

# Yuma Cantaloupe Trial

Spring 2024

Syngenta: Talete

Robert Masson

Assistant Ag Extension Agent



THE UNIVERSITY OF ARIZONA

**Cooperative Extension**

Yuma County



THE UNIVERSITY OF ARIZONA

# Cooperative Extension

Yuma County

Planted: 3/15/24

Harvest: 6/10/24

Fert

Phos Acid added through drip at seeding  
13.3 GAL/AC

UAN-32

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

Abiotic stress ratings done on same day

Rye grass cover crop grown  
without nutrition. Mown and  
biomass removed.

Drip tape cut 3/18 and manifolds  
installed.

Cantaloupe Variety: Harris Moran  
Deluxe F1

Photos 1: 5/20

# Trial Details

Four Treatments:

1. UTC Full water
2. Talete Full water
3. UTC Half water
4. Talete Half water

Replications: 6

App dates:

A: 4/8

B: 4/23

C: 5/14

D: 6/3

Plot 2010 removed for too high initial stand count

# Summary Results

- Significant difference observed in all NDVI canopy coverage measurements between full water and reduced water group.
- Abiotic stress inconclusive
- Lower melon size and weight in reduced water group. No major differences between average melon weight and sizes in treatment and no treatment group.
- Higher carton yields in both full and reduced Talete groups

May-21-2024 (T8 Talete Cantaloupes 2024)

## University of Arizona

Talete Trial for salt mitigation.

Trial ID: T8 Talete Cantaloupes 2024  
Protocol ID: T8 Talete Cantaloupes 2024 Location: Yuma Arizona Trial Year: 2024  
Project ID: T8 Talete Cantaloupes 2024  
Study Director: Robert Masson Sponsor Contact:  
Investigator:

### Trial Map Treatment Description

Trt	Code	Description
1	CHK	Full Water UTC
2		Full Water + Talete 2 QT/A
3		Half Water UTC
4		Half Water + Talete 2 QT/A



# Irrigation

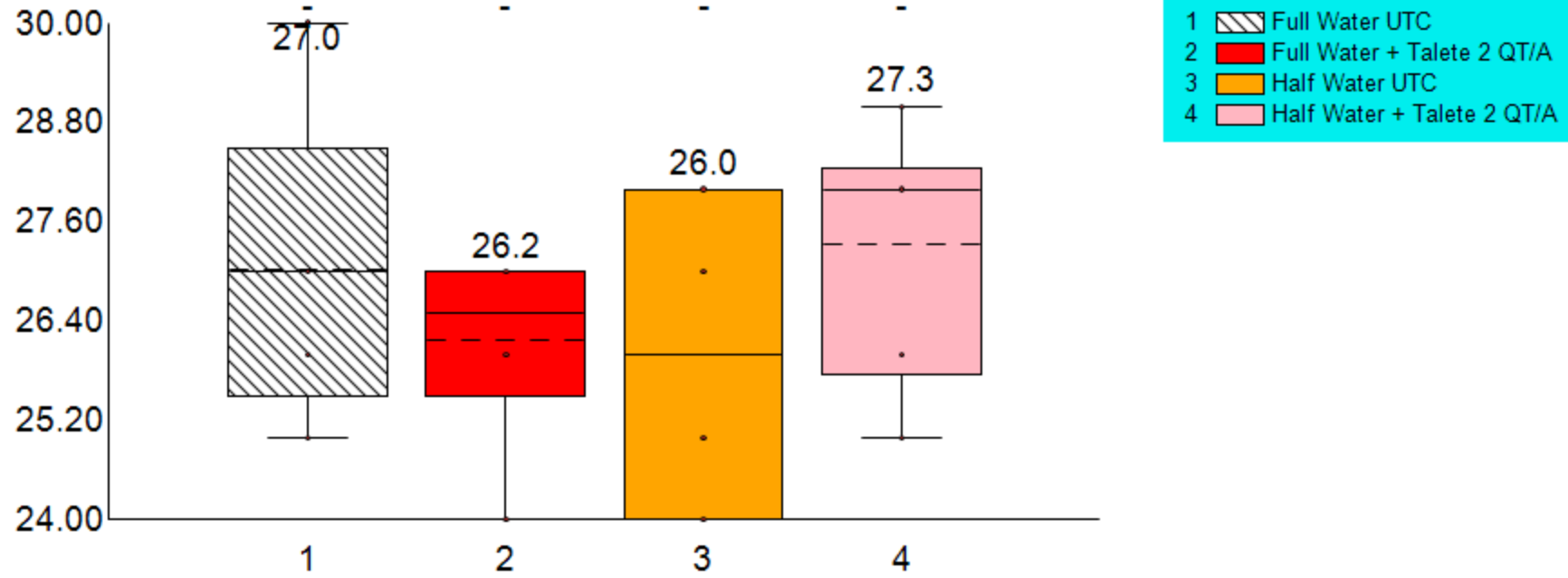
Irrigation Date	Amount	Unit	Method
Mar-15-2024	0.5	IN	Sprinkler (set herbicide)
Mar-18-2024	0.372	IN	Drip irrigation system (phos)
Mar-26-2024	0.465	IN	drip irrigation system
Mar-30-2024	0.18	IN	rain
Mar-31-2024	0.129	IN	rain
Apr-1-2024	0.14	IN	rain
Apr-4-2024	0.186	IN	drip irrigation system
Apr-8-2024	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
<b>Total Water Use Full Water Treatments</b>	<b>8.66</b>	<b>IN</b>	
<b>Total Water Use Reduced Water Treatment</b>	<b>5.88</b>	<b>IN</b>	

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.



Talete Trial for salt mitigation.

Stand Count

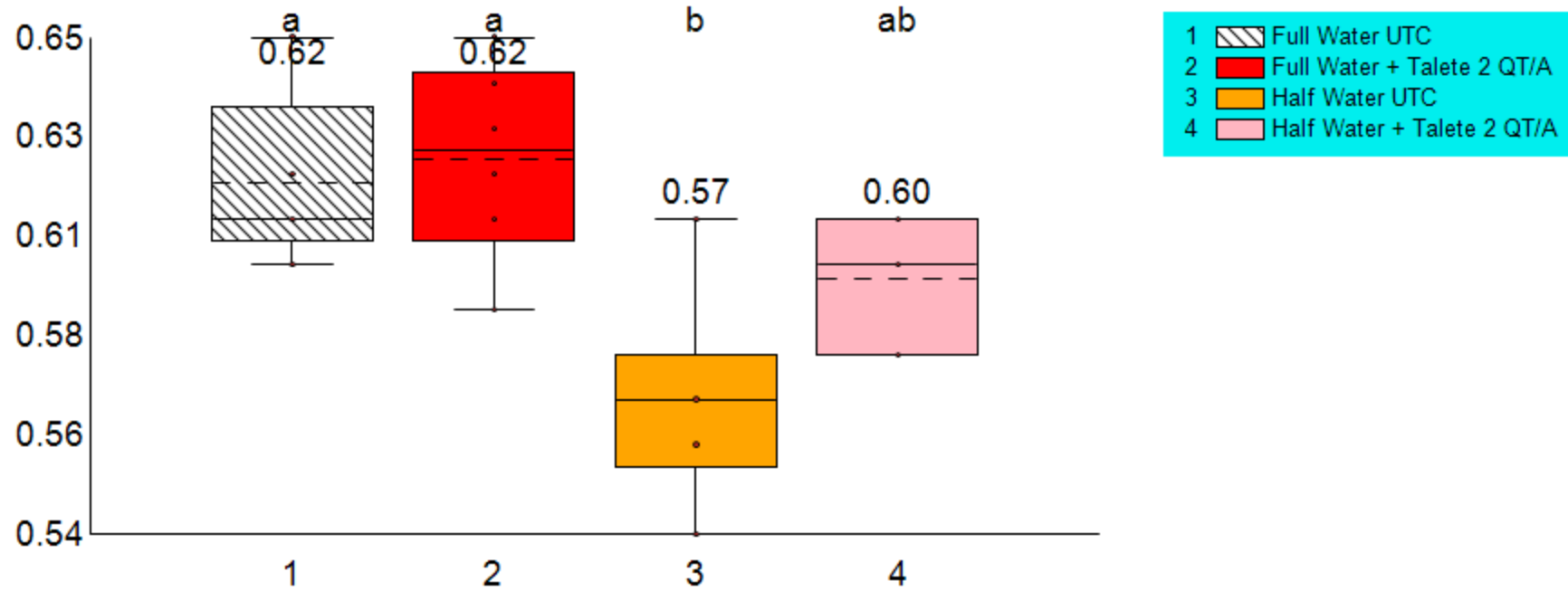


Trial ID: T8\_Talete\_Cantaloupes\_2024



Talete Trial for salt mitigation.

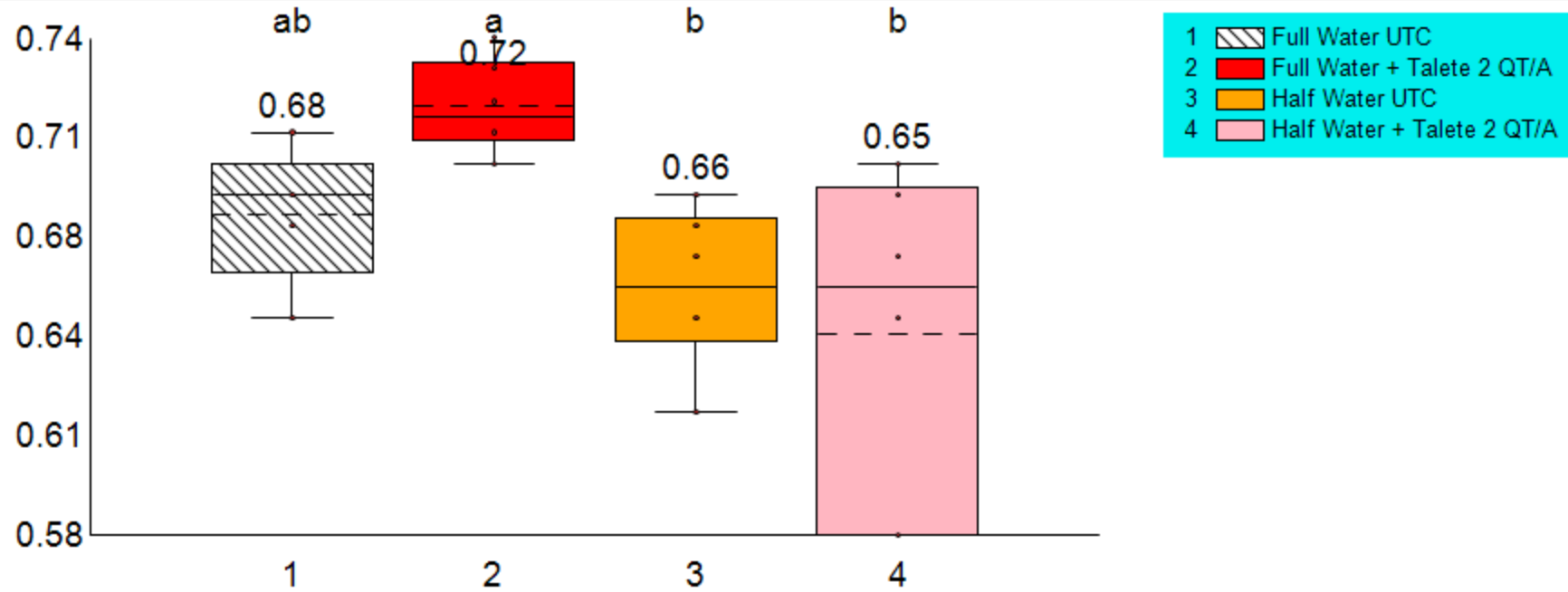
NDVI\_1



Trial ID: T8\_Talete\_Cantaloupes\_2024

Taleta Trial for salt mitigation.

