

2006

Research Update Meeting 2006 - OSC Nitrogen Rate and Pruning Intensity 2006

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Nitrogen Rate and Pruning Intensity

Research sponsored and supported
by Ocean Spray Cranberries, Inc.

Grower Cooperators:

Decas Cranberry Company
Gilmore Cranberry Company



Objectives

- Evaluate interaction of N rate and pruning intensity on vine biomass and cranberry productivity
 - Develop recommendations for weed control in plantings of new varieties
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Treatments

- 4 N levels
 - 0, 50, 100, and 150 lb/A
 - 4 Pruning intensities
 - None, low, medium, and high
 - 2 sites 'Stevens'
-









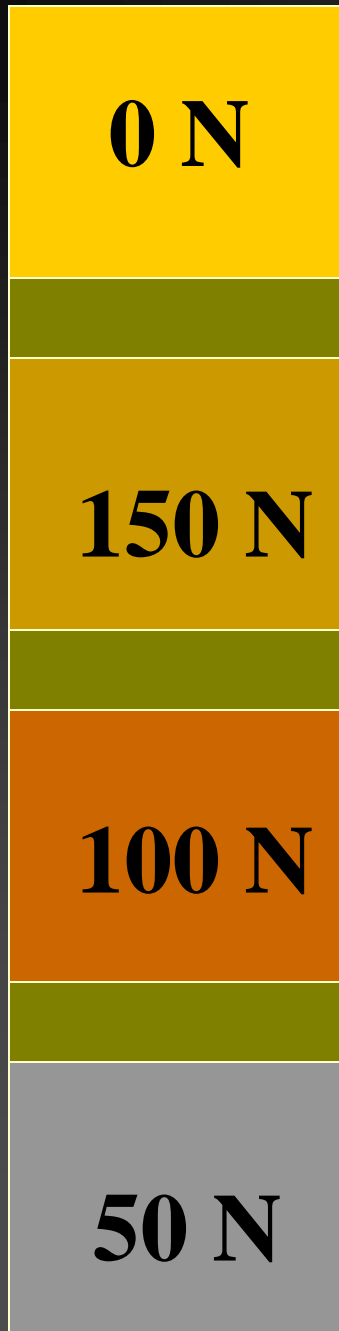




Treatments

- Spring pruning
 - Nitrogen: 4 equal doses
 - Each combination replicated 3x
 - Plots are 270 ft² or 300 ft²
 - Study initiated in 2003
-

