Yuma Lettuce Trial
Spring 2024

KelPak

Seaweed Extract

Trial Conducted by: Robert Masson
Assistant Ag Extension Agent

THE UNIVERSITY OF ARIZONA
Cooperative Extension
Yuma County

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Planted: 3/15/24
First Harvest: 6/13/24
Second Harvest: 6/18/24

Fertilizers:
Phos acid 13.3 GAL/AC added at seeding
UAN 32 Fert Applications
Application A: 15# N 3/25/24
Application B: 35# N 4/9/24
Application C: 50# N 5/16/24

Stand Count: 4/18
NDVI_1: 4/24
NDVI_2: 5/8
NDVI_3: 5/20

Photos 1: 5/20

Rye grass cover crop grown without nutrition. Mown and biomass removed. Phos Acid added through drip at seeding.
Phos acid 13.3 GAL/AC

Drip tape cut 3/18 /24 and manifolds installed.

Cantaloupe Variety: Harris Moran Deluxe F1

Trial Details

Four Treatments (full N / half N):

1. Full Fertility UTC
3. Full Fertility Kelpak 2 pt/ac x 3 apps
4. Full Fertility Kelpak 3 pt/ac x 3 apps

Note: Trt #2 was a product from another group and will be analyzed separately

Replications: 6

Apps:
4/11
4/26
5/7

Remove plots: 707, 708, 709, 710 due to high stand count due to improper thinning

Trial Summary

- Individual melon size and weight
  - Experimental treatment at the low application rate group had slightly larger melons, while high rate were of similar size to UTC
  - Lower standard deviation observed in both experimental groups
- Overall marketable yield mimicked individual melon measurements
  - UTC treatment: 539 cartons per acre
  - Low rate Kelpak: 794 cartons per acre
  - High rate Kelpak: 622 cartos per acre

Drip tape dug on 31’ increments and cut to form 30’ beds one row wide
Injections made with battery pump and 15 gallon tank filled to 5 gallon mark.

University of A

Two trials combined together Terra Ag Solutions and Kelpak. 100% nit
Trial ID: Cantaloupe Terra Kelpak Spring2024
Protocol ID: Location: Yuma Arizona Tria
Study Director: Robert Masson Sponsor Contact:
Investigator:

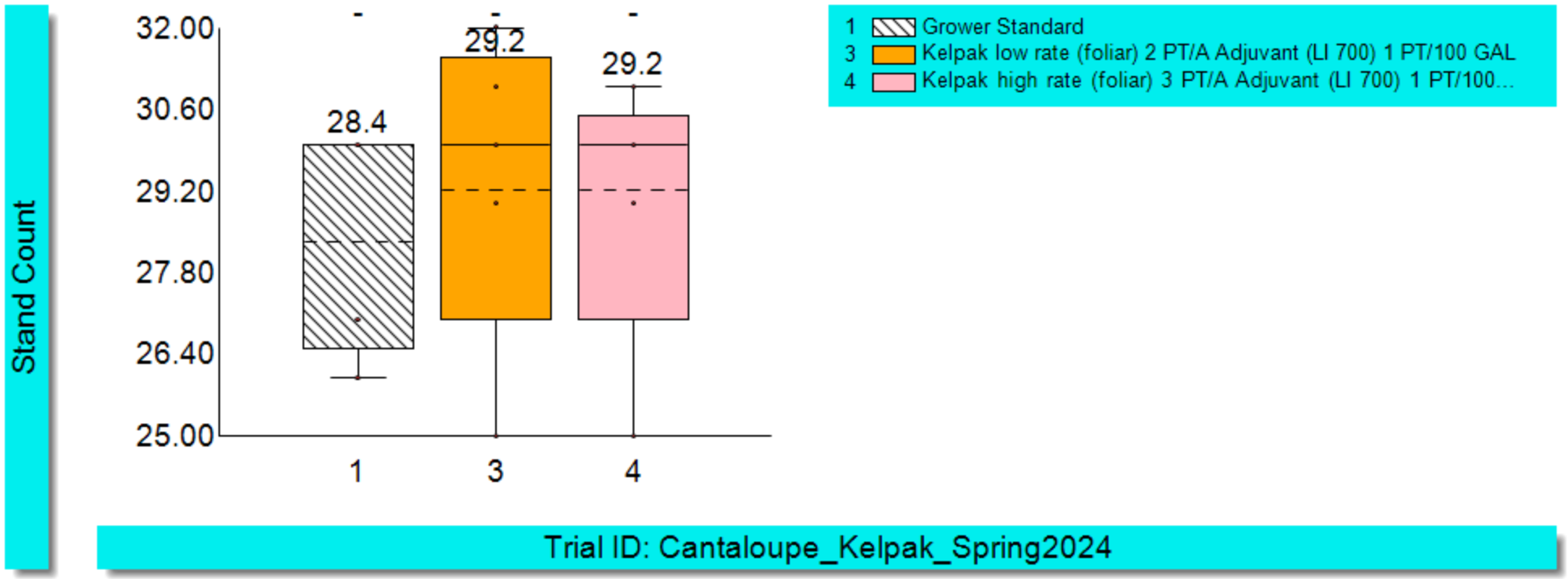
Trial Map Treatment Description

Trt	Code	Description
1	CHK	Grower Standard
2		TerraAg Organic 2 (drip) 10 GAL/A
3		Kelpak low rate (foliar) 2 PT/A Adjuvant (LI 700) 1 PT/100 GAL
4		Kelpak high rate (foliar) 3 PT/A Adjuvant (LI 700) 1 PT/100 GAL

Irrigation

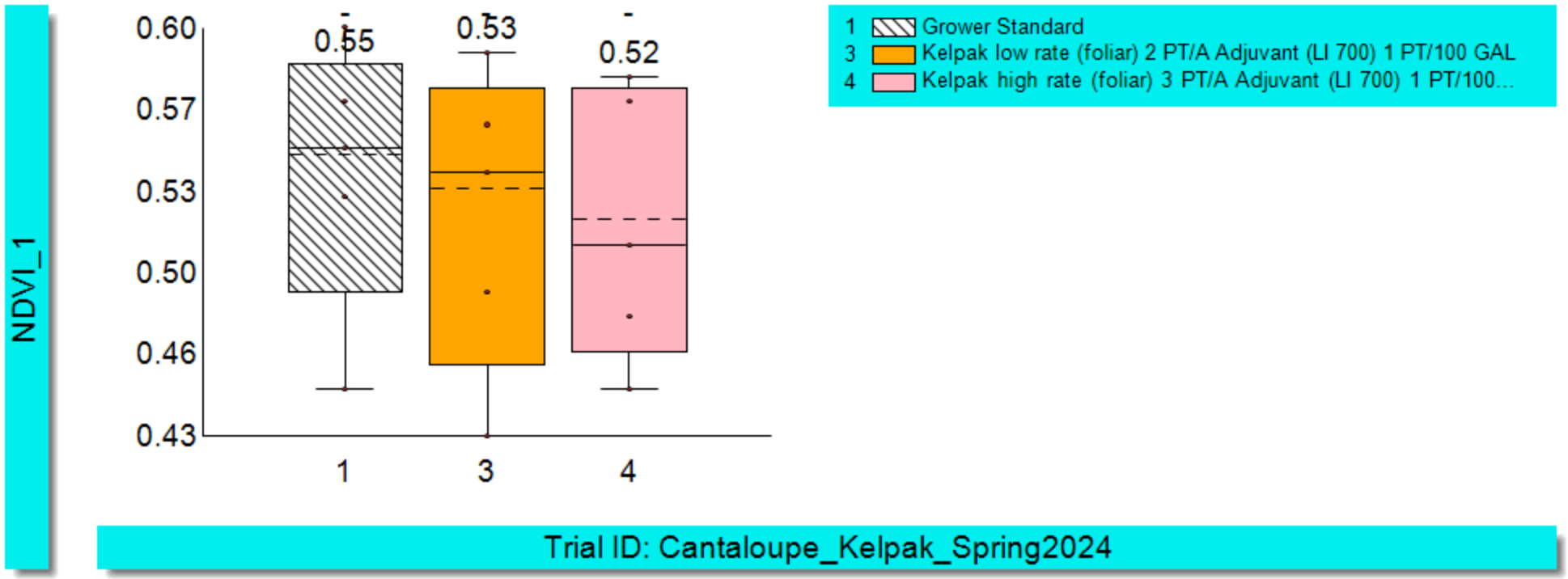
Irrigation Date	Amount	Unit	Method
Mar-15-2024	0.5	IN	Sprinkler (set herbicide)
Mar-18-2024	0.372	IN	Drip irrigation system (phos)
Mar-23-2024	0.465	IN	drip irrigation system
Mar-30-2024	0.18	IN	rain
Mar-31-2024	0.129	IN	rain
Apr-1-2024	0.14	IN	rain
Apr-4-2024	0.186	IN	drip irrigation system
Apr-8-2024	0.186	IN	drip irrigation system
Apr-12-2024	0.186	IN	drip irrigation system
Apr-18-2024	0.186	IN	drip irrigation system
Apr-23-2024	0.186	IN	drip irrigation system
Apr-26-2024	0.186	IN	drip irrigation system
Apr-30-2024	0.186	IN	drip irrigation system
May-7-2024	0.372	IN	drip irrigation system
May-13-2024	0.372	IN	drip irrigation system
May-14-2024	0.372	IN	drip irrigation system
May-20-2024	0.372	IN	drip irrigation system
May-21-2024	0.372	IN	drip irrigation system
May-25-2024	0.744	IN	drip irrigation system
May-28-2024	0.744	IN	drip irrigation system
May-31-2024	0.744	IN	drip irrigation system
June-1-2024	0.744	IN	drip irrigation system
June-4-2024	0.744	IN	drip irrigation system
Total Water Use	**8.66**	**IN**	