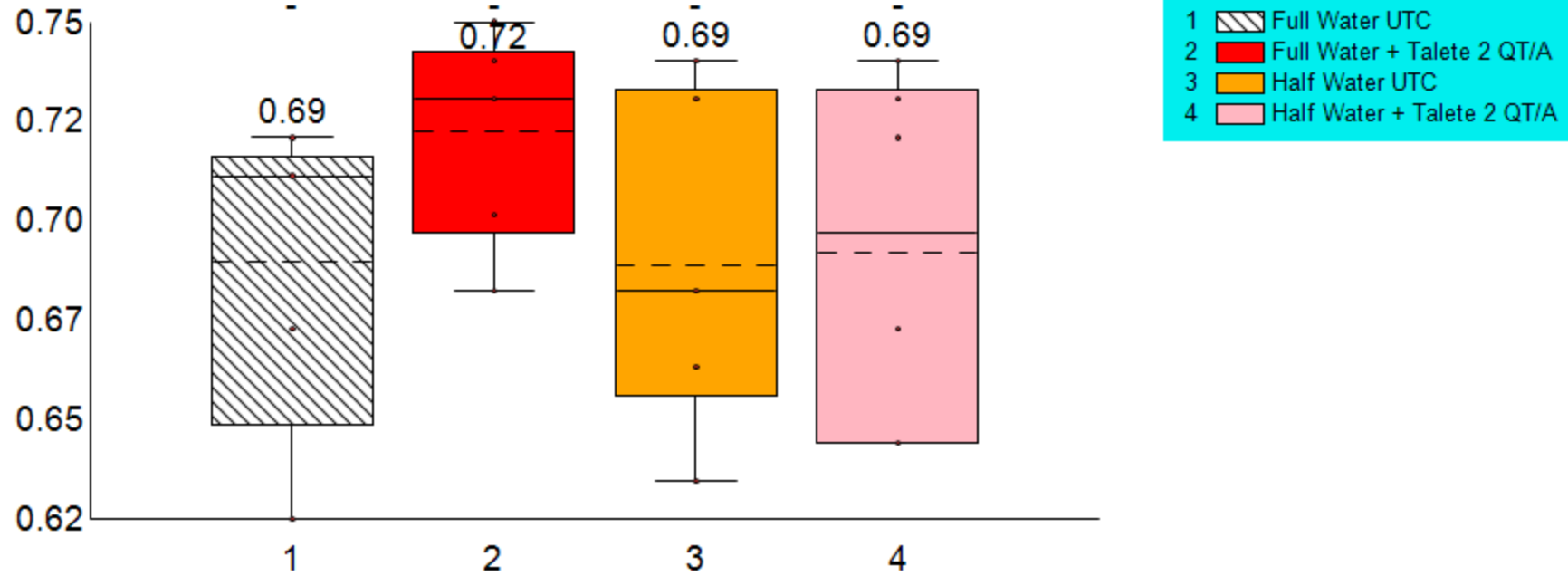
NDVI\_2



Trial ID: T8\_Taleta\_Cantaloupes\_2024

Talete Trial for salt mitigation.

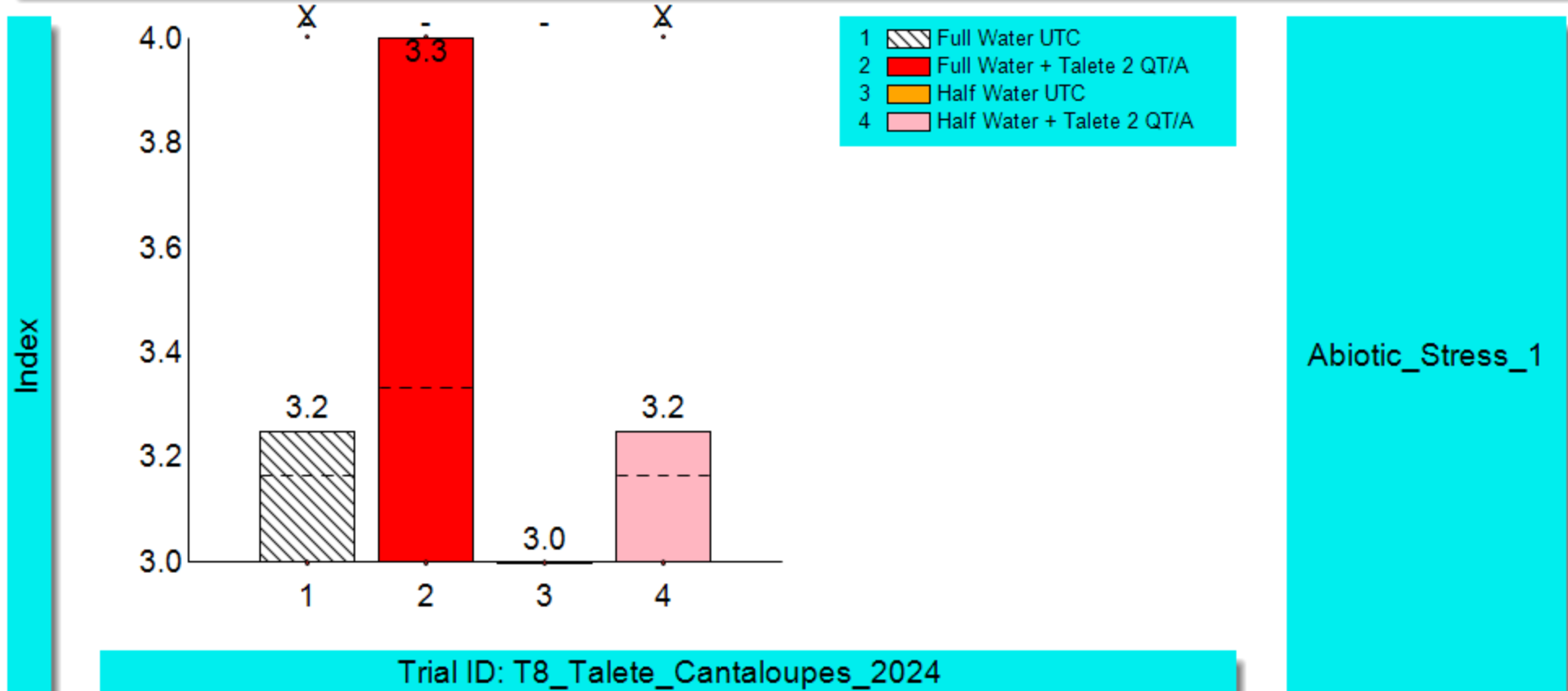
NDVI\_3



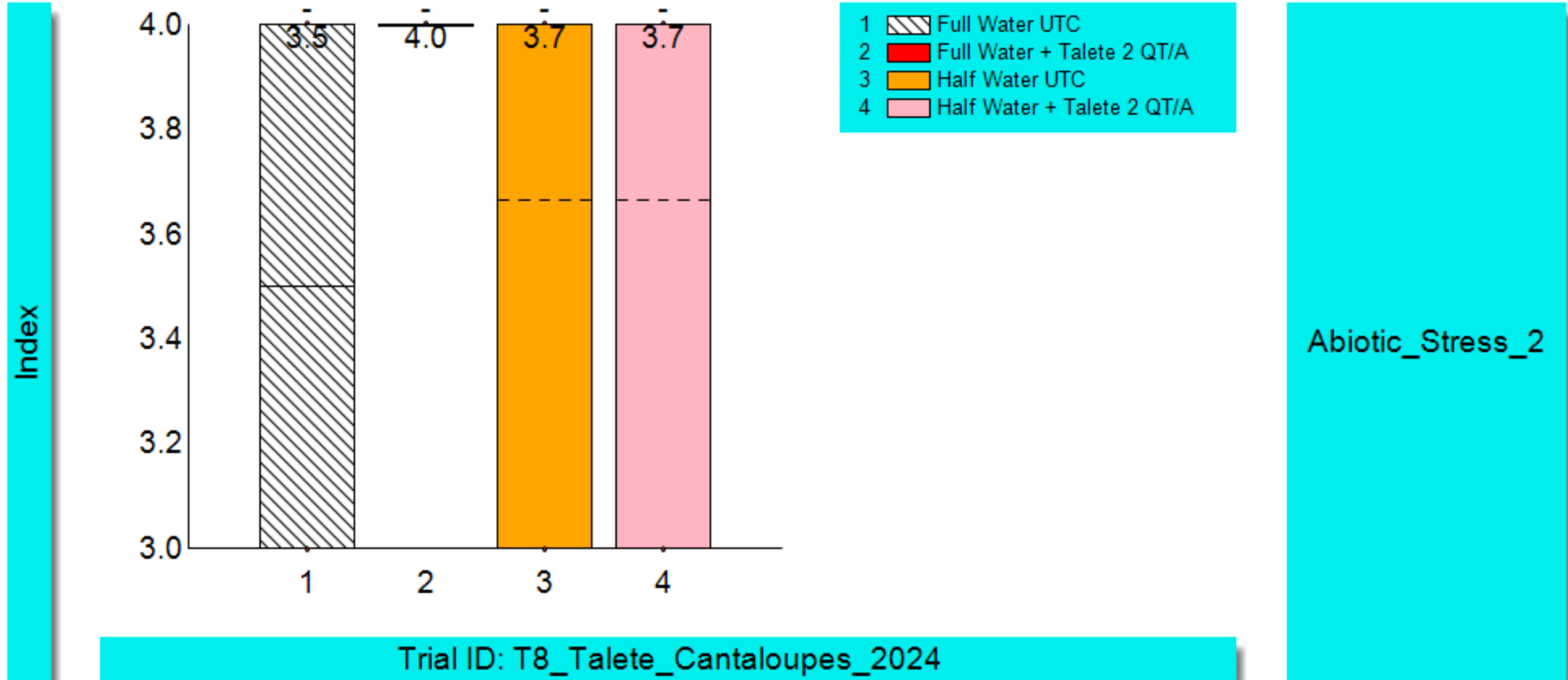
Trial ID: T8\_Talete\_Cantaloupes\_2024

# Abiotic Stress

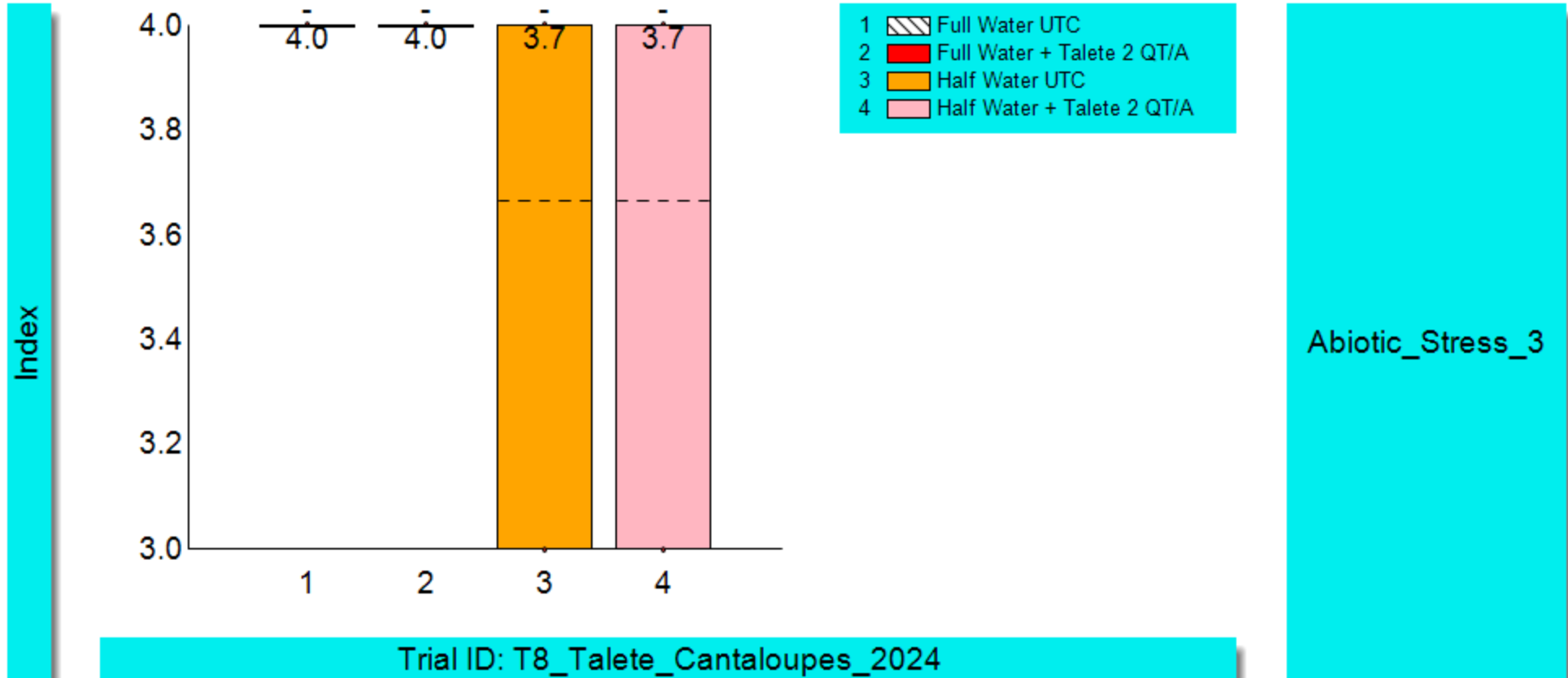
### Talete Yuma Cantaloupe Trial. Abiotic Stress



