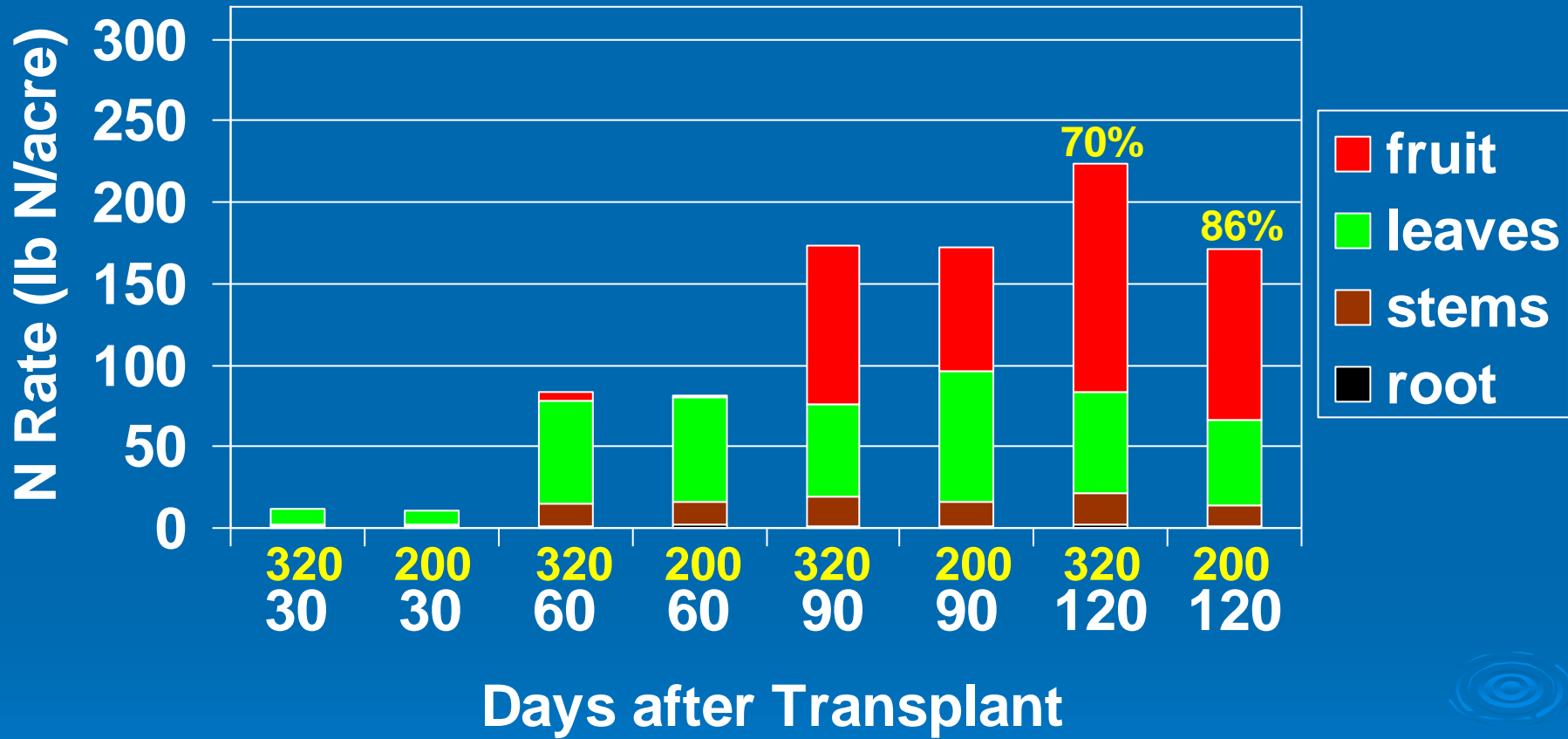




# N Budget



# N Budget



# Where do we go from here?

- **Growers and IFAS inputs:**
- **3 trial IFAS vs. Growers fall tomatoes**
- **1 split N application on fall tomatoes (wheel)**
- **2 trials multiple N rates (fall and spring)**
- **2 trials CRF fertilizer (tomato and pepper)**
- **2 trials N management for drip-irrigated tomato**
- **9 trials total**

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➤ Website:

<http://swfrec.ifas.ufl.edu/bmp/vegetable/>