Two trials combined together Terra Ag Solutions and Kelpak. 100% nitrogen for all treatments. Terra Ag inject. Kelpak foliar



Trial ID: Cantaloupe_Kelpak_Spring2024

Two trials combined together Terra Ag Solutions and Kelpak. 100% nitrogen for all treatments. Terra Ag inject. Kelpak foliar



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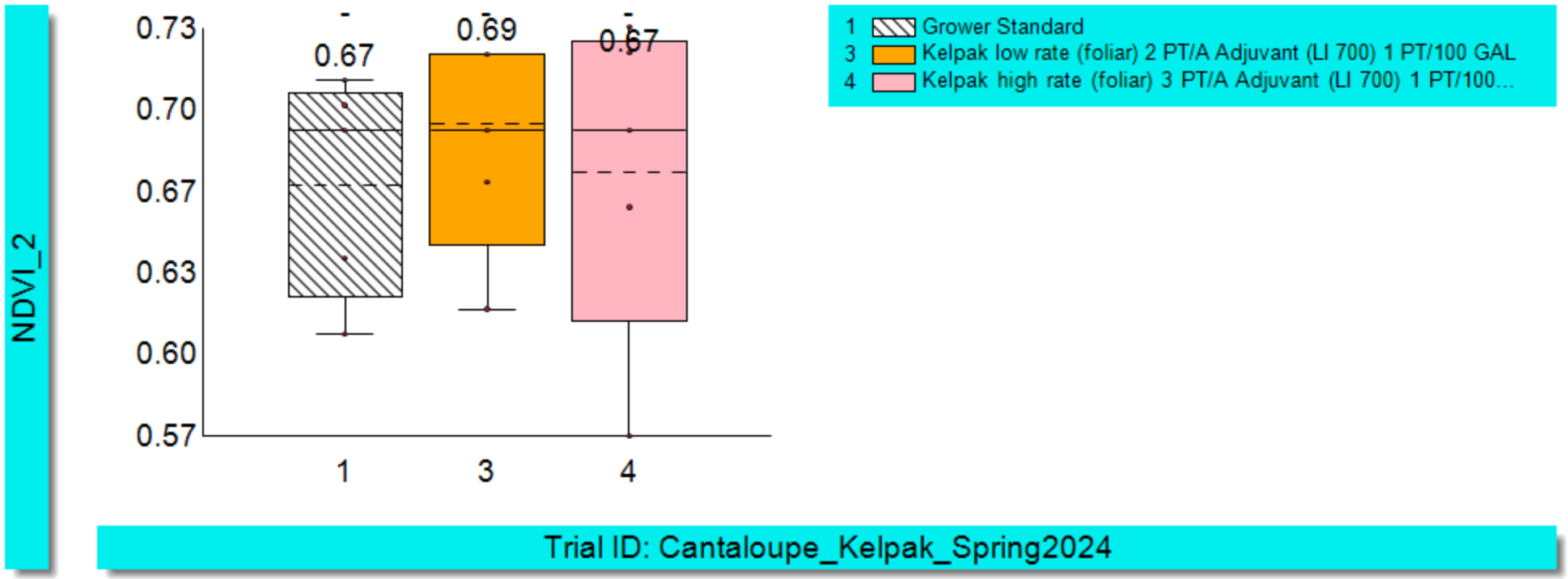

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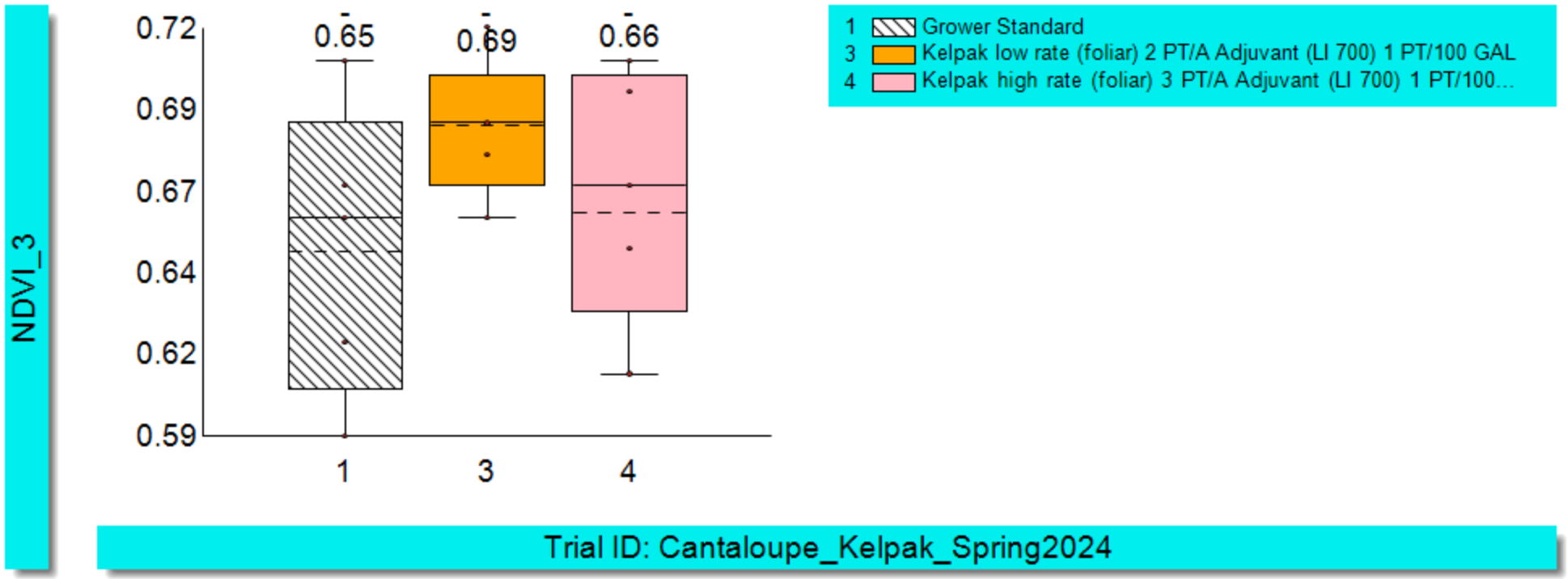

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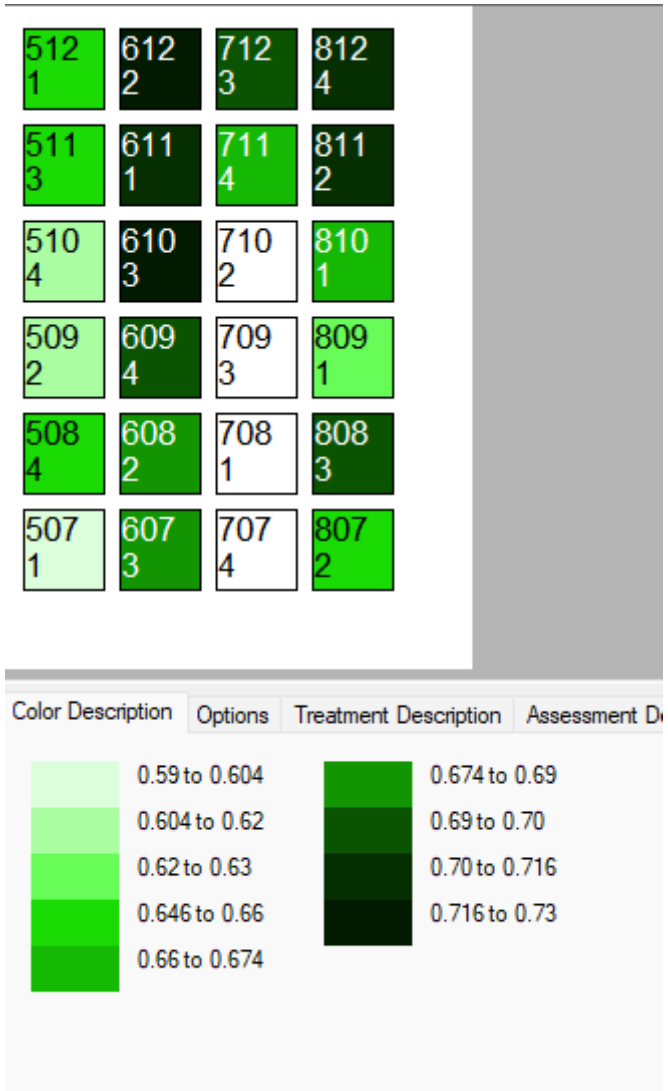


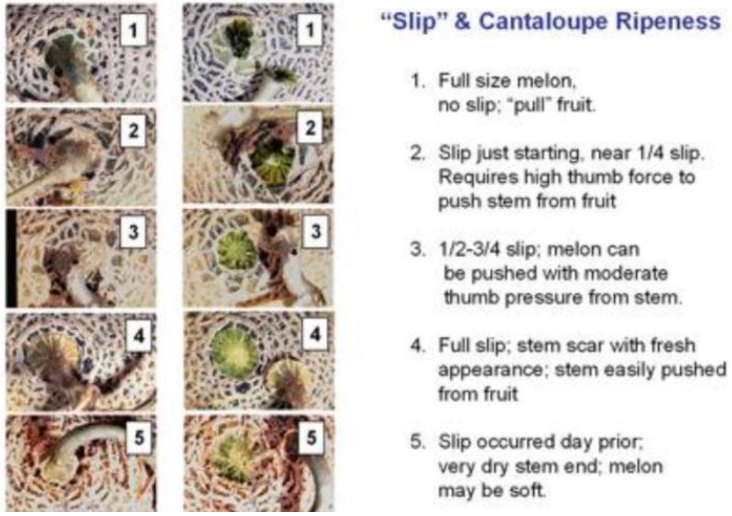
Assessment distribution map NDVI_3

Harvest

- Two picking dates
- All ripe fruit was picked in the plot on the first harvest.
- All fruit ripe or unripe was picked on second harvest,
- Each fruit was individually weighed, sized, and rated for maturity
- A subsample of three melons per plot were tested for brix
- Yield reported as cartons per acre of marketable fruit broken into carton size grades.