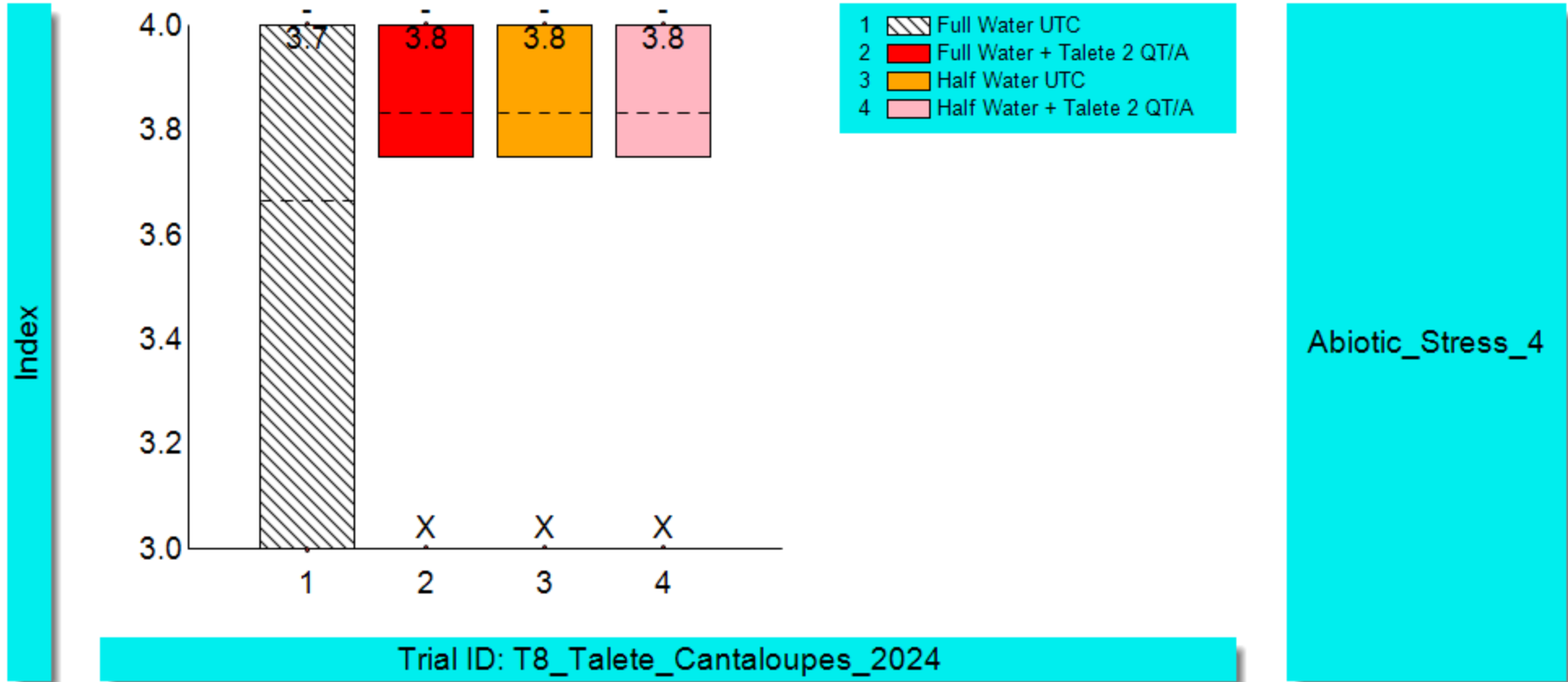
### Talete Yuma Cantaloupe Trial. Abiotic Stress



### Talete Yuma Cantaloupe Trial. Abiotic Stress



### Taleta Yuma Cantaloupe Trial. Abiotic Stress





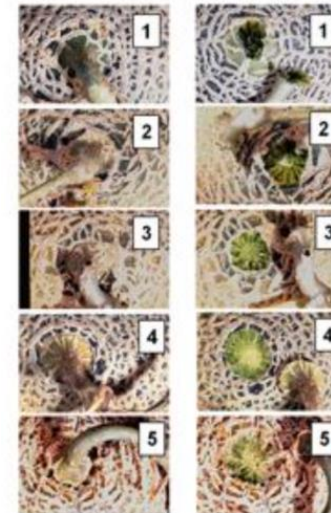
# Harvest

- 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 =  $\frac{1}{4}$  slip
  - 2 =  $\frac{1}{2}$  slip
  - 3 =  $\frac{3}{4}$  slip
  - 4 = full slip (very ripe)



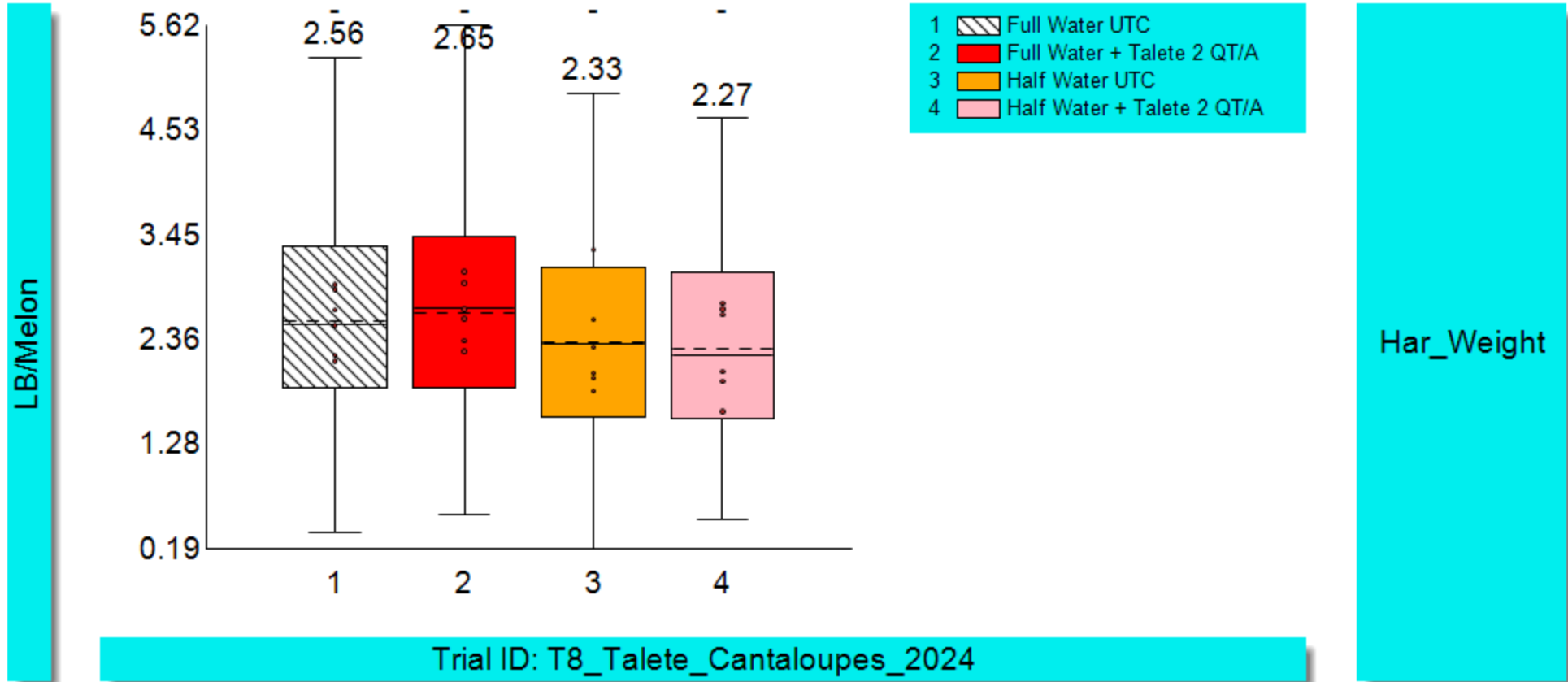
## “Slip” & Cantaloupe Ripeness

1. Full size melon, no slip; “pull” fruit.
2. Slip just starting, near  $\frac{1}{4}$  slip. Requires high thumb force to push stem from fruit
3.  $\frac{1}{2}$ - $\frac{3}{4}$  slip; melon can be pushed with moderate thumb pressure from stem.
4. Full slip; stem scar with fresh appearance; stem easily pushed from fruit
5. Slip occurred day prior; very dry stem end; melon may be soft.

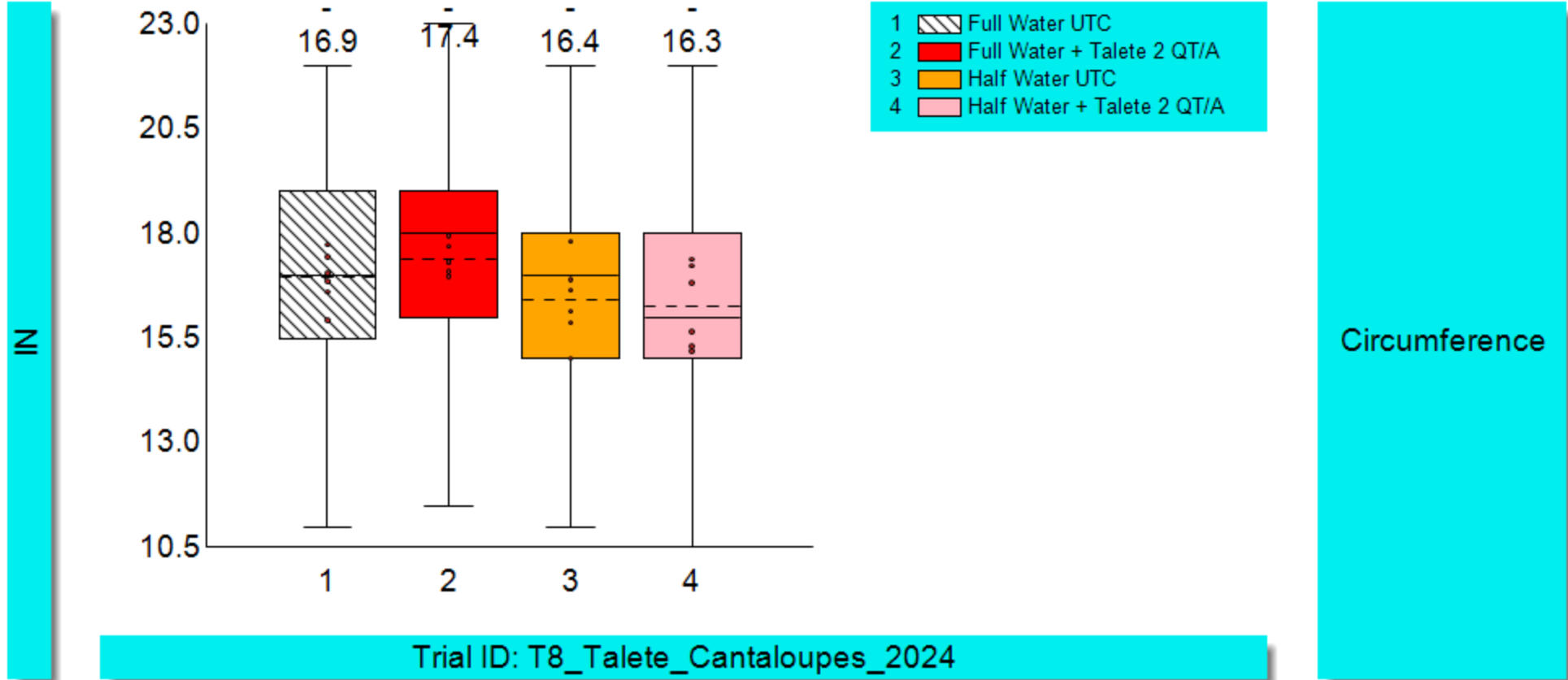
<https://postharvest.ucdavis.edu/produce-facts-sheets/cantaloupe>

- 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.