Low Pruning



ONE REPLICATE

Pruning Intensity

LOW

HIGH

MED

NONE

0 N

50 N

150 N

50 N

150 N

100 N

50 N

0 N

100 N

150 N

0 N

100 N

50 N

0 N

100 N

150 N

CARVER SITE 2004



100 lb/N Hi Prune

CARVER SITE 2004

**150 LB/N
NO PRUNE**

**100 LB/N
LOW PRUNE**

**100 LB/N
HI PRUNE**



ROCHESTER SITE 2005



**150 LB/N
NO PRUNE**

**100 LB/N
MED PRUNE**

**0 lb/N
No Pruning**

4 inches



2004

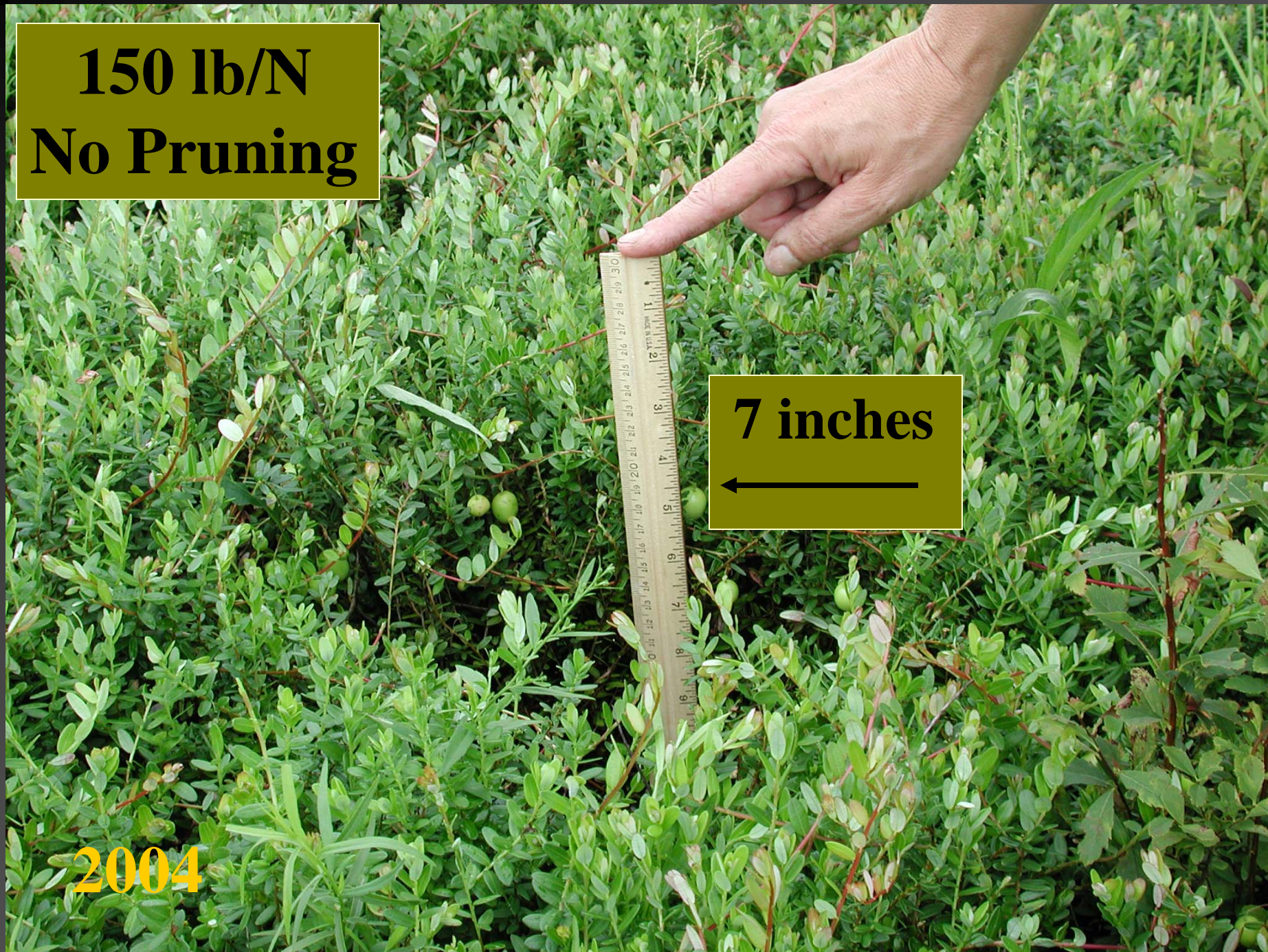


**150 lb/N
No Pruning**

7 inches



2004

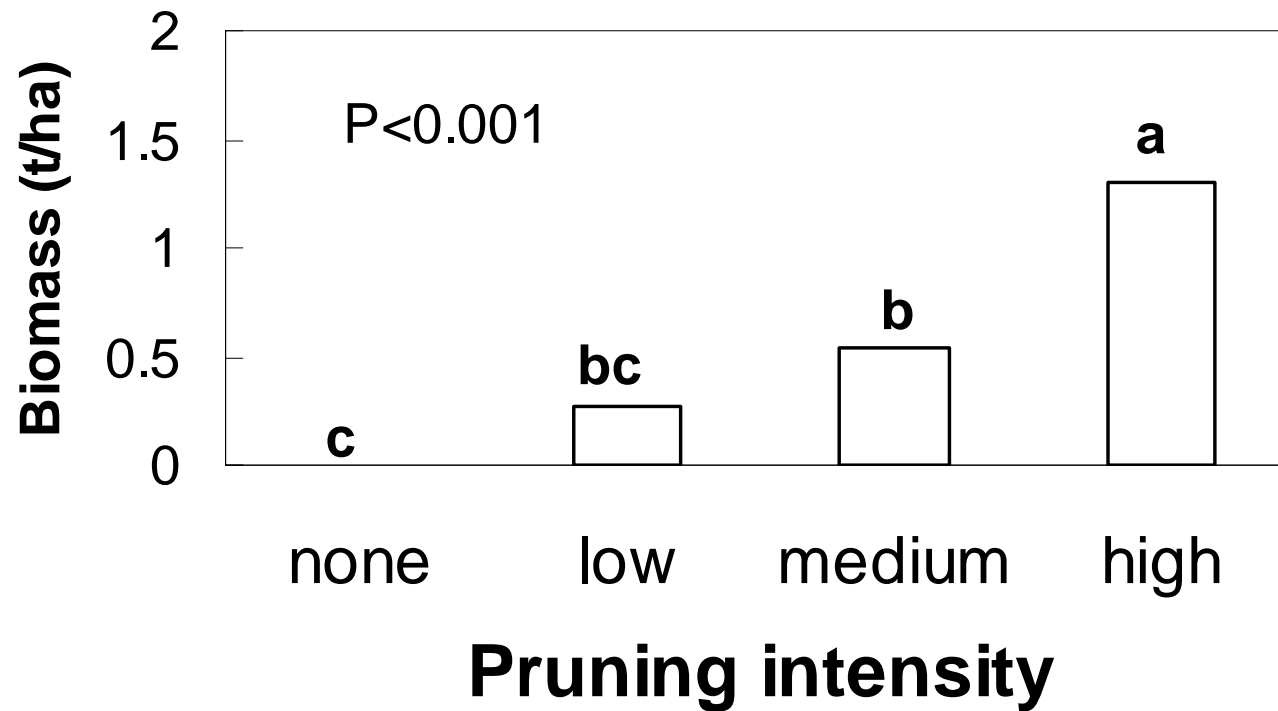


Data Collected

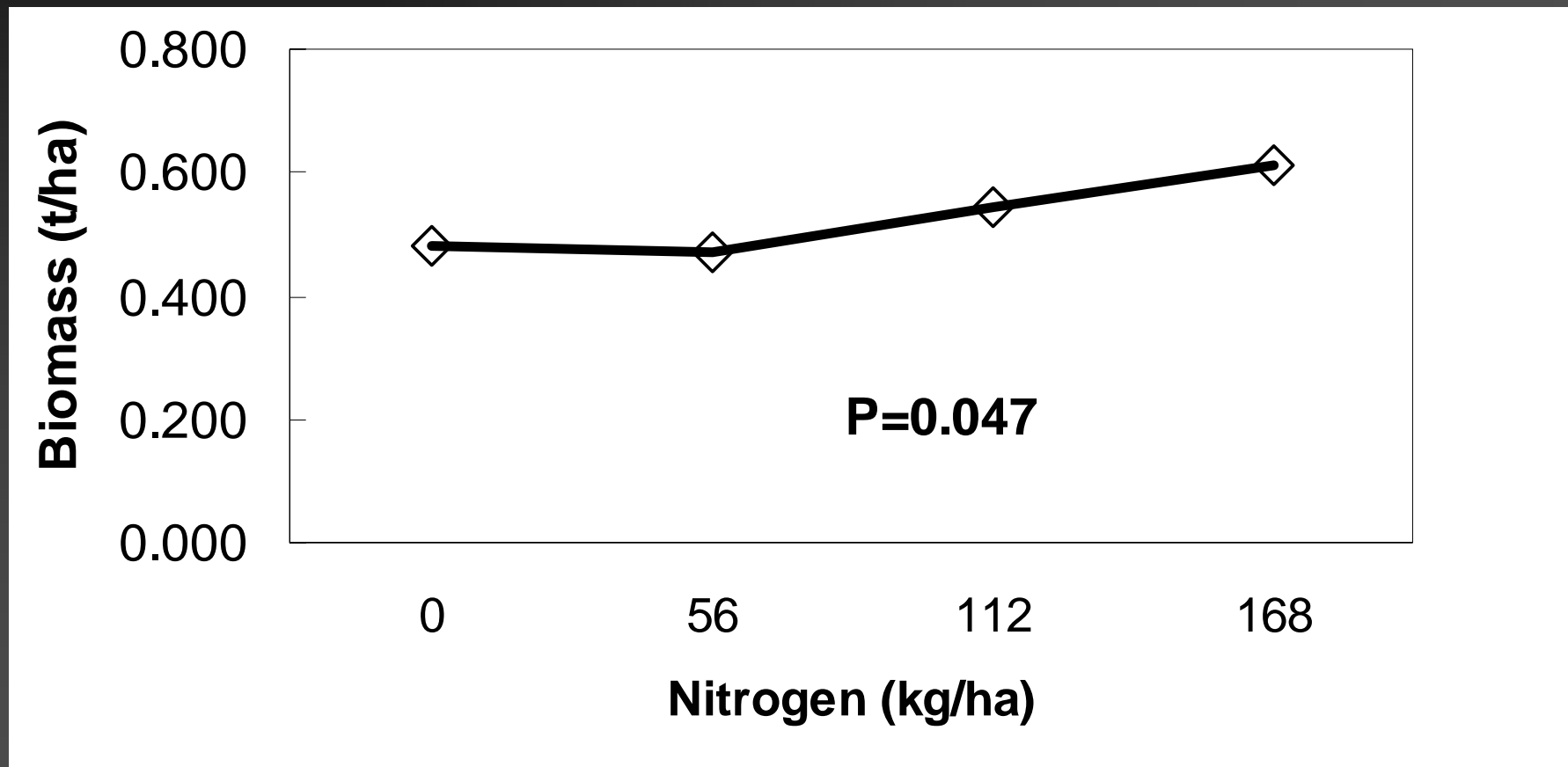
- Spring pruning weights
- Vine samples
 - Upright density evaluation
- Harvest samples