Harvest (Cont.)

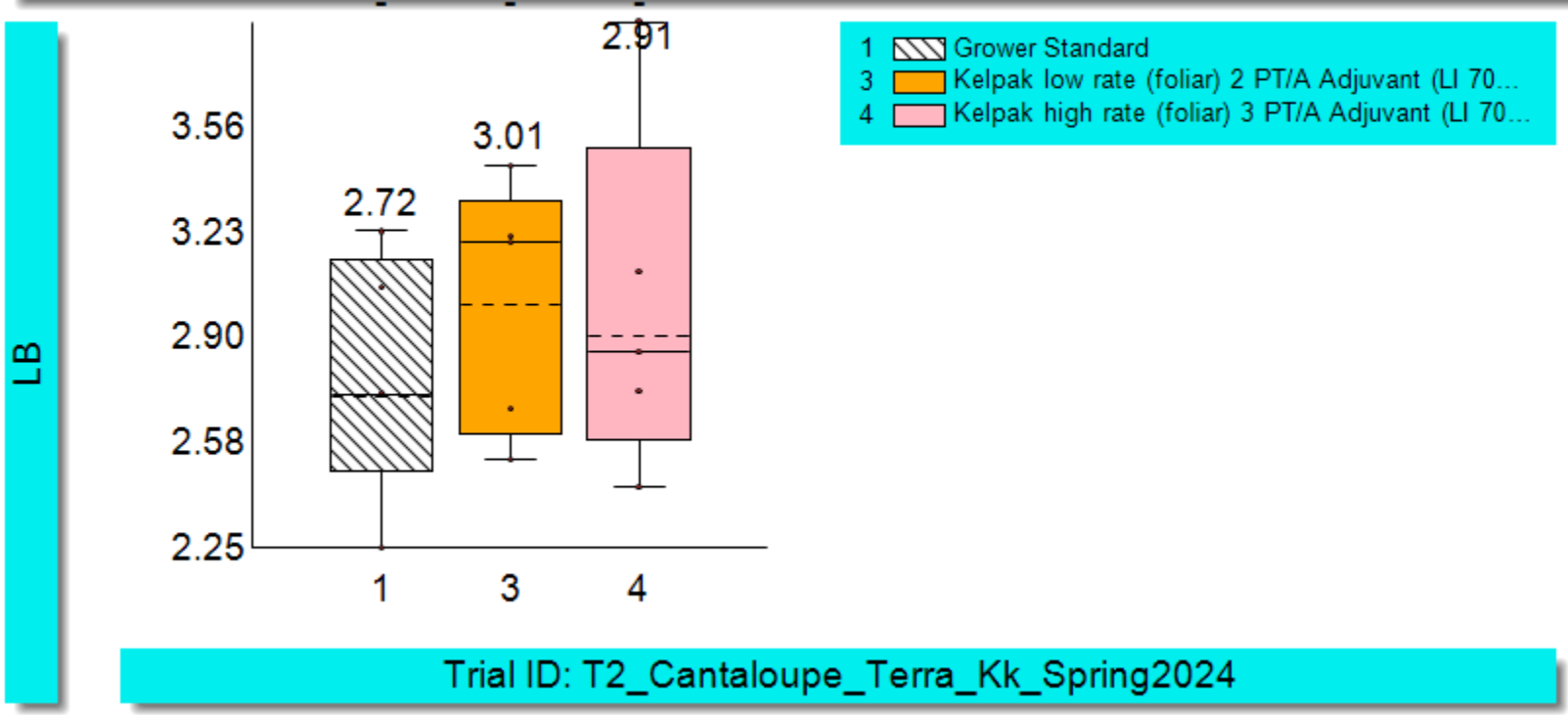
- Slip measures ripeness:
  - 0 = No slip (not ripe)
  - 1 = ¼ slip
  - 2 = ½ slip
  - 3 = ¾ slip
  - 4 = full slip (very ripe)



https://postharvest.ucdavis.edu/produce-facts-sheets/cantaloupe

- The number of fruit with blemishes on them, either ground spots or sunburn, were counted and reported as sunburn
- The number of visually marketable fruit was counted and reported as 'keepers'
- The final carton yield was calculated based on formula that converted melon circumference into carton grade size.

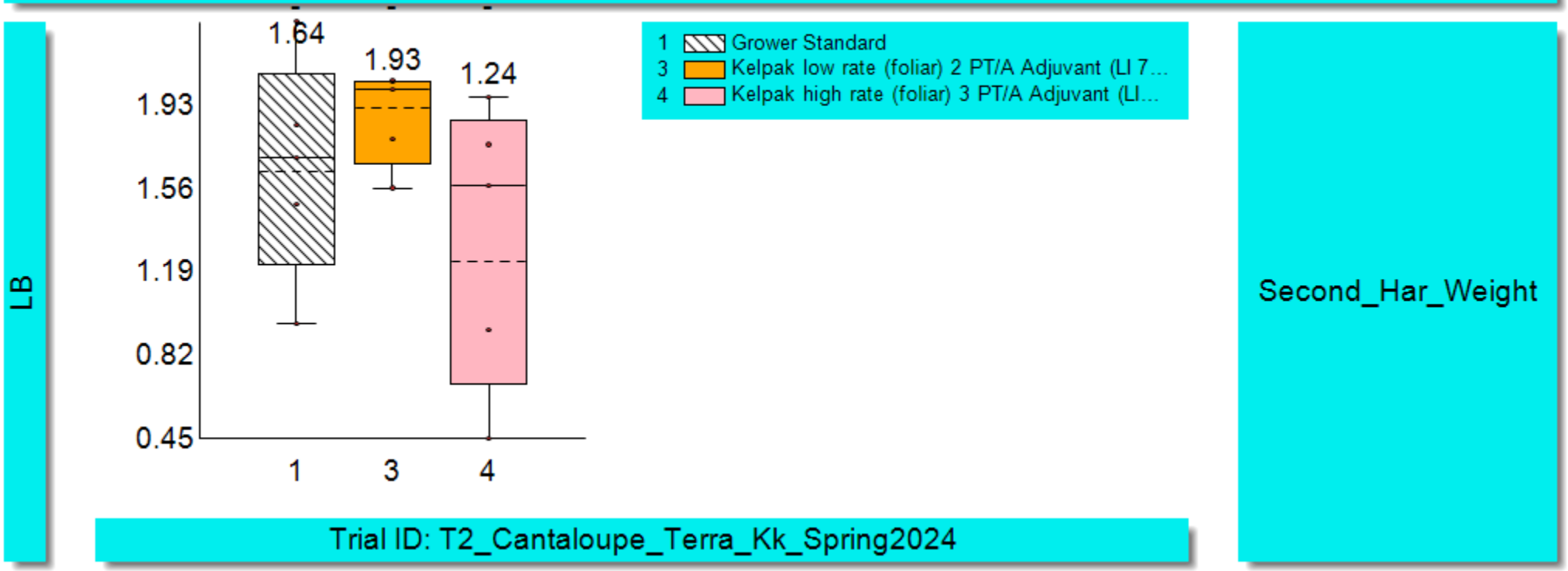
TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Weight