### Taleta Yuma Cantaloupe Trial. Individual Melon Weight



### Taleta Yuma Cantaloupe Trial. Individual Melon Size



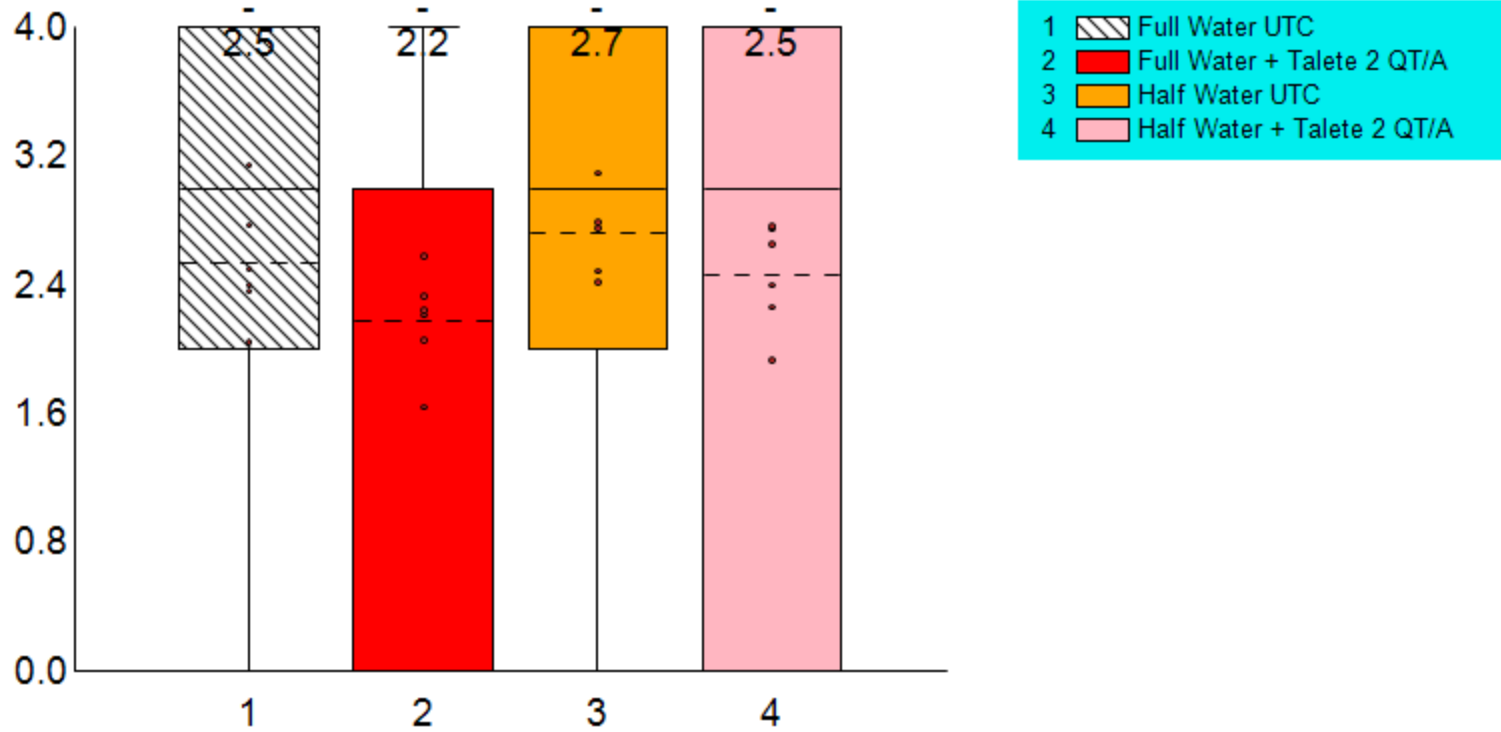
≅

Circumference

Trial ID: T8\_Taleta\_Cantaloupes\_2024

### Taleta Yuma Cantaloupe Trial. Individual Melon Maturity

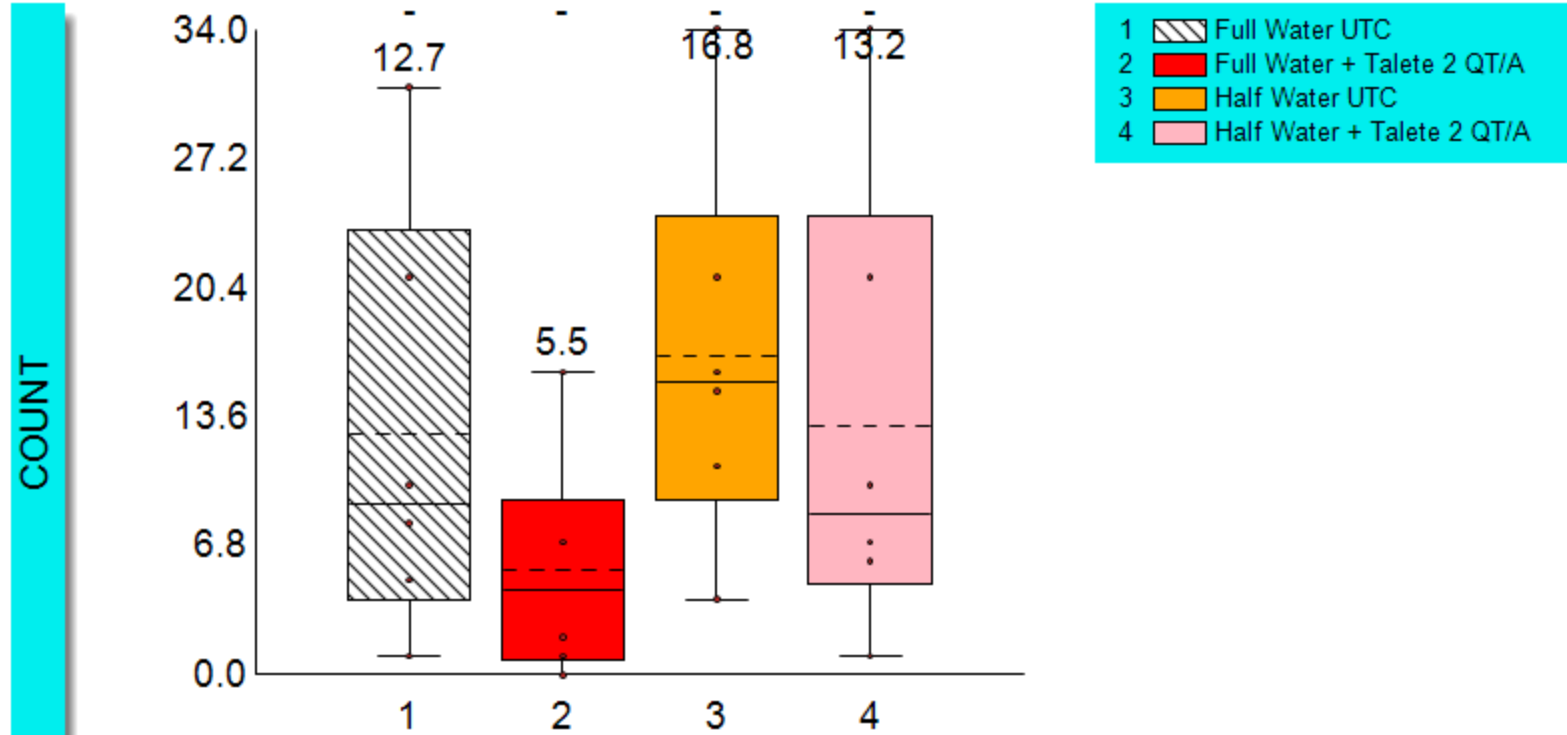
Rating 0-4



Har\_Slip

Trial ID: T8\_Taleta\_Cantaloupes\_2024

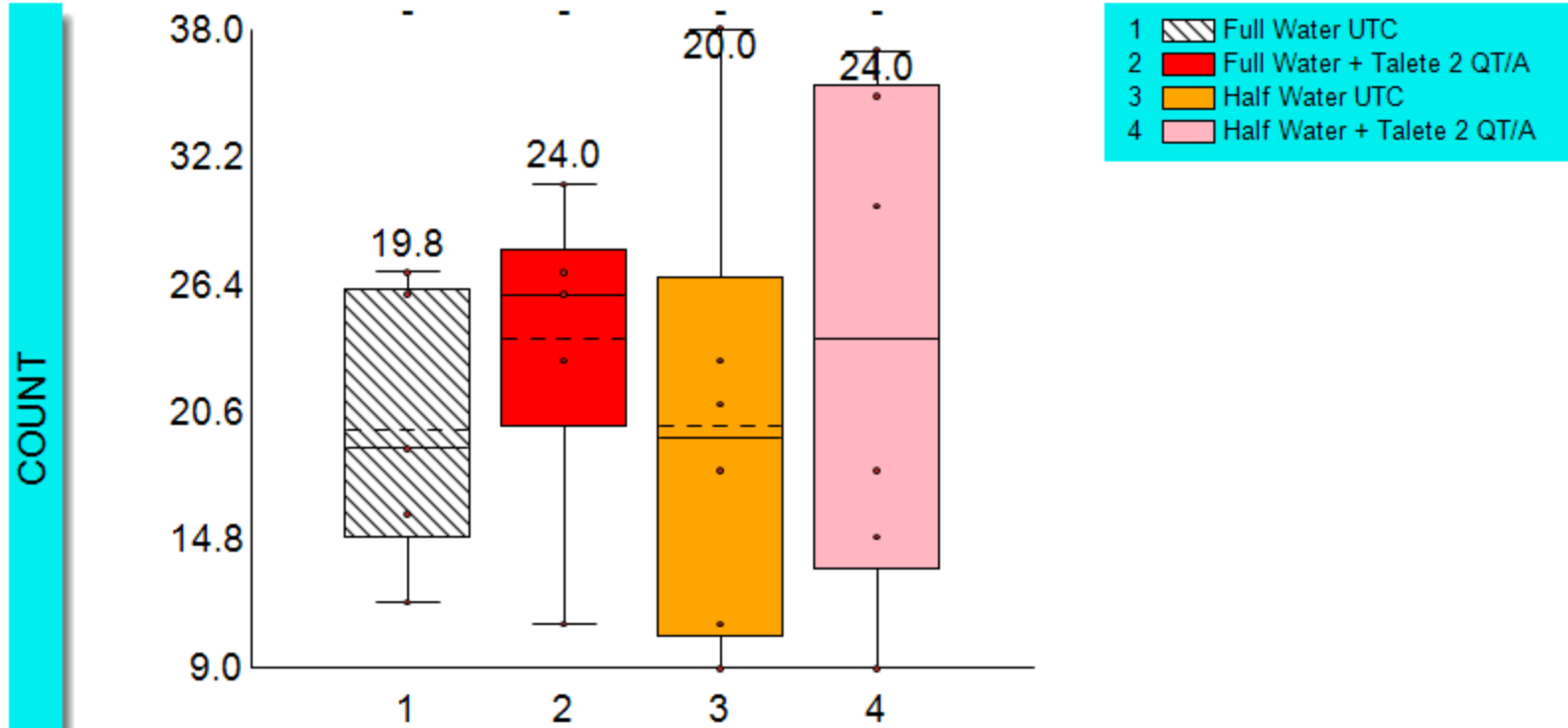
### Talete Yuma Cantaloupe Trial. Number of Sunburned per Plot