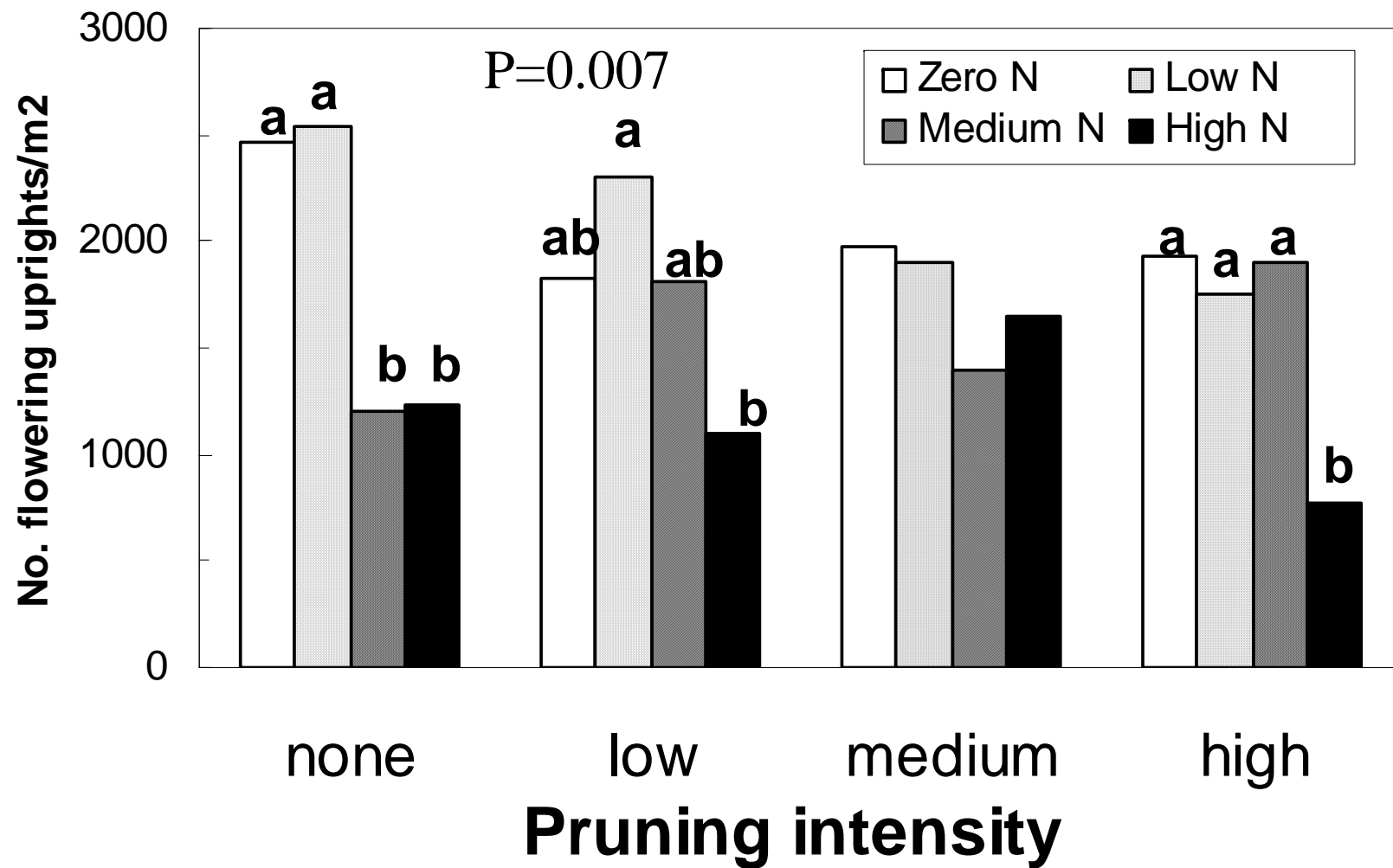
Spring Weights - Y2 across N



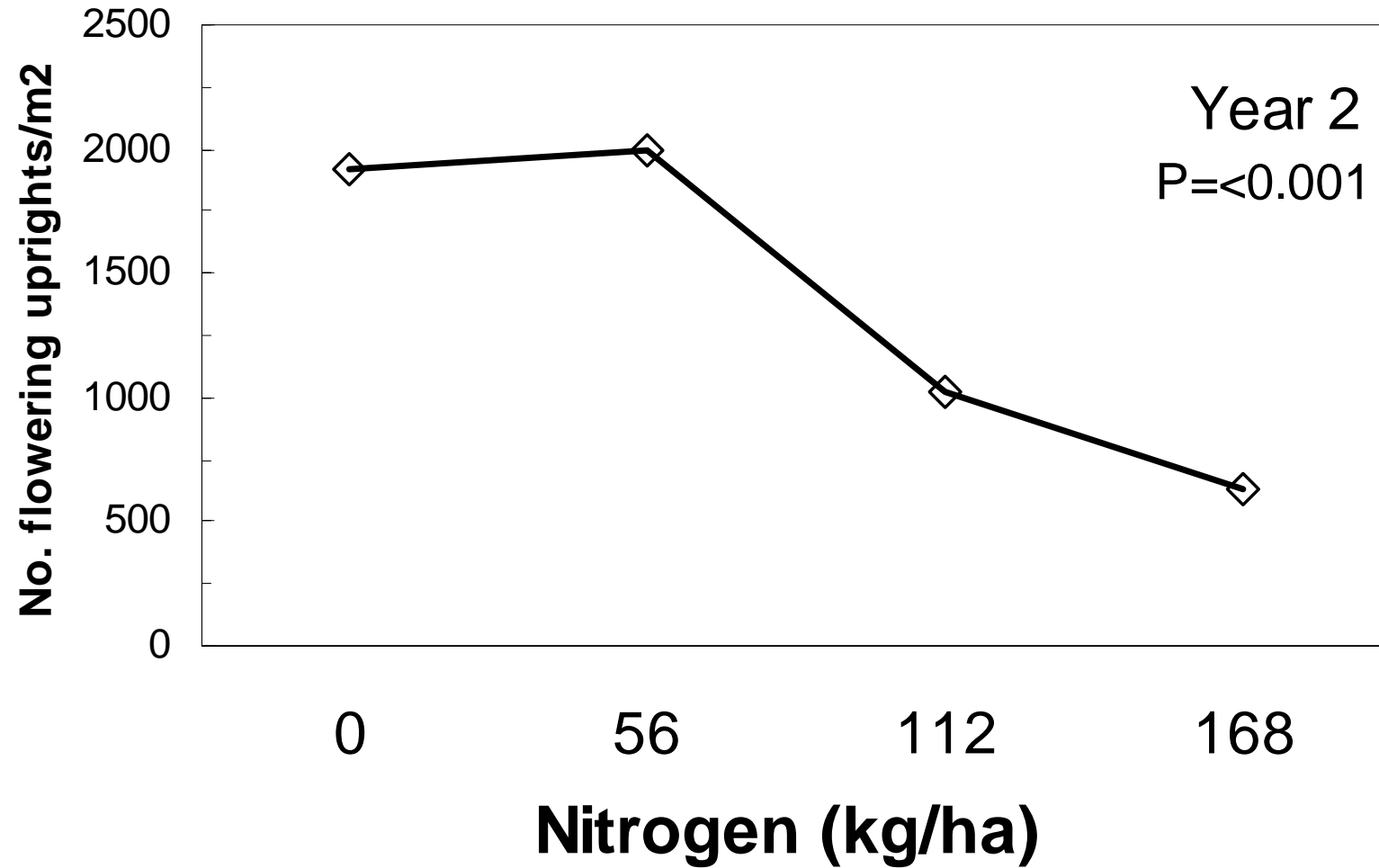
Spring Wt - Y2 across Pruning



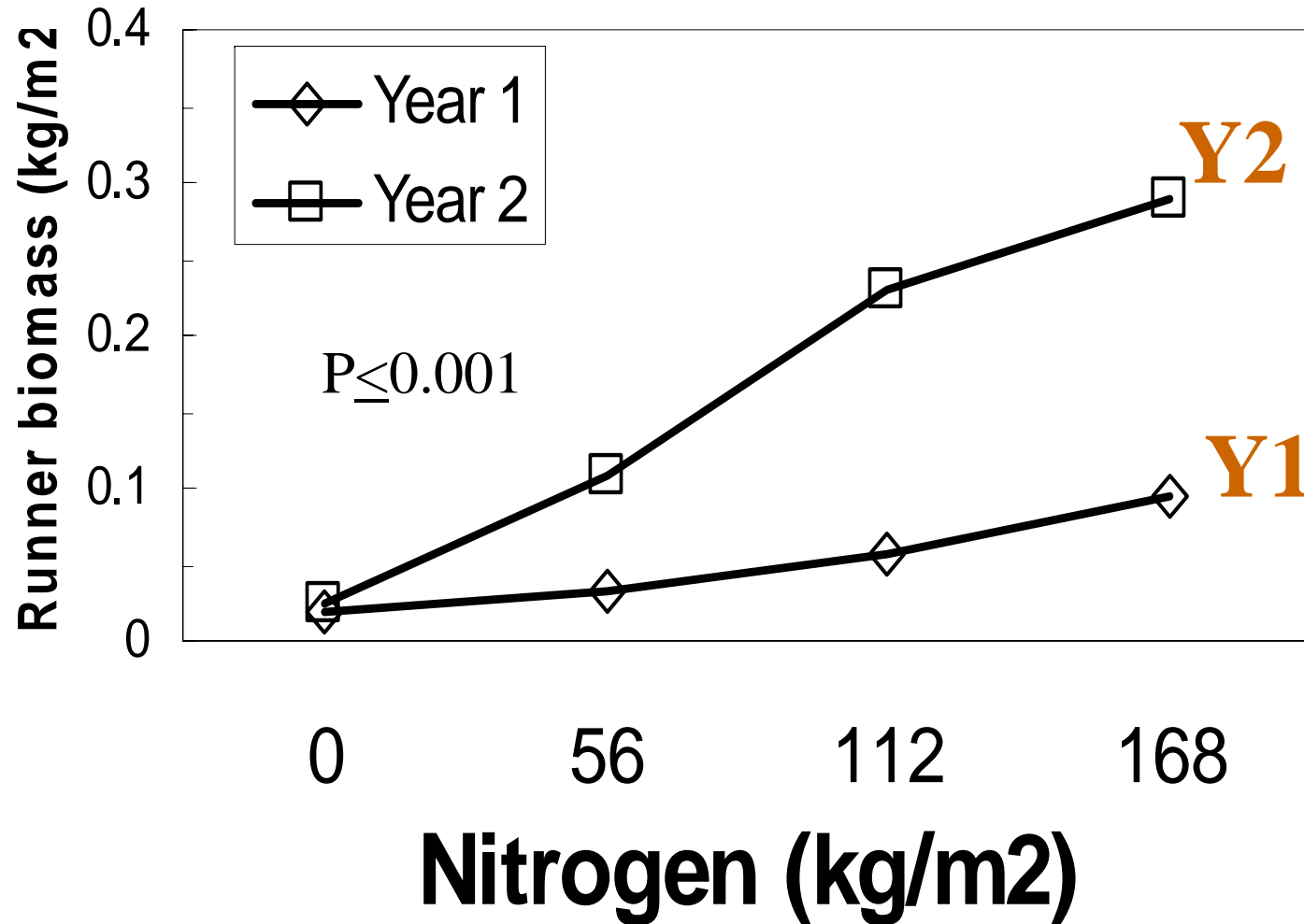
Flowering Upright Density – 2 yr



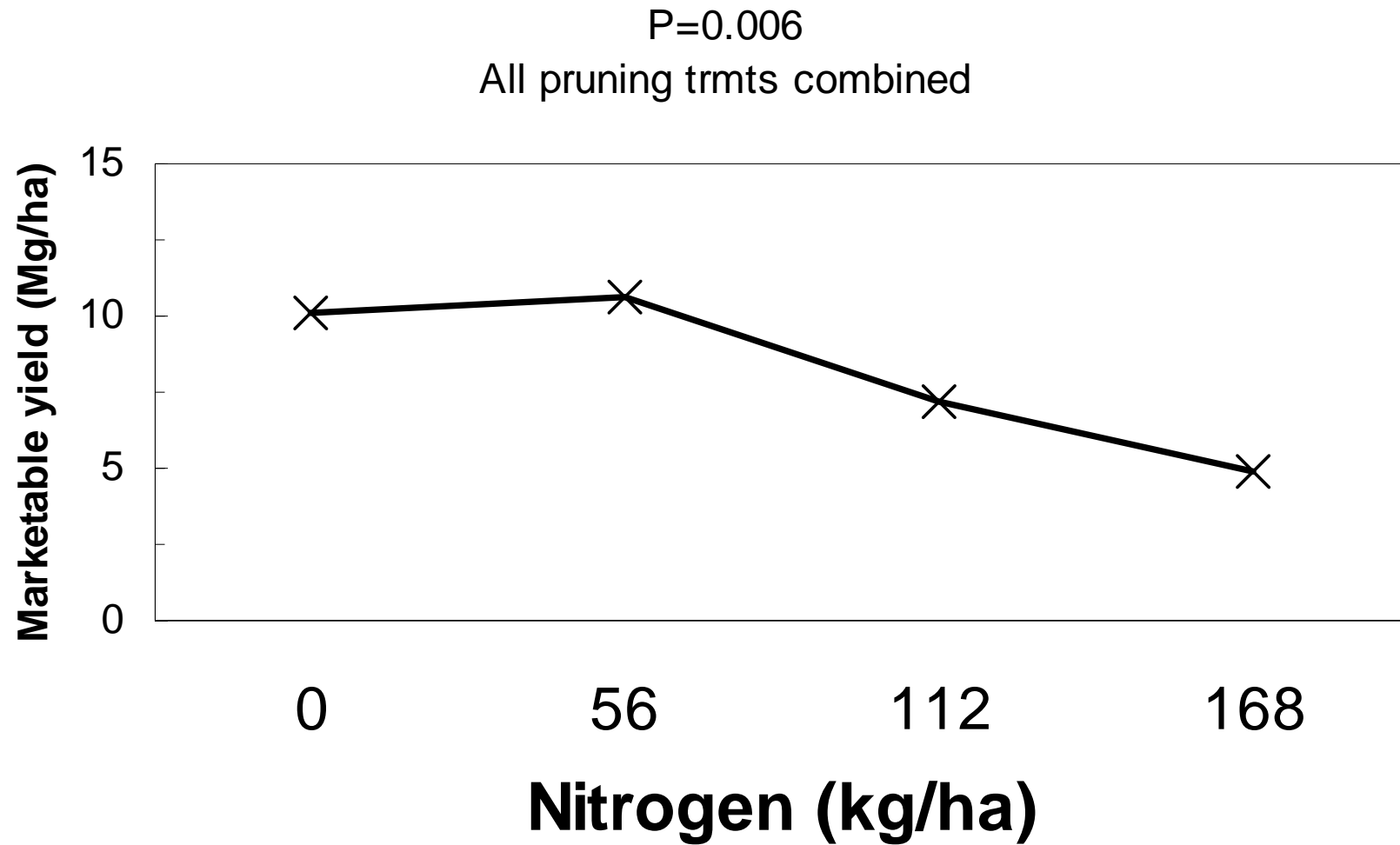
Flowering Upright Density – Y2