Trial ID: T2_Cantaloupe_Terra_Kk_Spring2024

First_Har_Weight

TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Weight



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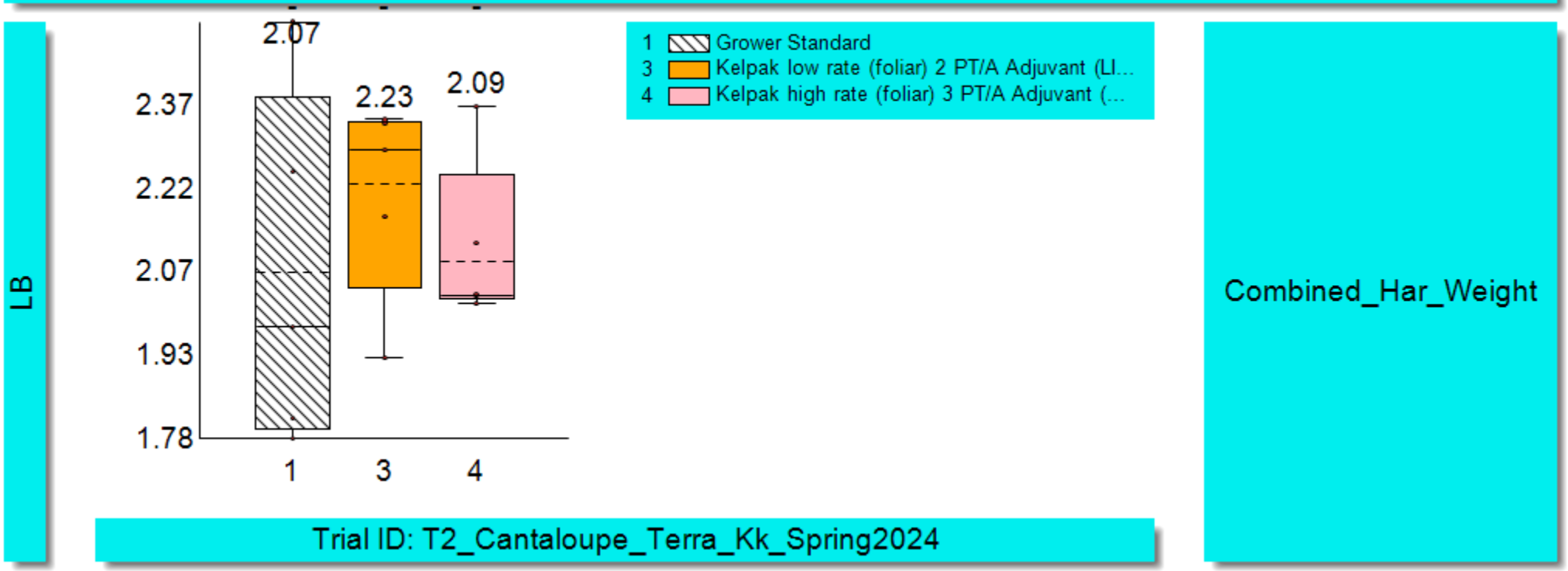
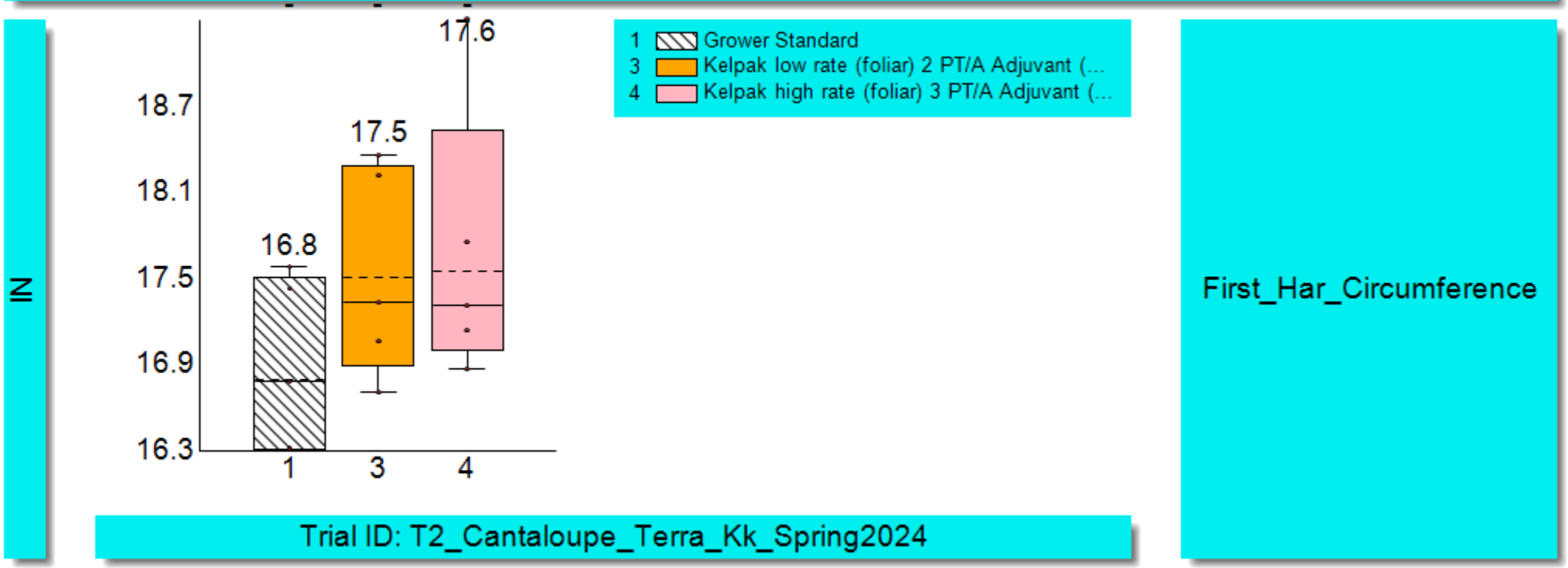
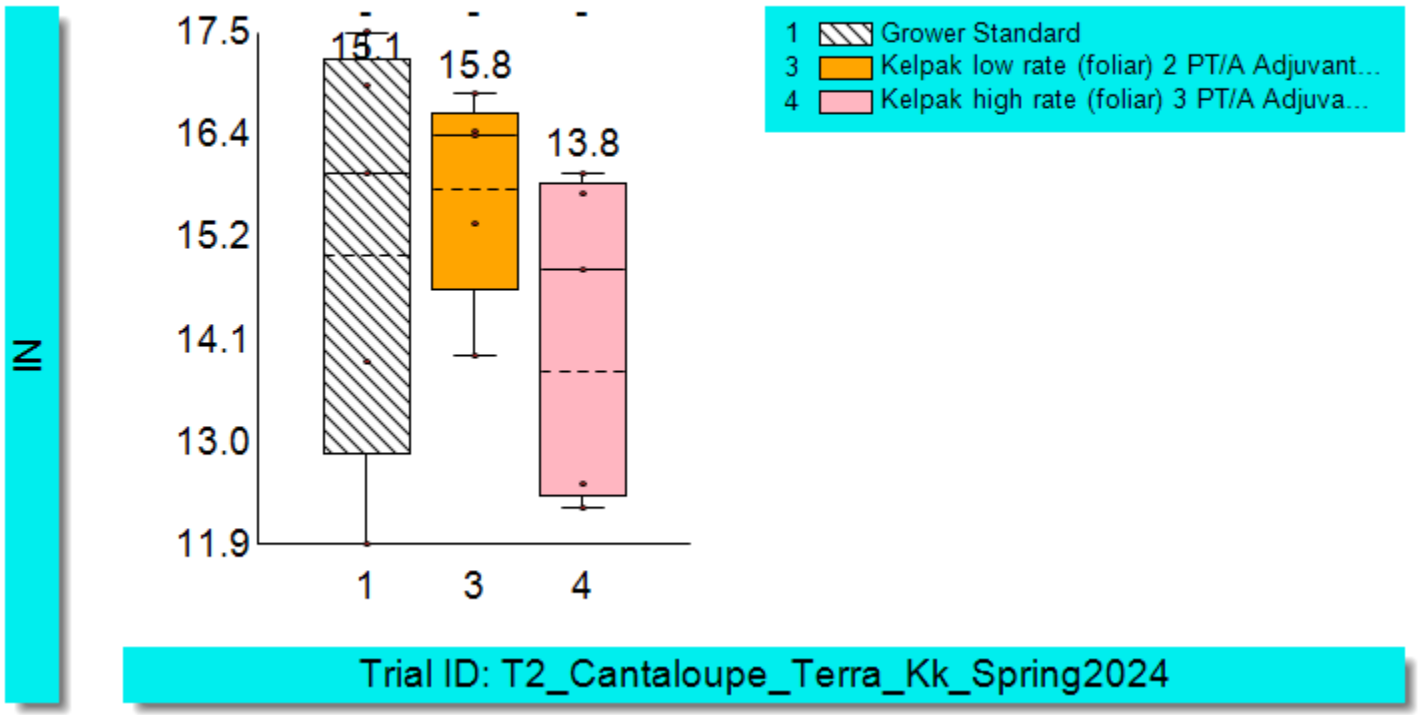


TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Size



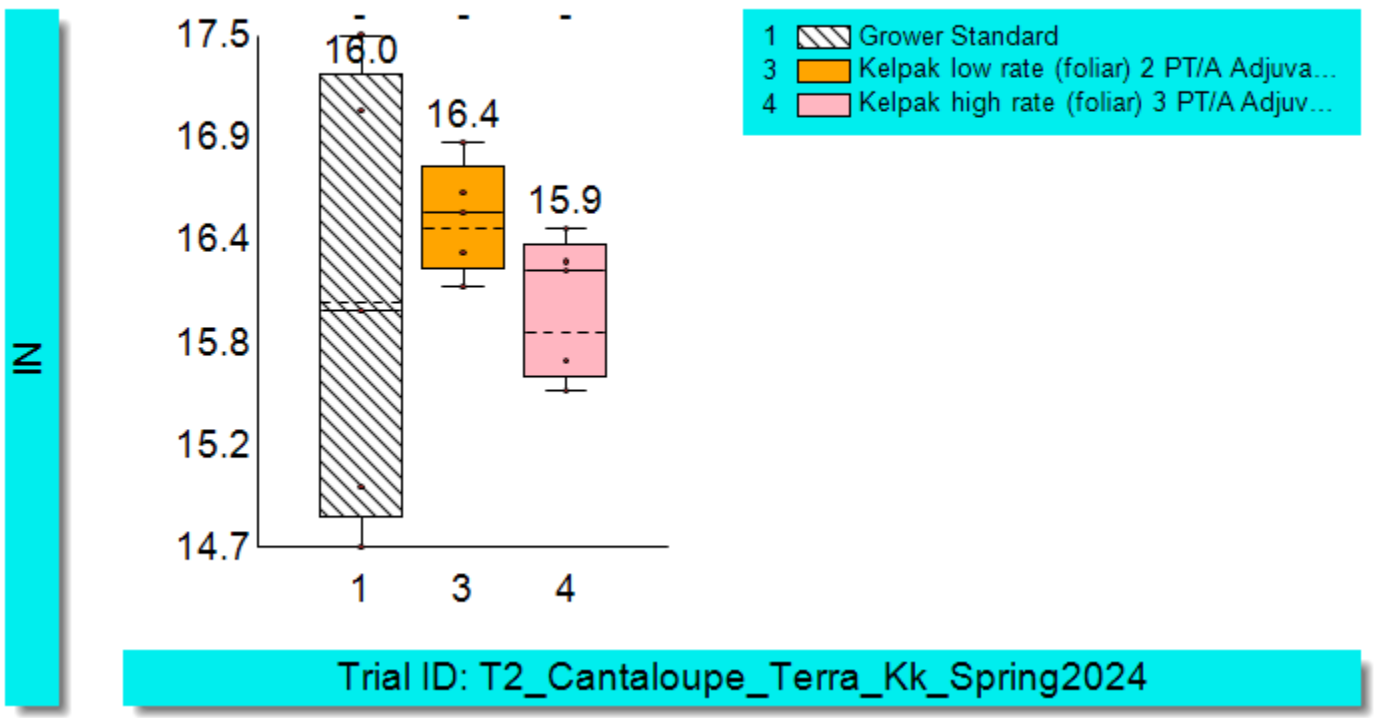
TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Size



Trial ID: T2_Cantaloupe_Terra_Kk_Spring2024

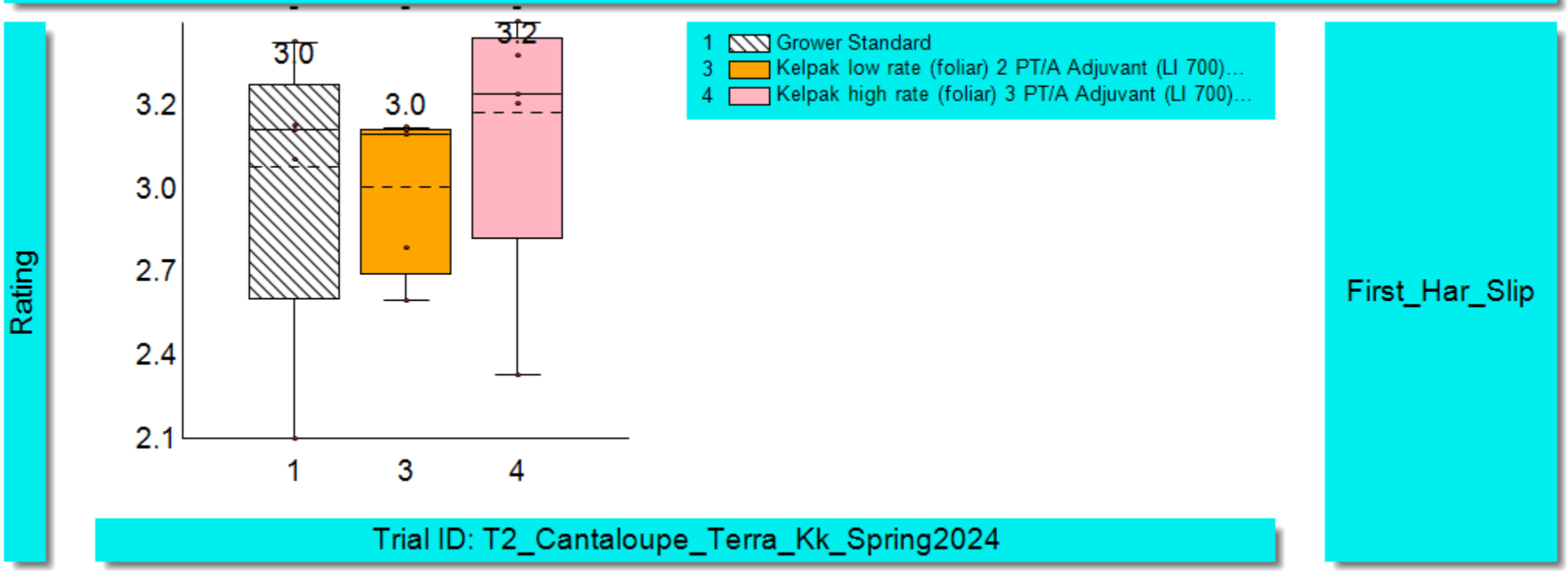
Second_Har_Circumference

TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Size



Combined_Har_Circumference

TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Maturity



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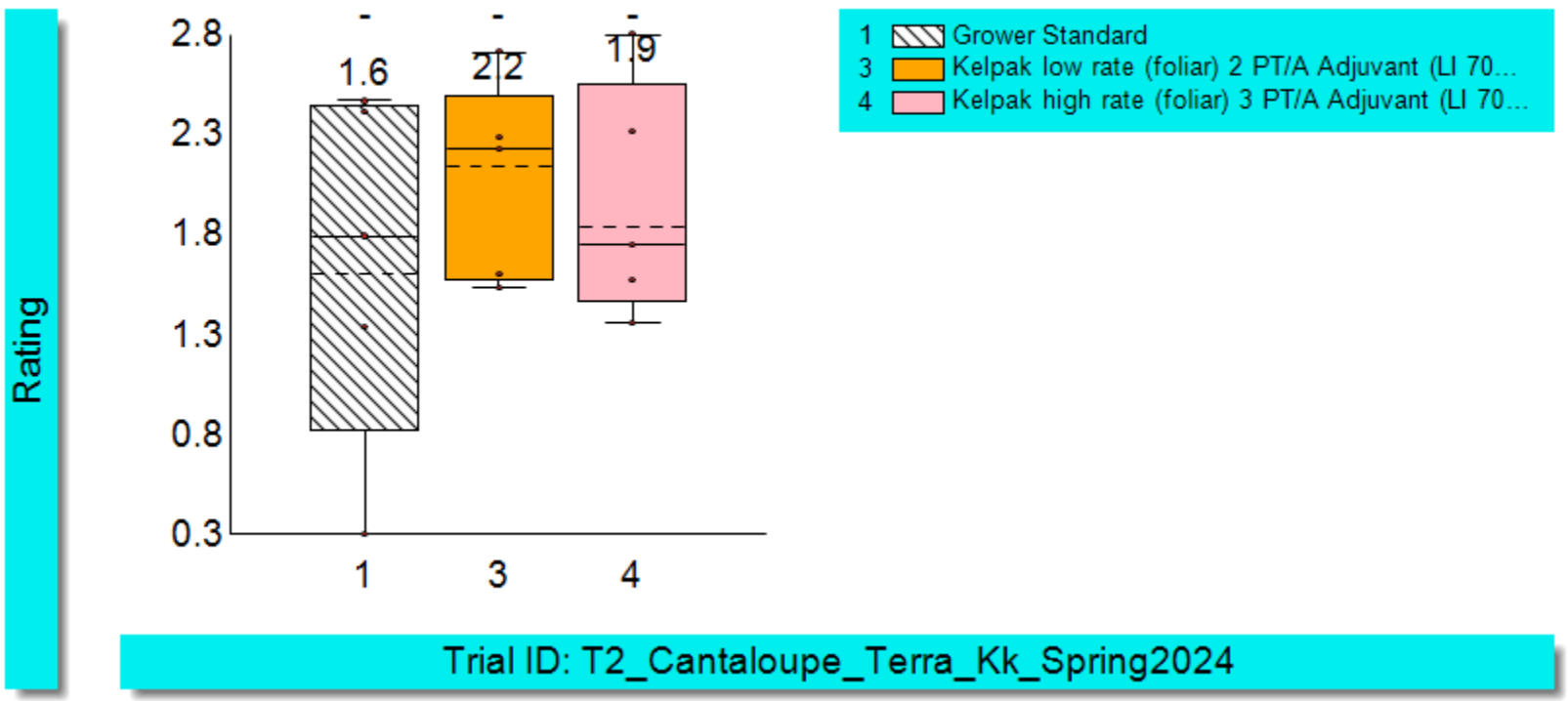
TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Maturity