Har\_Sunburn

Trial ID: T8\_Talete\_Cantaloupes\_2024

### Taleta Yuma Cantaloupe Trial. Number of Keepers per Plot

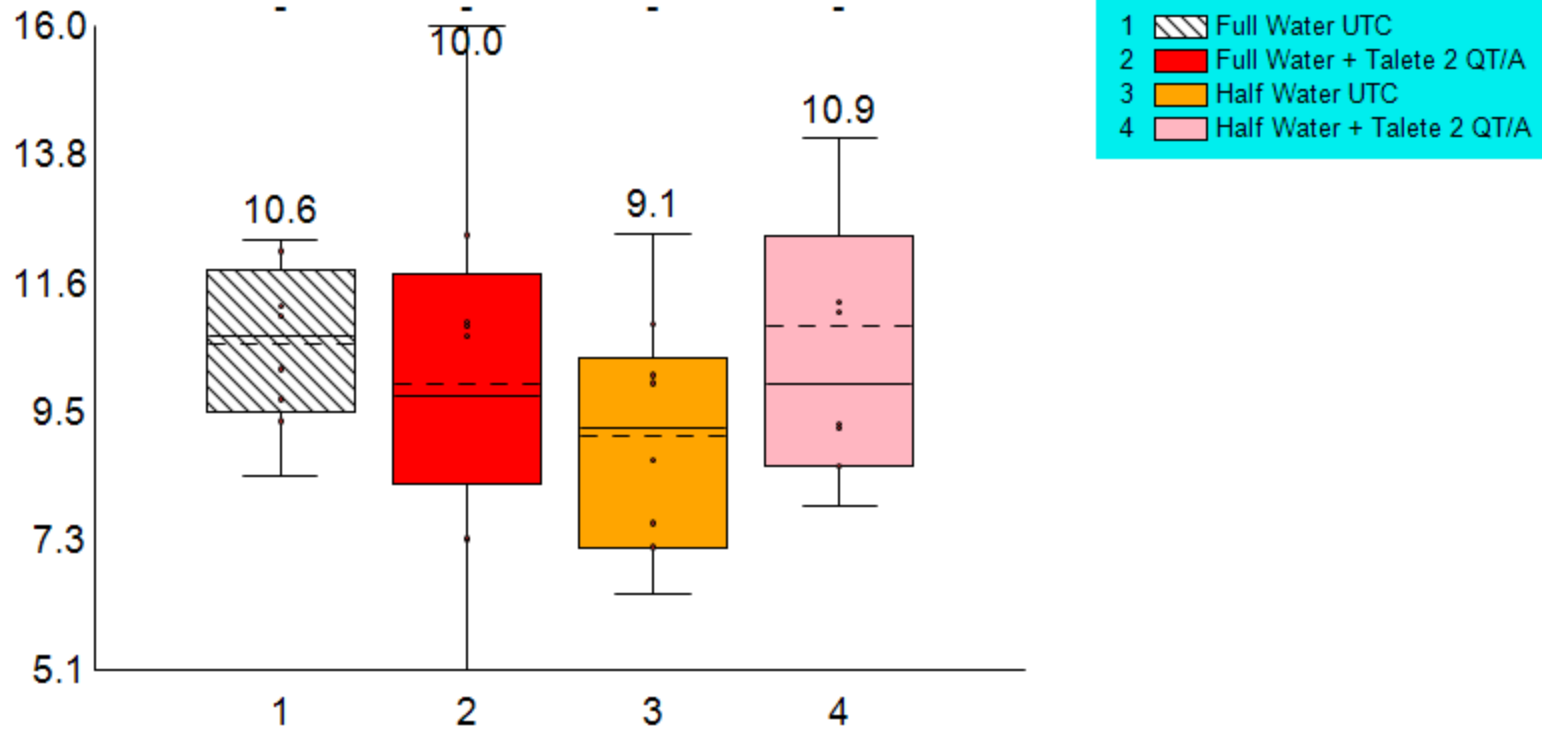


Har\_Keeper

Trial ID: T8\_Taleta\_Cantaloupes\_2024

Taleta Yuma Cantaloupe Trial. Melon Sugar 3 Plants per Plot

BRIX



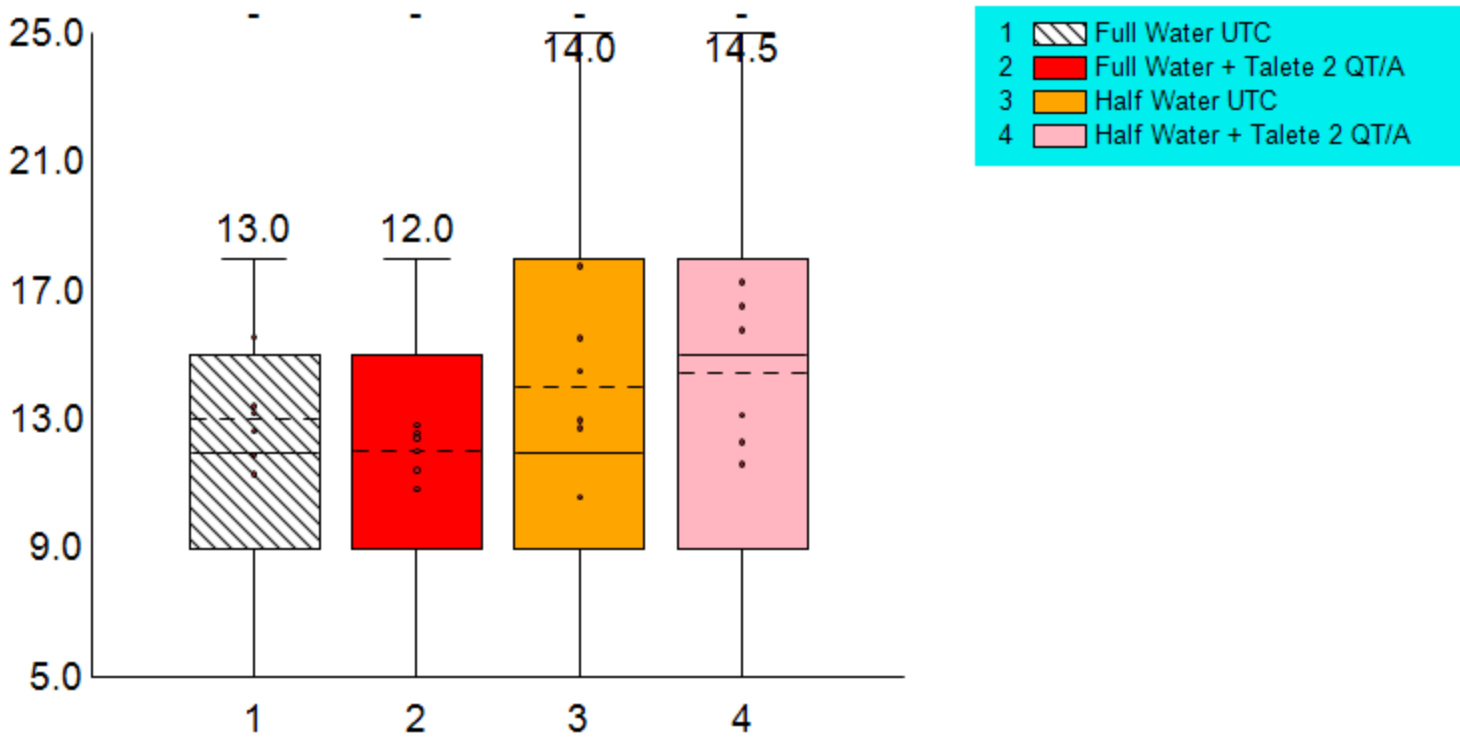
Brix

Trial ID: T8\_Taleta\_Cantaloupes\_2024



### Taleta Yuma Cantaloupe Trial. Melon Sugar 3 Plants per Plot

Grade



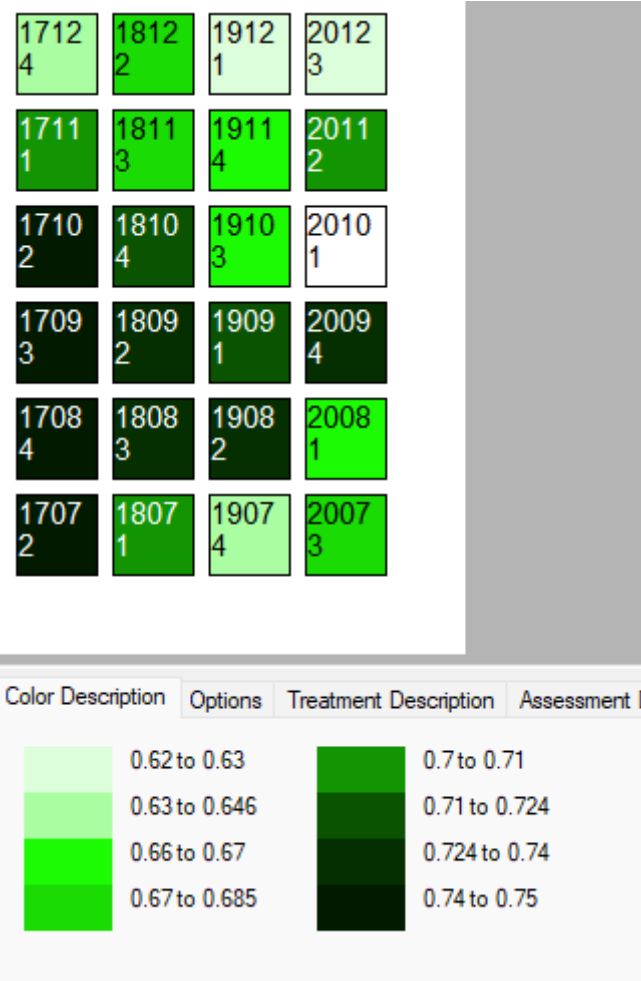
Box Grade

Trial ID: T8\_Taleta\_Cantaloupes\_2024

# Carton Size Grade Yield

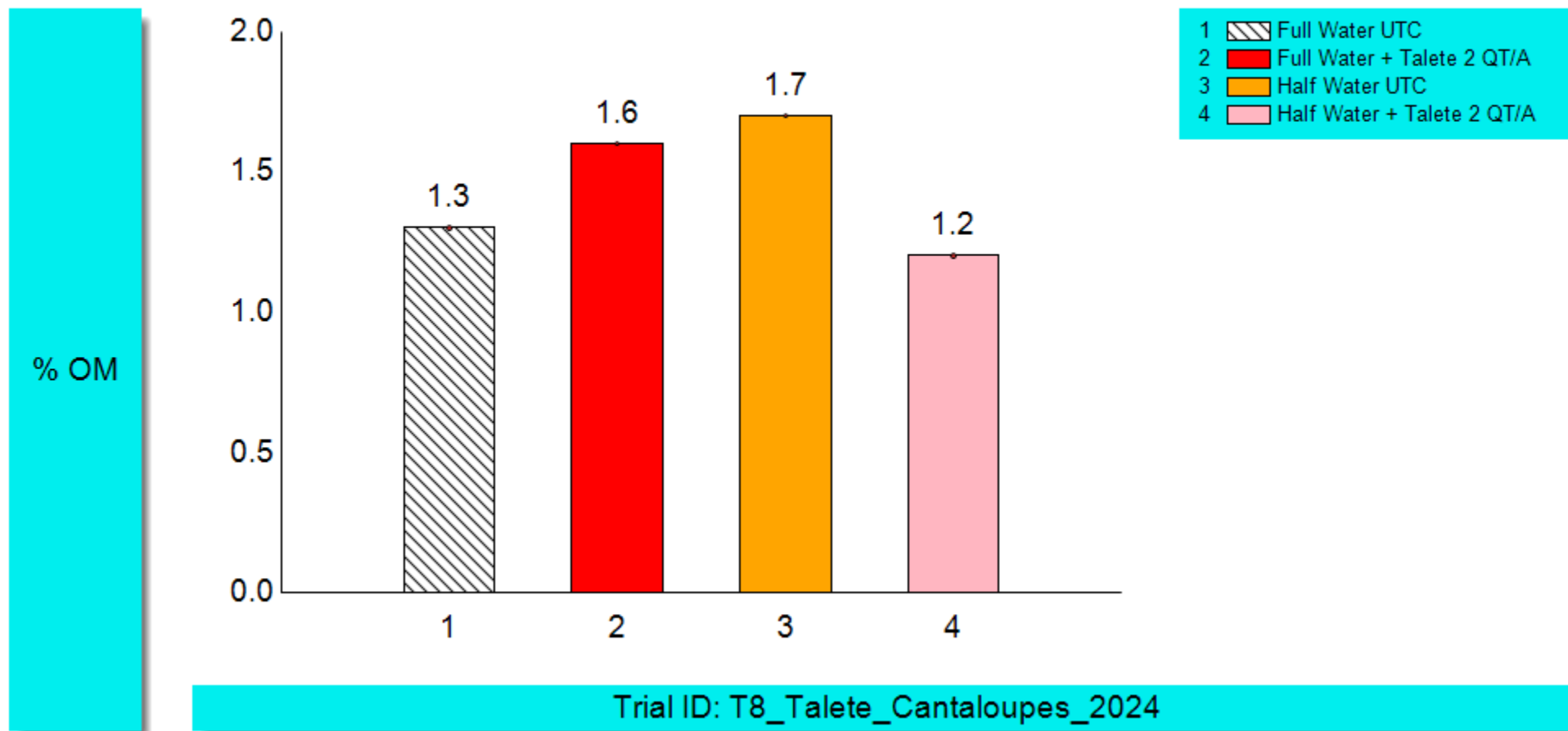
Carton Size Grades	Circumference (IN)	
	min	max
above std	24.38	.
5	22.81	24.35
6	20.45	22.78
9	18.47	20.42
12	16.9	18.44
15	15.74	16.87
18	14.95	15.71
22	14.17	14.92
under std		14.137

<b>T1-UTC, Full Water</b>	<b>abv_std</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>18</b>	<b>22</b>	<b>under_std</b>	0.028926	Acres per trt
Number per Trt	0	0	19	67	82	49	27	6	42	292	Total number per trt
Cartons per Trt	NA	0.0	3.2	7.4	6.8	3.3	1.5	0.3	NA	22.5	Marketable Cartons per trt
Cartons per AC	NA	0	109	257	236	113	52	9	NA	<b>777</b>	<b>T1: Marketable Cartons per ac</b>
<b>T2-Talate, Full Water</b>	<b>abv_std</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>18</b>	<b>22</b>	<b>under_std</b>	0.028926	Acres per trt
Number per Trt	0	1	19	110	107	47	26	2	41	353	Total number per trt
Cartons per Trt	NA	0.2	3.2	12.2	8.9	3.1	1.4	0.1	NA	29.2	Marketable Cartons per trt
Cartons per AC	NA	7	109	423	308	108	50	3	NA	<b>1009</b>	<b>T2: Marketable Cartons per ac</b>
<b>T3-UTC, Half Water</b>	<b>abv_std</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>18</b>	<b>22</b>	<b>under_std</b>	0.028926	Acres per trt
Number per Trt	0	0	7	47	88	40	33	3	60	278	Total number per trt
Cartons per Trt	NA	0.0	1.2	5.2	7.3	2.7	1.8	0.1	NA	18.4	Marketable Cartons per trt
Cartons per AC	NA	0	40	181	254	92	63	5	NA	<b>635</b>	<b>T4: Marketable Cartons per ac</b>
<b>T4-Talate, Half Water</b>	<b>abv_std</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>18</b>	<b>22</b>	<b>under_std</b>	0.028926	Acres per trt
Number per Trt	0	0	6	46	94	46	45	8	63	308	Total number per trt
Cartons per Trt	NA	0.0	1.0	5.1	7.8	3.1	2.5	0.4	NA	19.9	Marketable Cartons per trt
Cartons per AC	NA	0	35	177	271	106	86	13	NA	<b>687</b>	<b>T4: Marketable Cartons per ac</b>