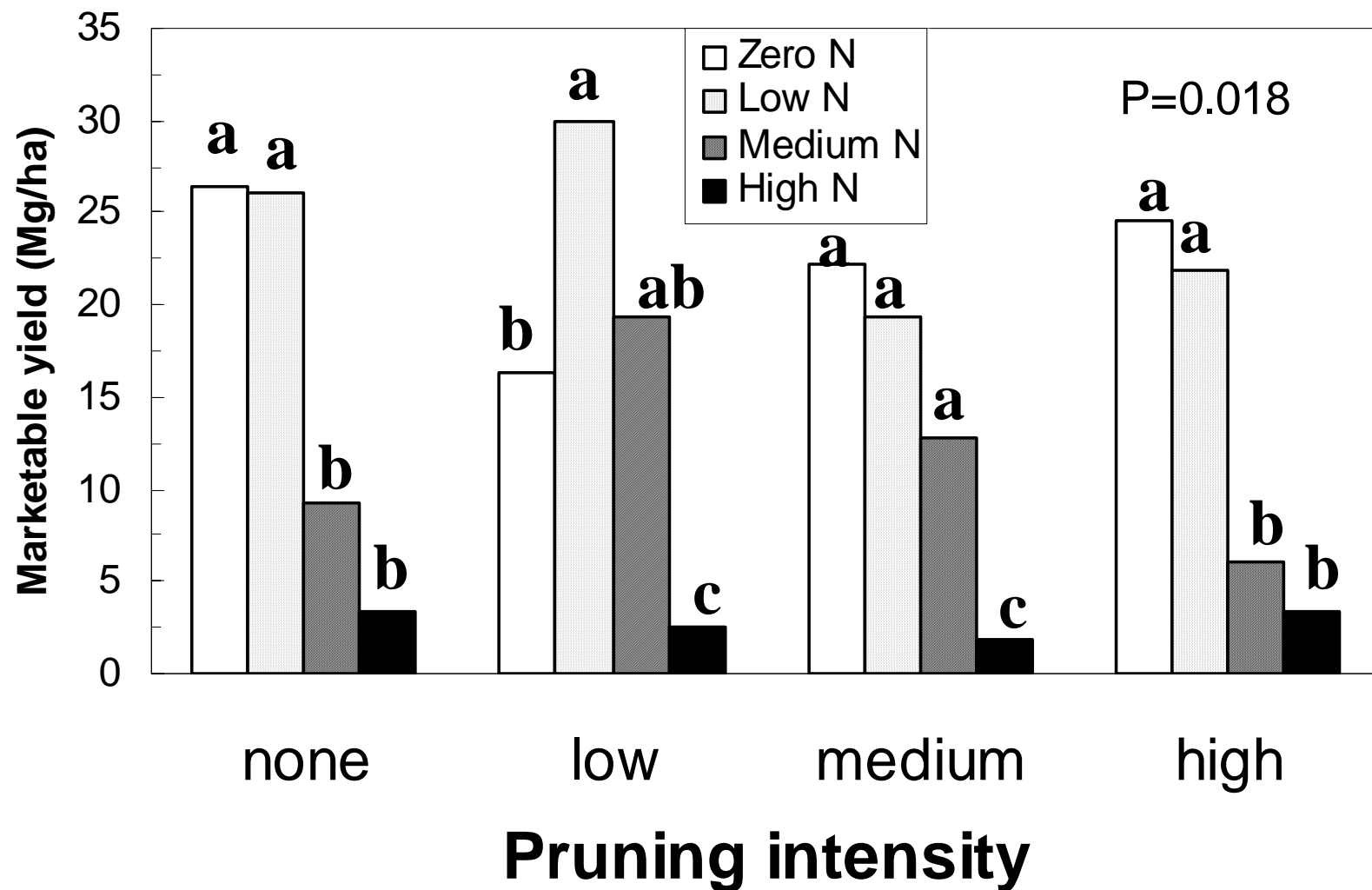
Runner Biomass / m²



Marketable Yield - Year 1



Marketable Yield - Year 2



Economic Analysis

- Cost of N fertilizer
- Fruit yield (\$32 / bbl)
- Prunings harvested
 - Cost to buy ST vines (\$1500 / ton)
- Net Income = Yield + Vine Savings
- Fertilizer Costs
 - Y1, Y2 & both years combined

Preliminary Economics (2 yr data only)

- **Low - N rate / pruning combinations** had highest economic returns overall
 - **High - N rates** consistently had lowest income, irrespective of pruning intensity
-

Other Highlights

(2 yr data only)

- Each 50 - N increment > 50 lb/A gave $\sim 14\%$ increase vine biomass (spring harvest)
 - #, biomass, and % Uf decreased with increasing N rate
 - Unaffected by pruning intensity
-

Other Highlights

(2 yr data)

- **Marketable yield declined** with increasing N rate, esp. > 50 lb
 - Unaffected by pruning intensity
 - **Runner # , biomass increased** with increasing N rate
 - Unaffected by pruning intensity
-

Notes

- Mean vine biomass (spring)
 - Low = 0.12 ton / A
 - Medium = 0.26 ton / A
 - High = 0.51 ton / A
 - 2005 data being processed
 - Continue project in 2006
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Questions ??