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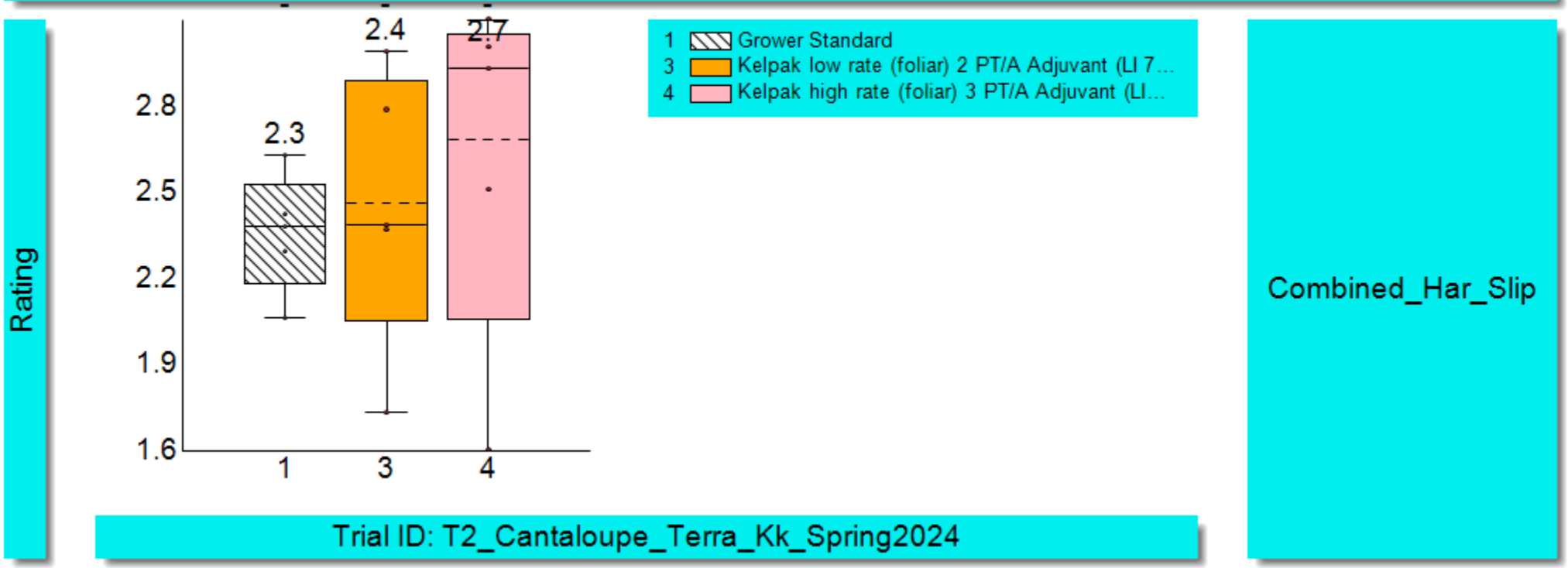
Second_Har_Slip

TerraAg Tech, Organic Plant and Soil Pro. Individual Melon Maturity



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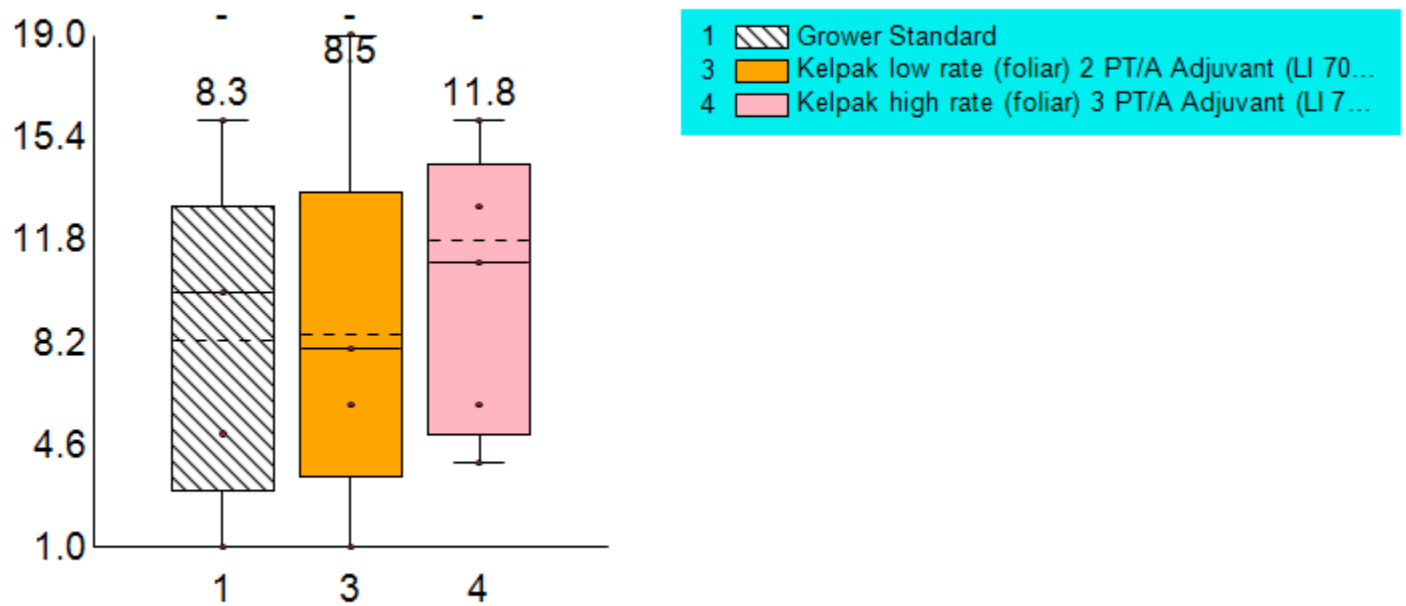
Combined_Har_Slip

TerraAg Tech, Organic Plant and Soil Pro. Number of Sunburned Melons



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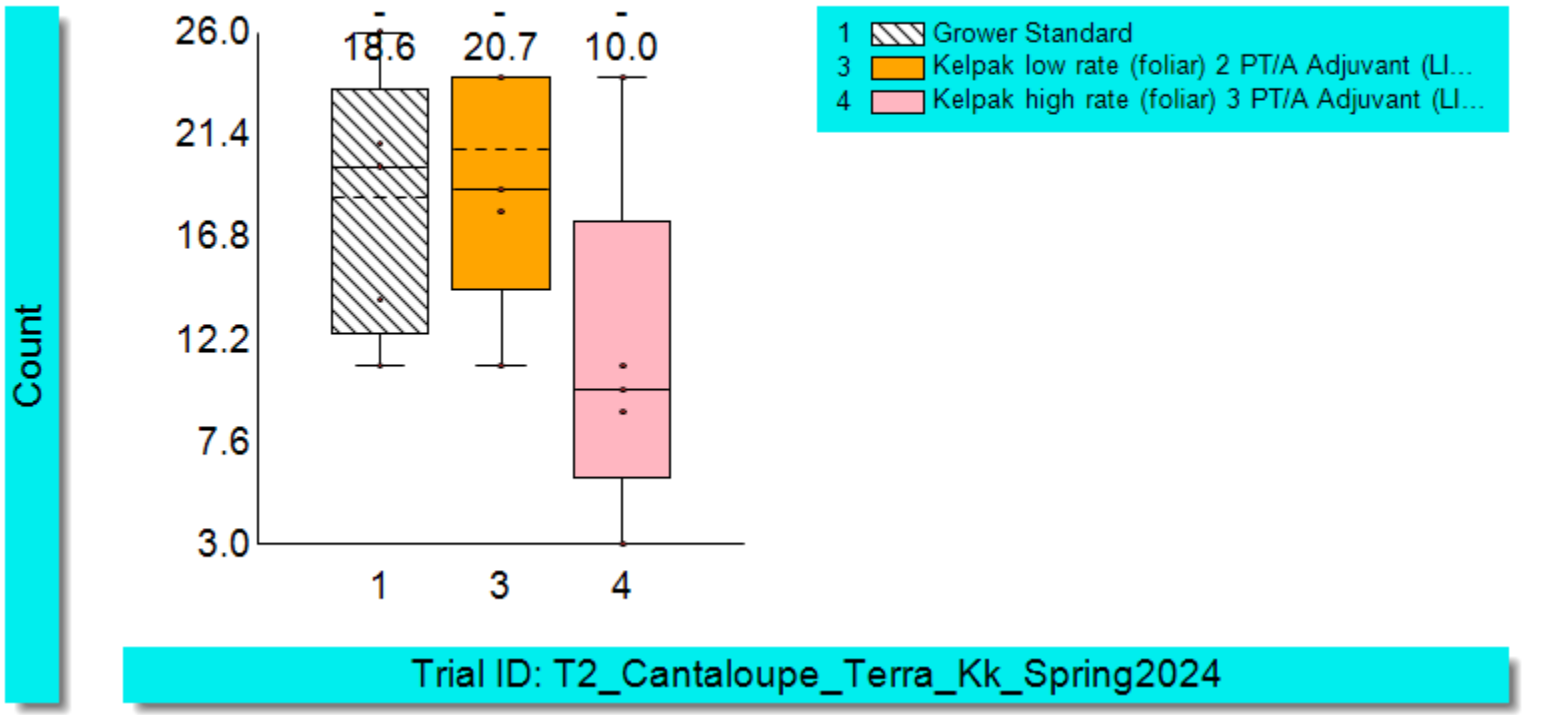
First_Har_Sunburn