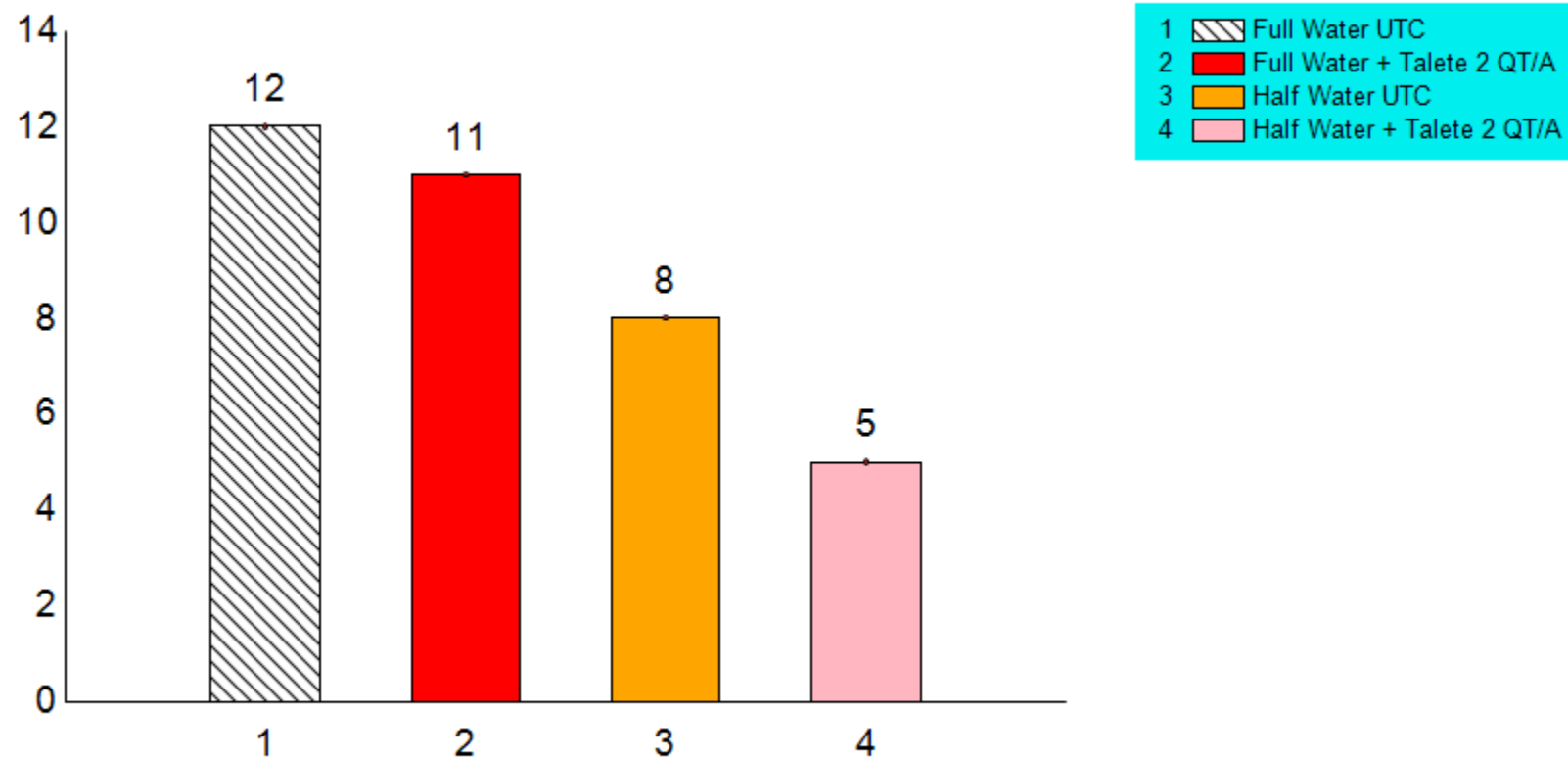
NDVI\_3 field distribution

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)



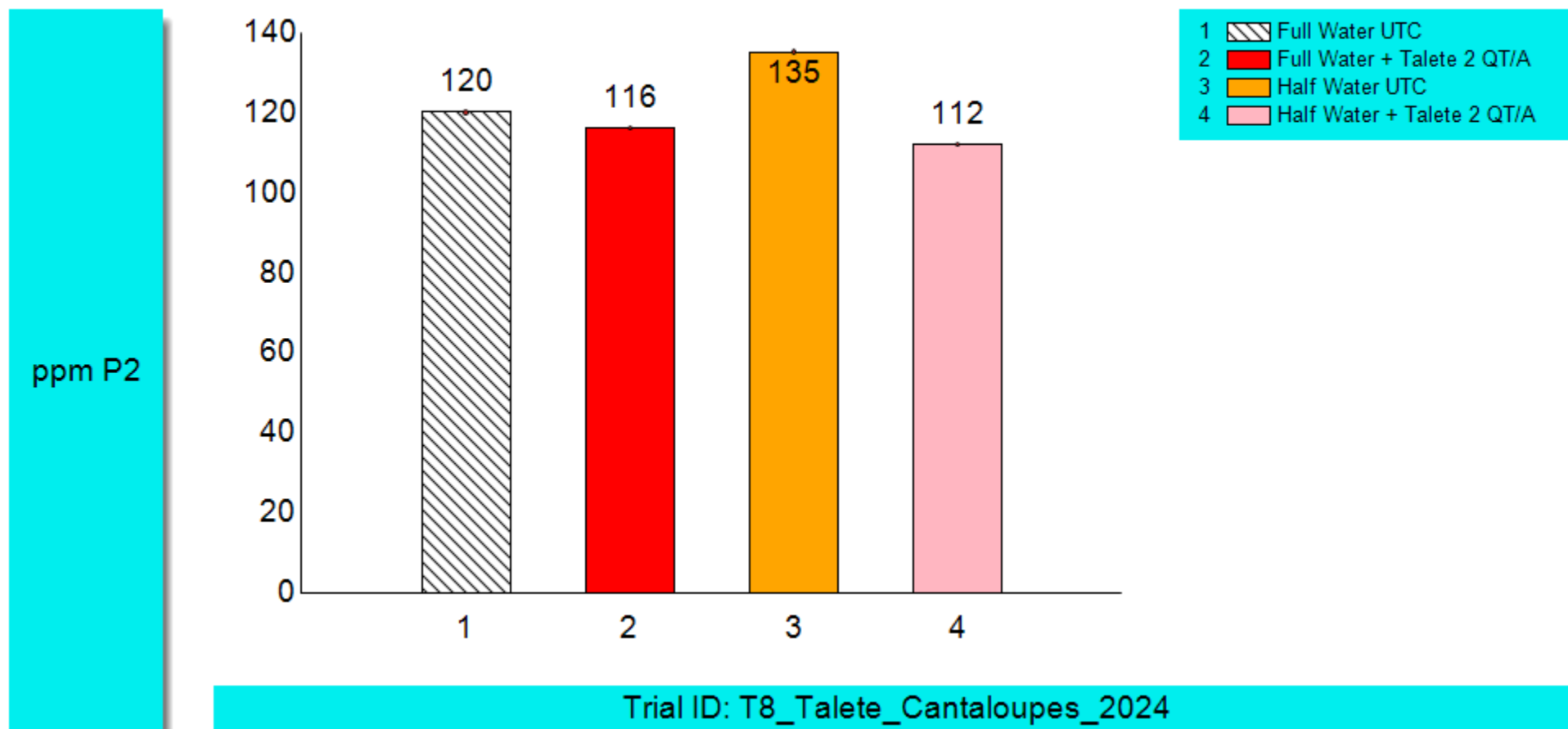
### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