TerraAg Tech, Organic Plant and Soil Pro. Number of Sunburned Melons



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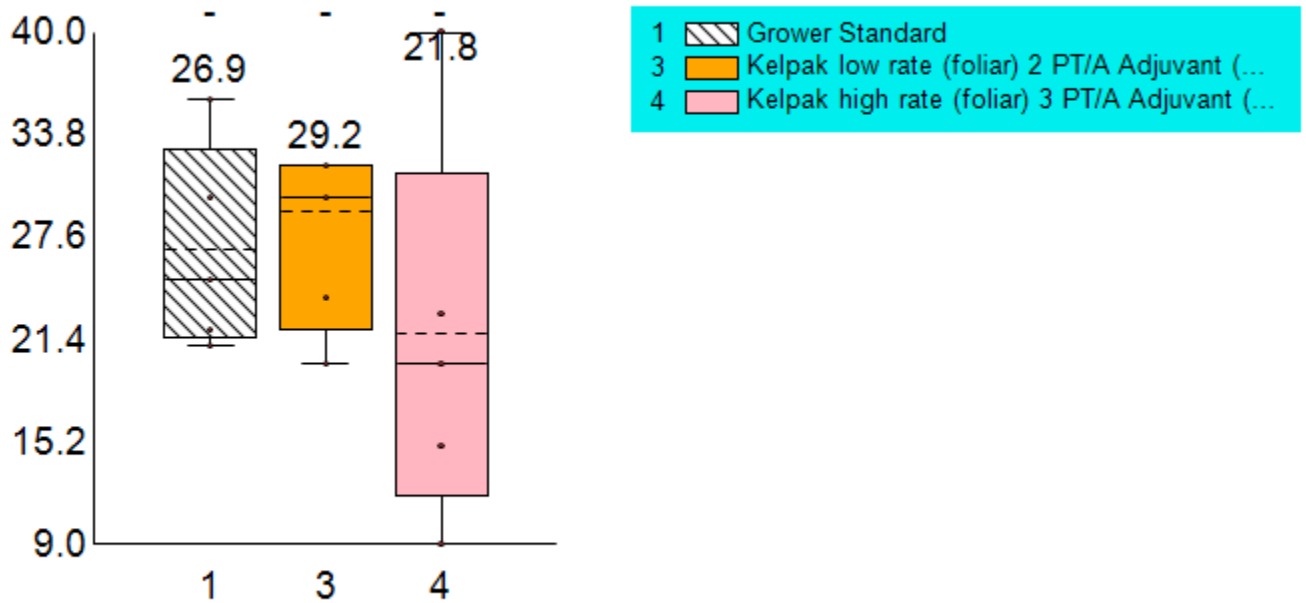
Second_Har_Sunburn

TerraAg Tech, Organic Plant and Soil Pro. Number of Sunburned Melons



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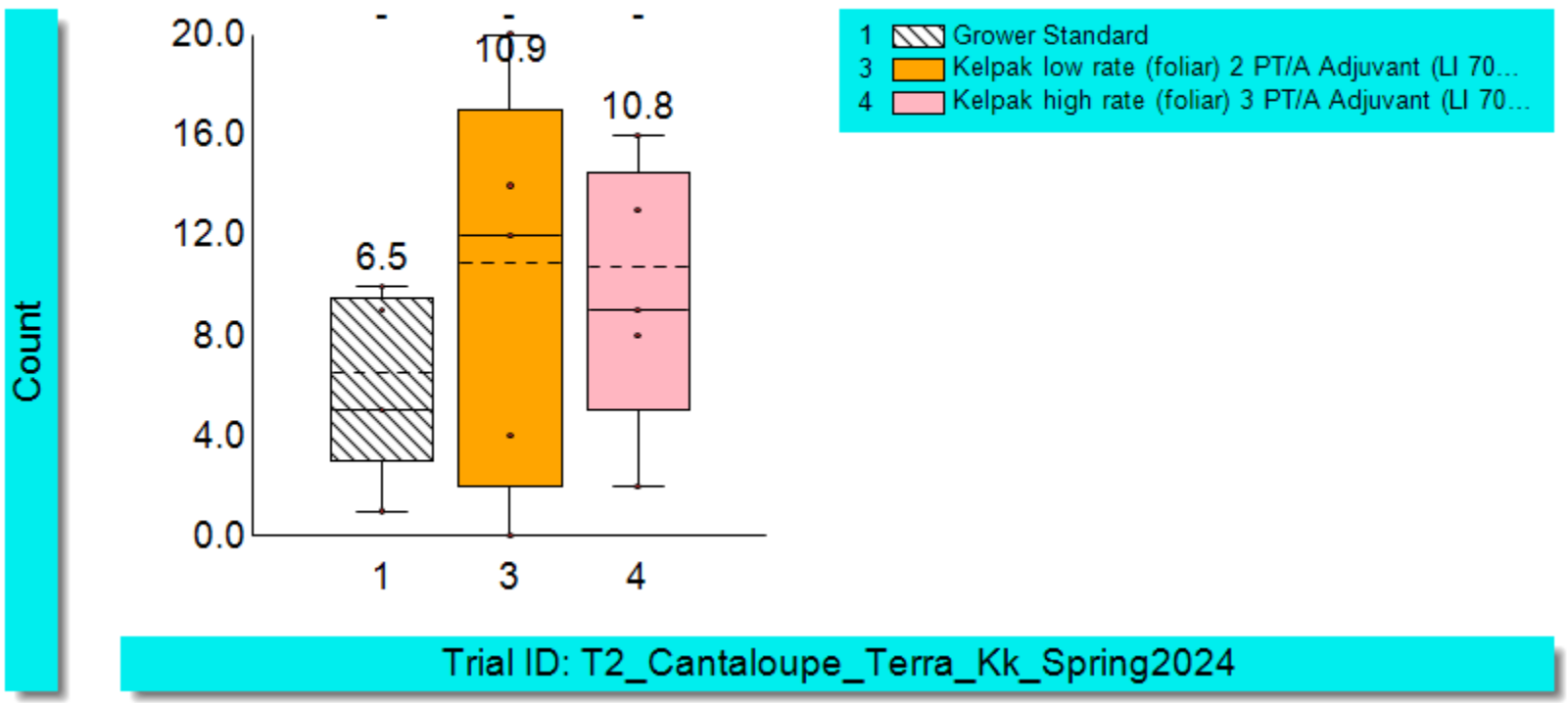
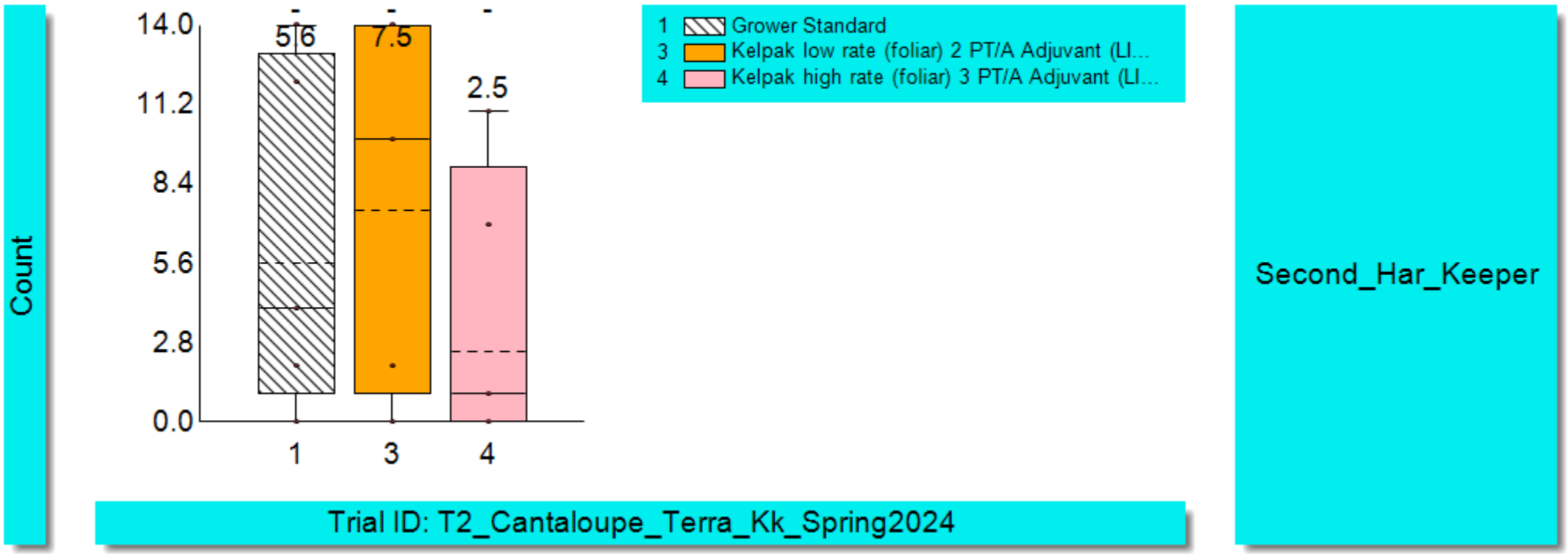
Combined_Har_Sunburn

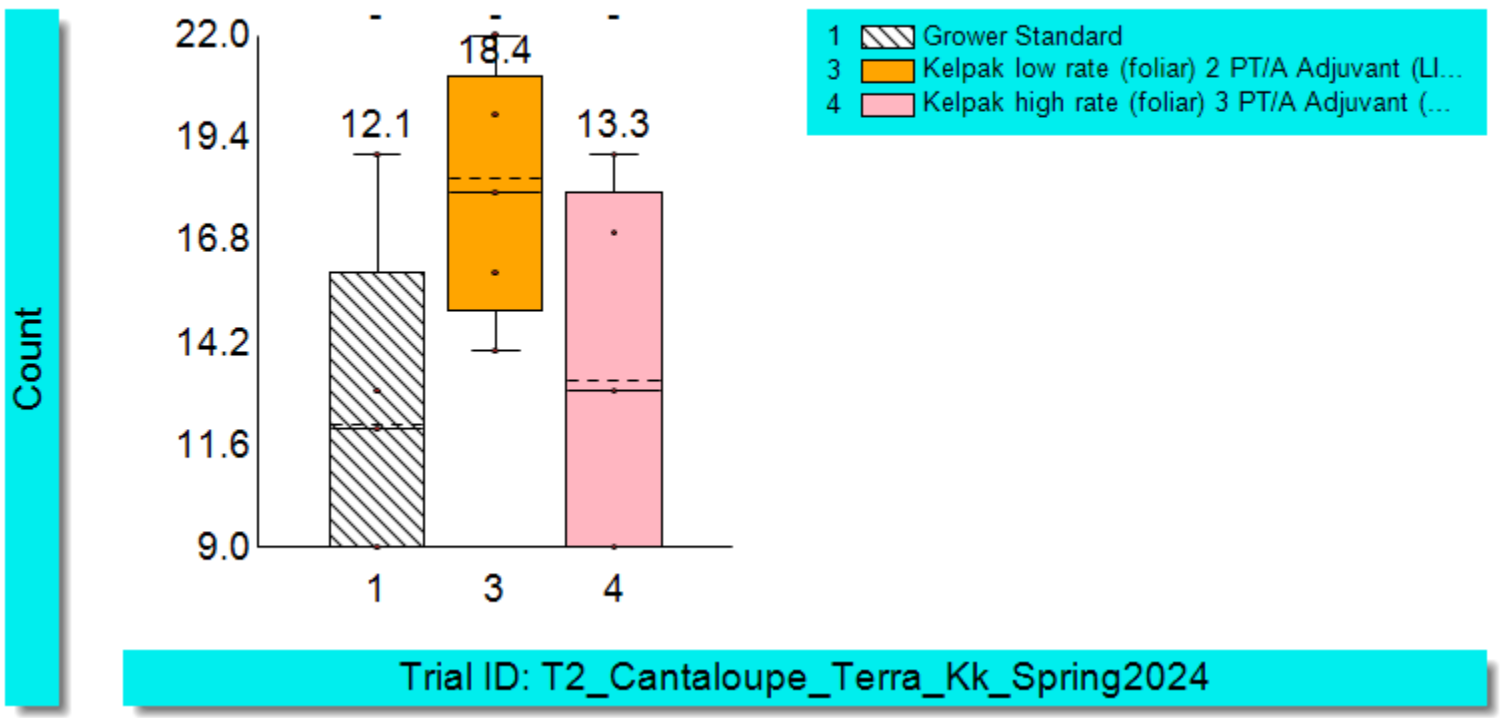
TerraAg Tech, Organic Plant and Soil Pro. Number of 'Keeper' Melons per Plot



TerraAg Tech, Organic Plant and Soil Pro. Number of 'Keeper' Melons per Plot



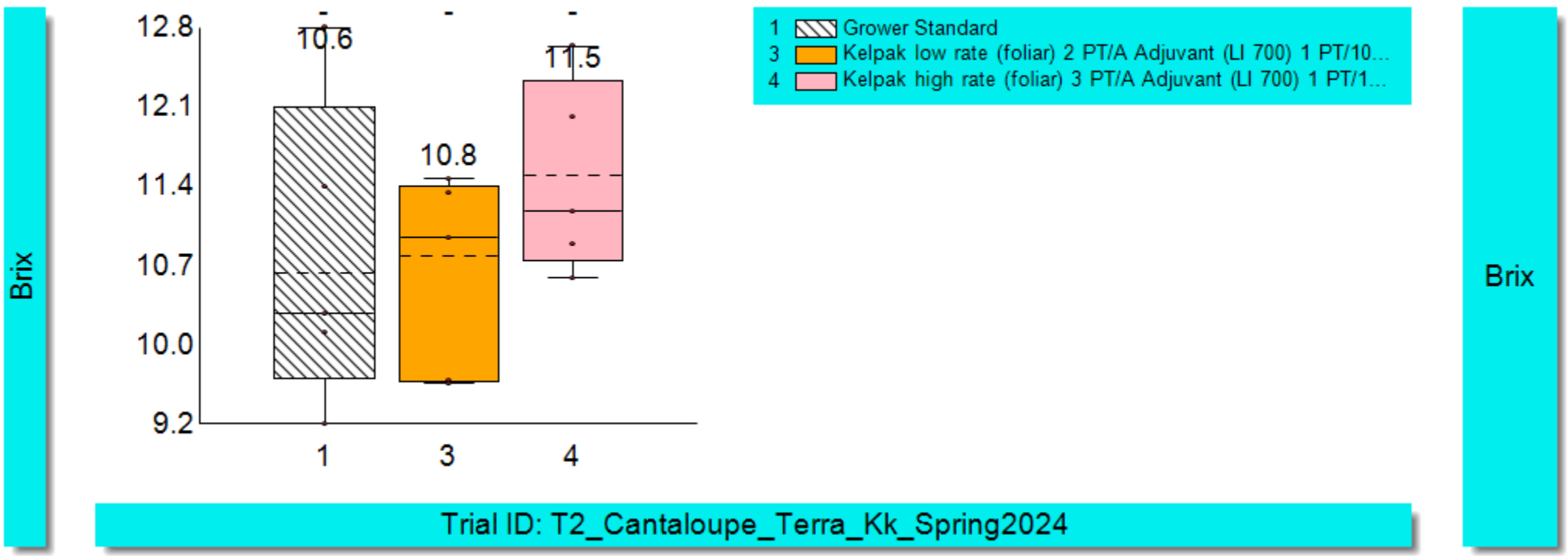
TerraAg Tech, Organic Plant and Soil Pro. Number of 'Keeper' Melons per Plot



Trial ID: T2_Cantaloupe_Terra_Kk_Spring2024

Combined_Har_Keeper

TerraAg Tech, Organic Plant and Soil Pro. Sugar 3 Melons per Plot



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Carton Grade Yield

Trt 1	**abv_std**	**5**	**6**	**9**	**12**	**15**	**18**	**22**	**under_std**	0.028926	Acres per trt
Number per Trt	0	1	7	30	82	35	23	10	79	267	Total number per trt
Cartons per Trt	NA	0.2	1.2	3.3	6.8	2.3	1.3	0.5	NA	15.6	Marketable Cartons per trt
Cartons per AC	NA	7	40	115	236	81	44	16	NA	**539**	**T1: Marketable Cartons per ac**
Trt 3	**abv_std**	**5**	**6**	**9**	**12**	**15**	**18**	**22**	**under_std**	0.028926	Acres per trt
Number per Trt	0	0	17	57	94	40	48	14	81	351	Total number per trt
Cartons per Trt	NA	0	2.8	6.3	7.8	2.7	2.7	0.6	NA	22.9697	Marketable Cartons per trt
Cartons per AC	NA	0	98	219	271	92	92	22	NA	**794**	**T3: Marketable Cartons per ac**
Trt 4	**abv_std**	**5**	**6**	**9**	**12**	**15**	**18**	**22**	**under_std**	0.028926	Acres per trt
Number per Trt	0	1	10	44	69	53	27	10	91	305	Total number per trt
Cartons per Trt	NA	0.2	1.7	4.9	5.8	3.5	1.5	0.5	NA	17.99343	Marketable Cartons per trt
Cartons per AC	NA	6.9	57.6	169.0	198.8	122.2	51.9	15.7	NA	**622**	**T4: Marketable Cartons per ac**

Carton Size Grades	Circumference (IN)	
	min	max
above std	24.38	.
5	22.81	24.35
6	20.45	22.78
9	18.47	20.42
12	16.9	18.44
15	15.74	16.87
18	14.95	15.71
22	14.17	14.92
under std		14.137

Plot photos


Plot 507
Trt 1


Plot 607
Trt 3


Plot 707
Trt 4


Plot 807
Trt 2


Plot 803
Trt 3


Plot 708
Trt 1


Plot 608
Trt 2


Plot 508
Trt 4


Plot 509
Trt 2


Plot 709
Trt 3.


Plot 609
Trt 9.


Plot 809
Trt 2


Plots 8 10
Trt 2


Plot 710
Trt 2


Plot 610
Trt 3


Plot 510
Trt 4


Plot 511
Trt 3


Plot 611
Trt 2


Plot 711
Trt 4


Plot 811
Trt 2


Plot 812
Trt 4


Plot 712
Trt 3


Plot 612
Trt 2


Plot 512
Trt 1