ppm P1

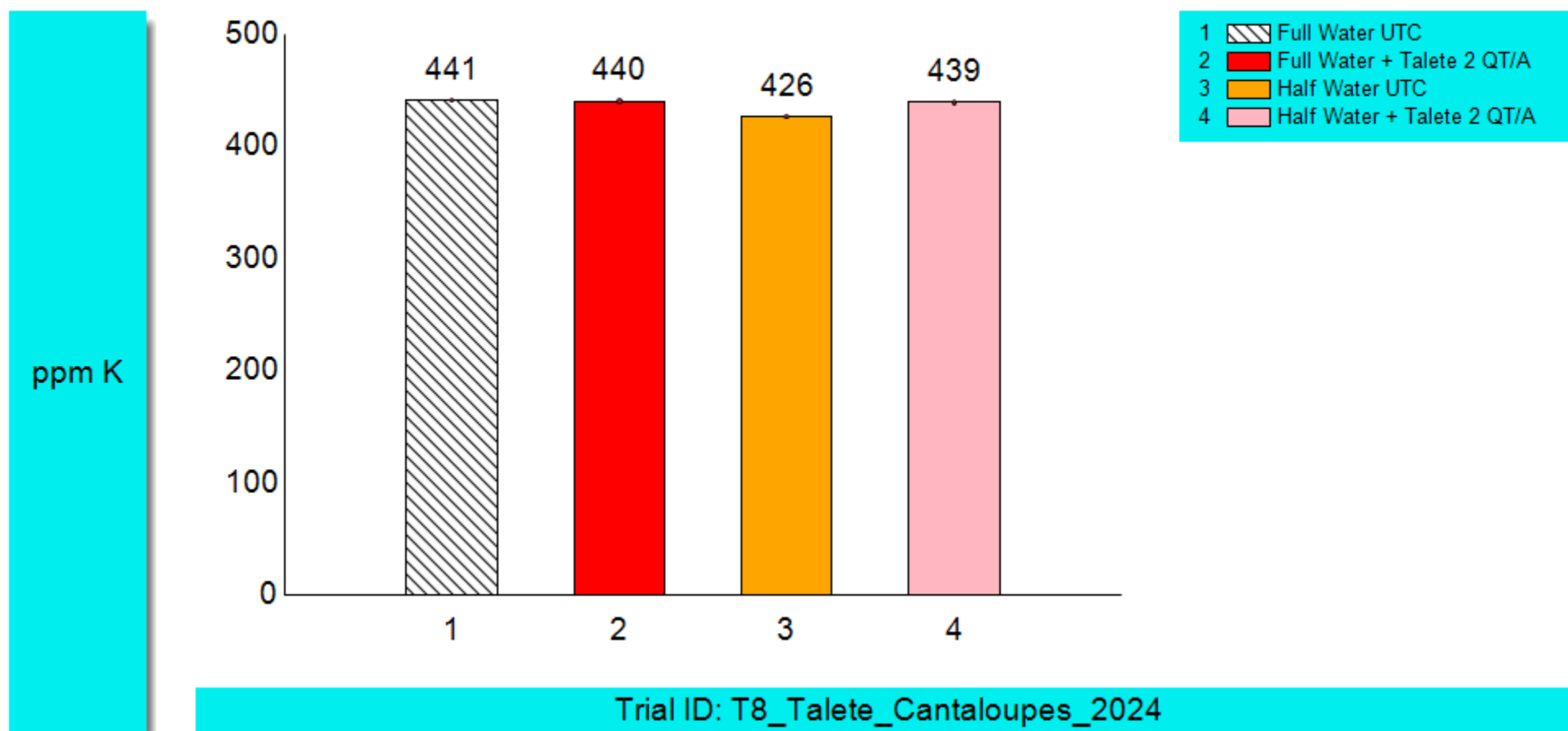


Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

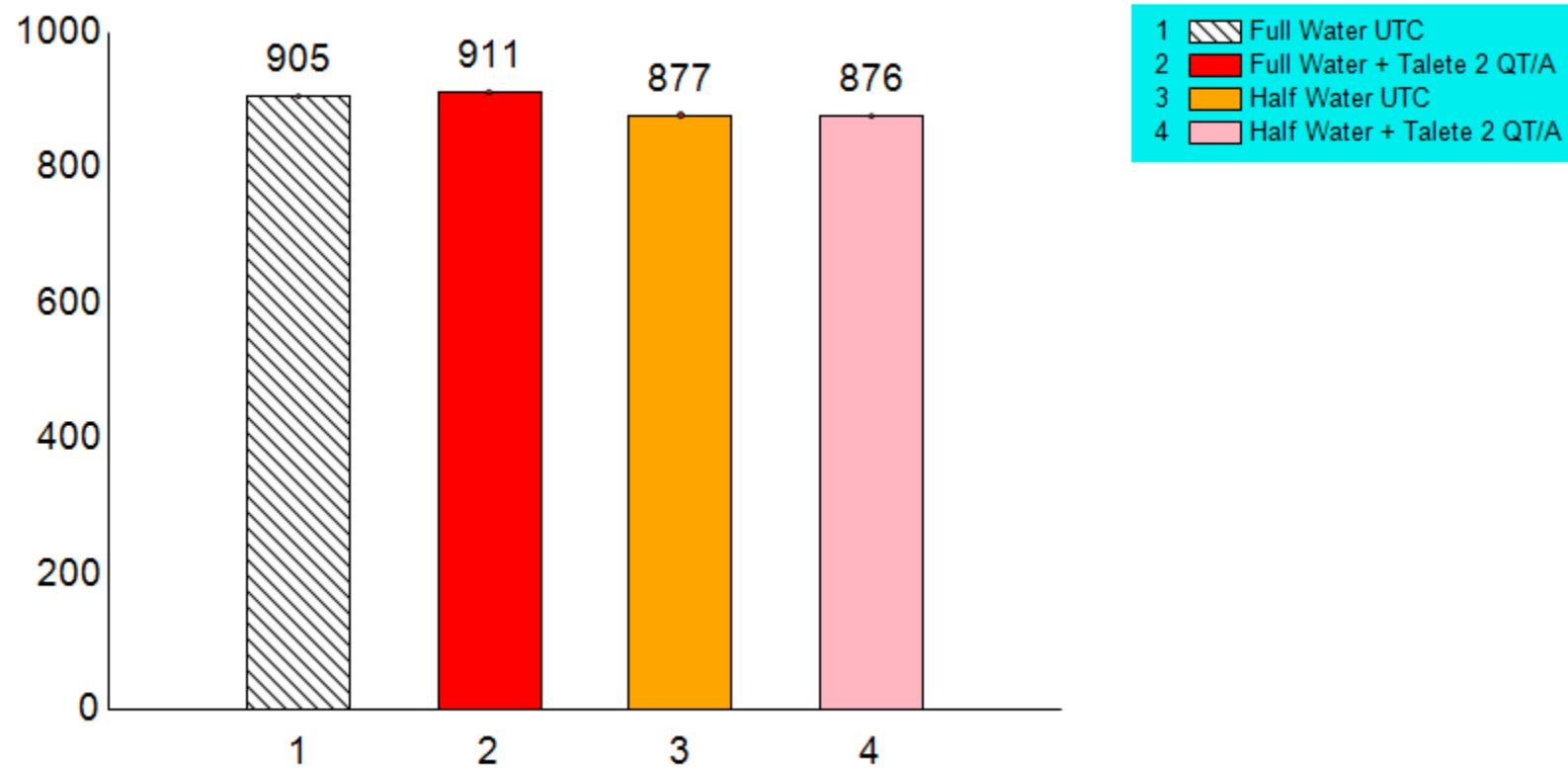


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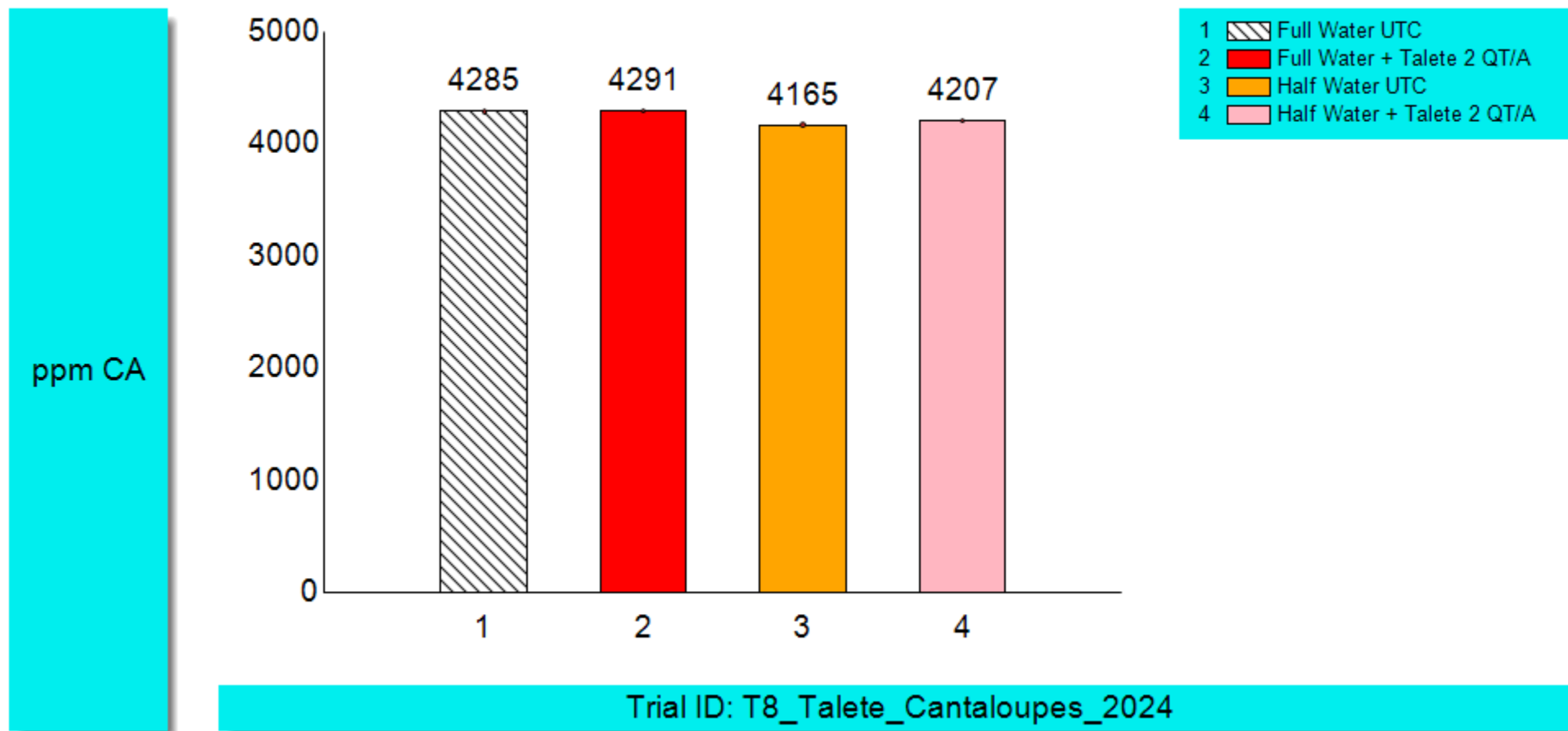
ppm MG



Trial ID: T8\_Talete\_Cantaloupes\_2024

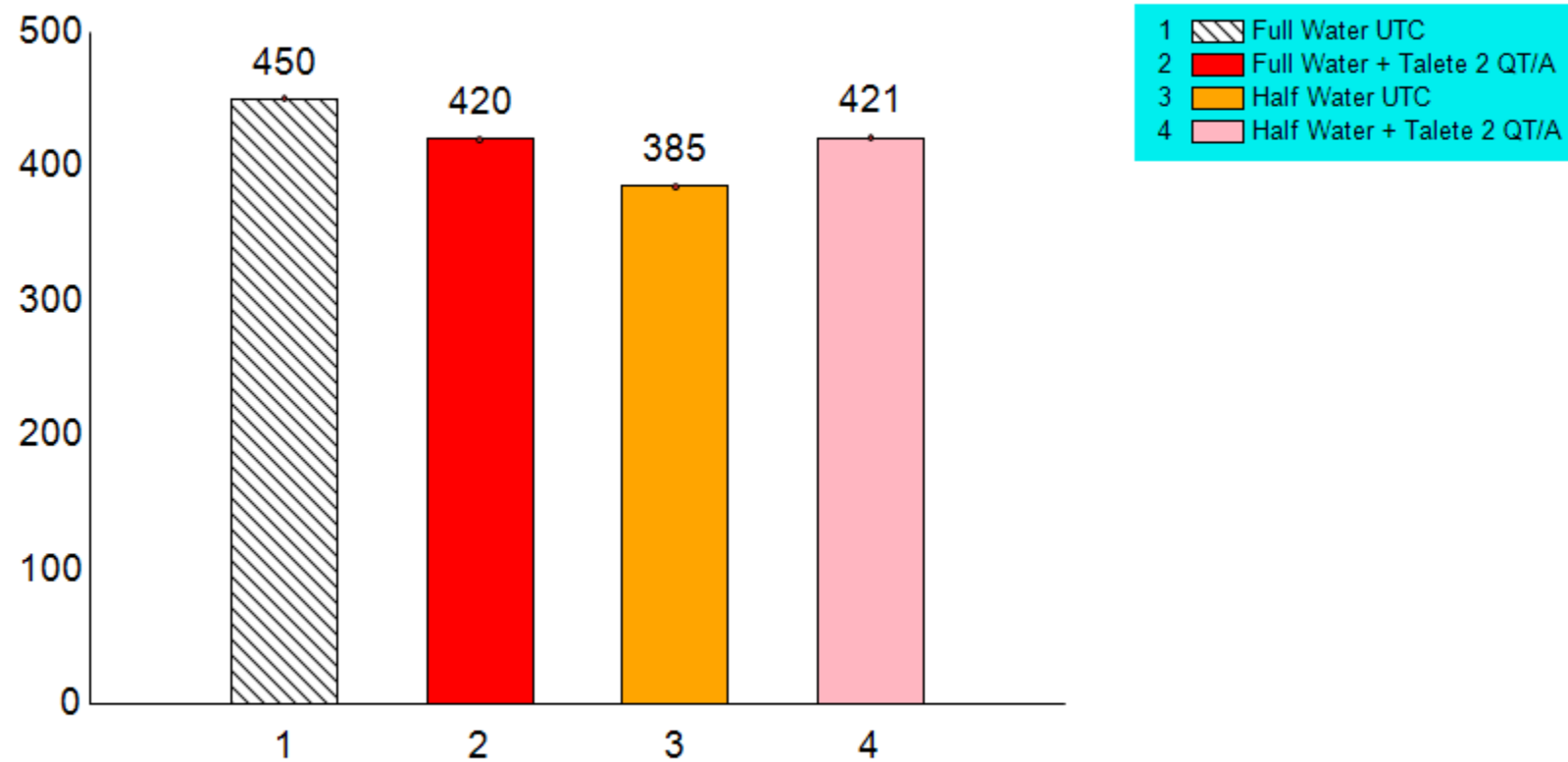


### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)



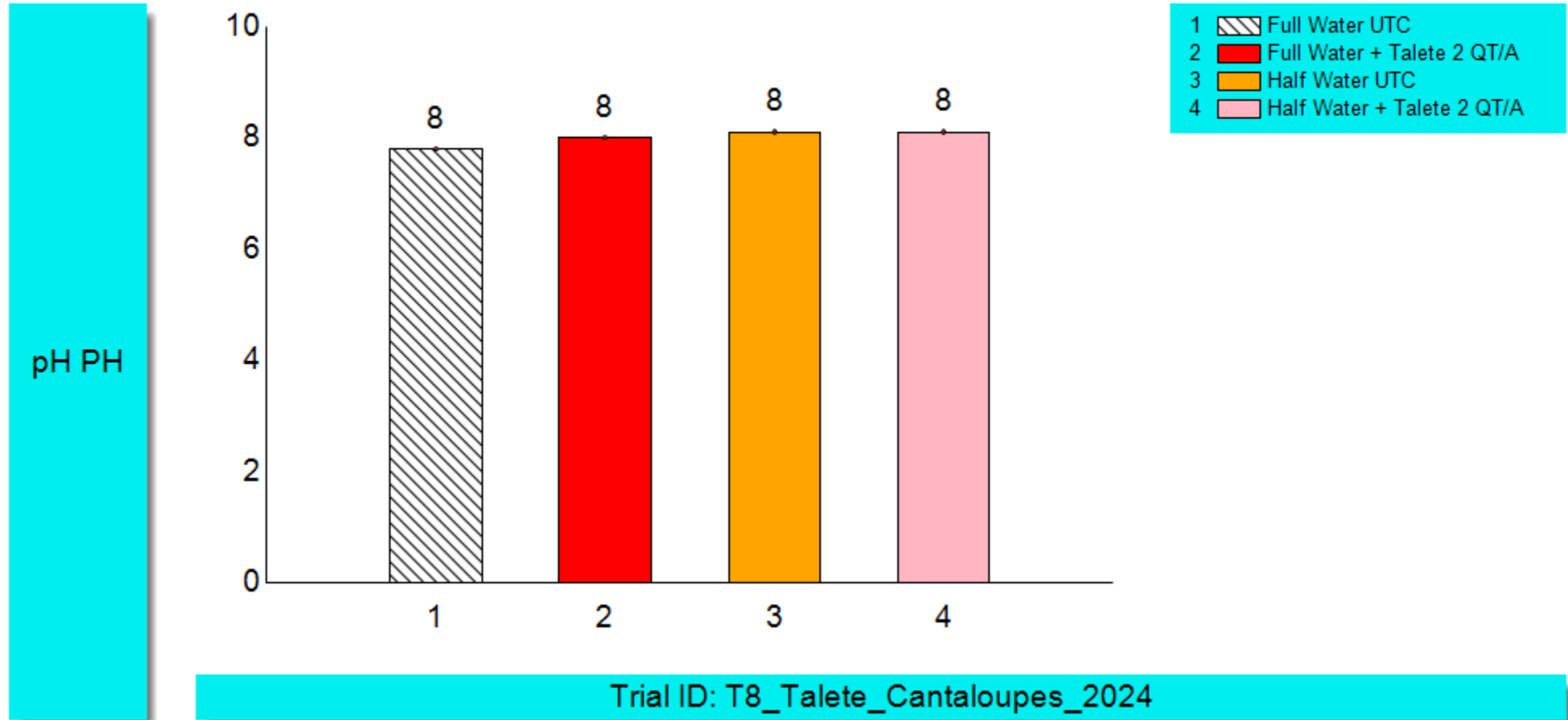
### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

ppm NA



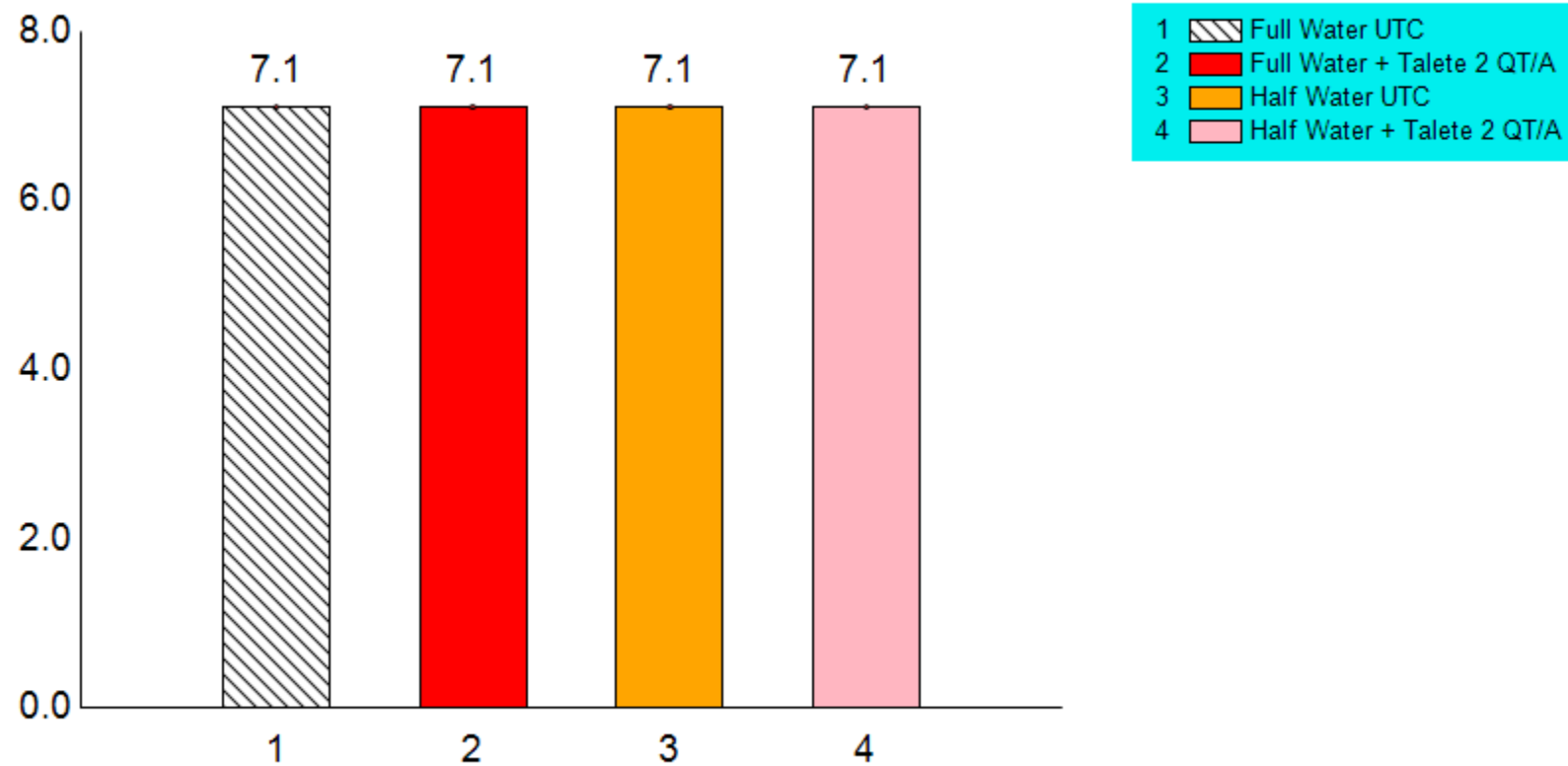
Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)



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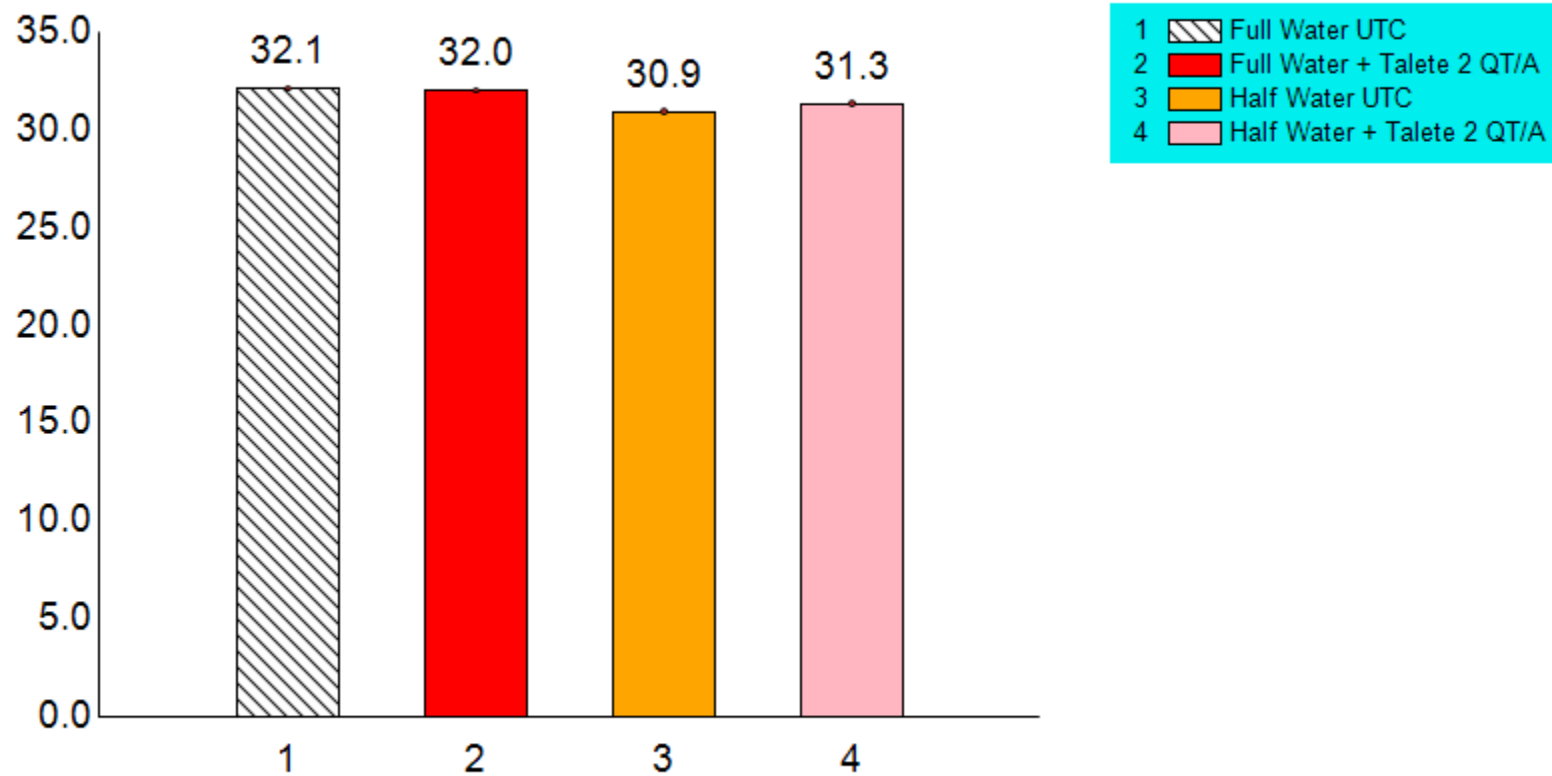
pH BPH



Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

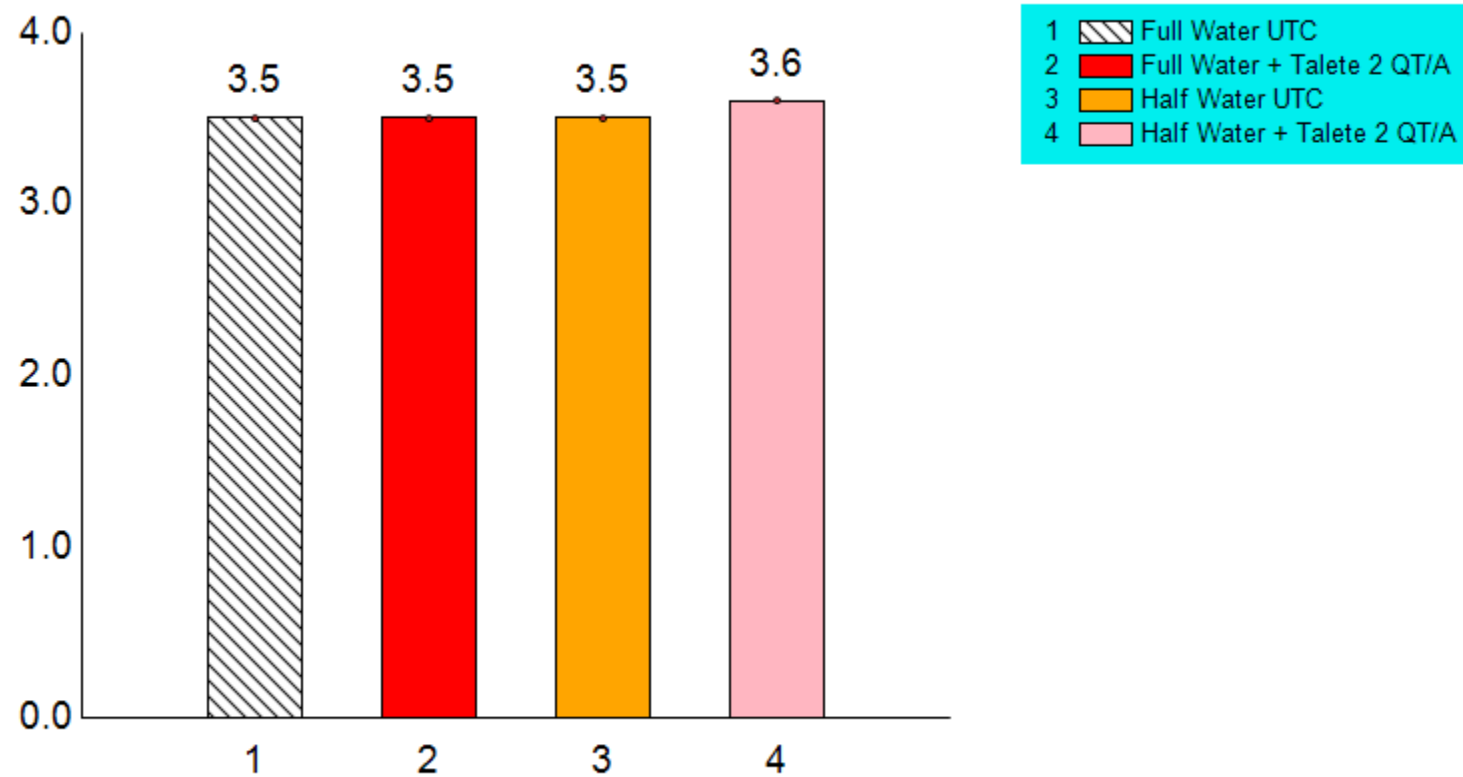
CEC CEC



Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

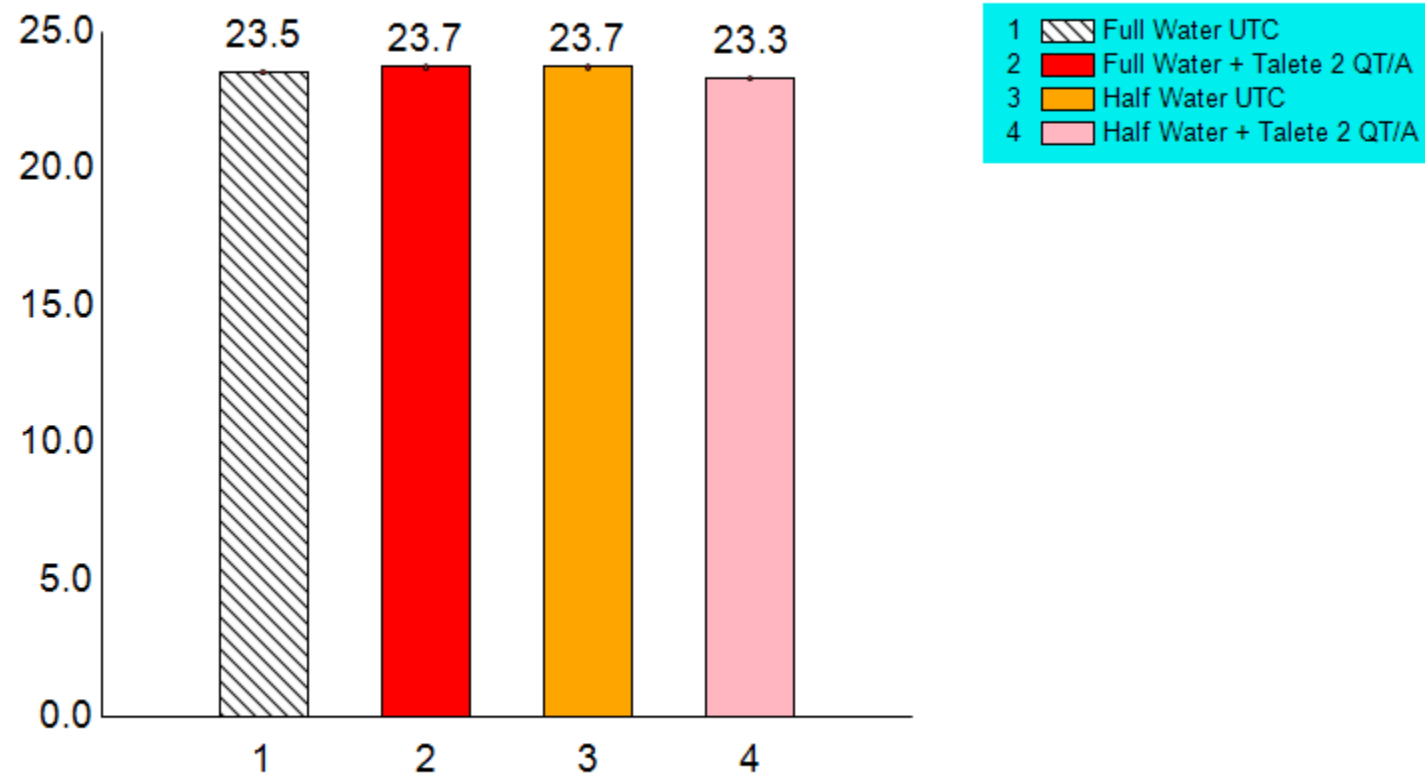
% PERCENT K



Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

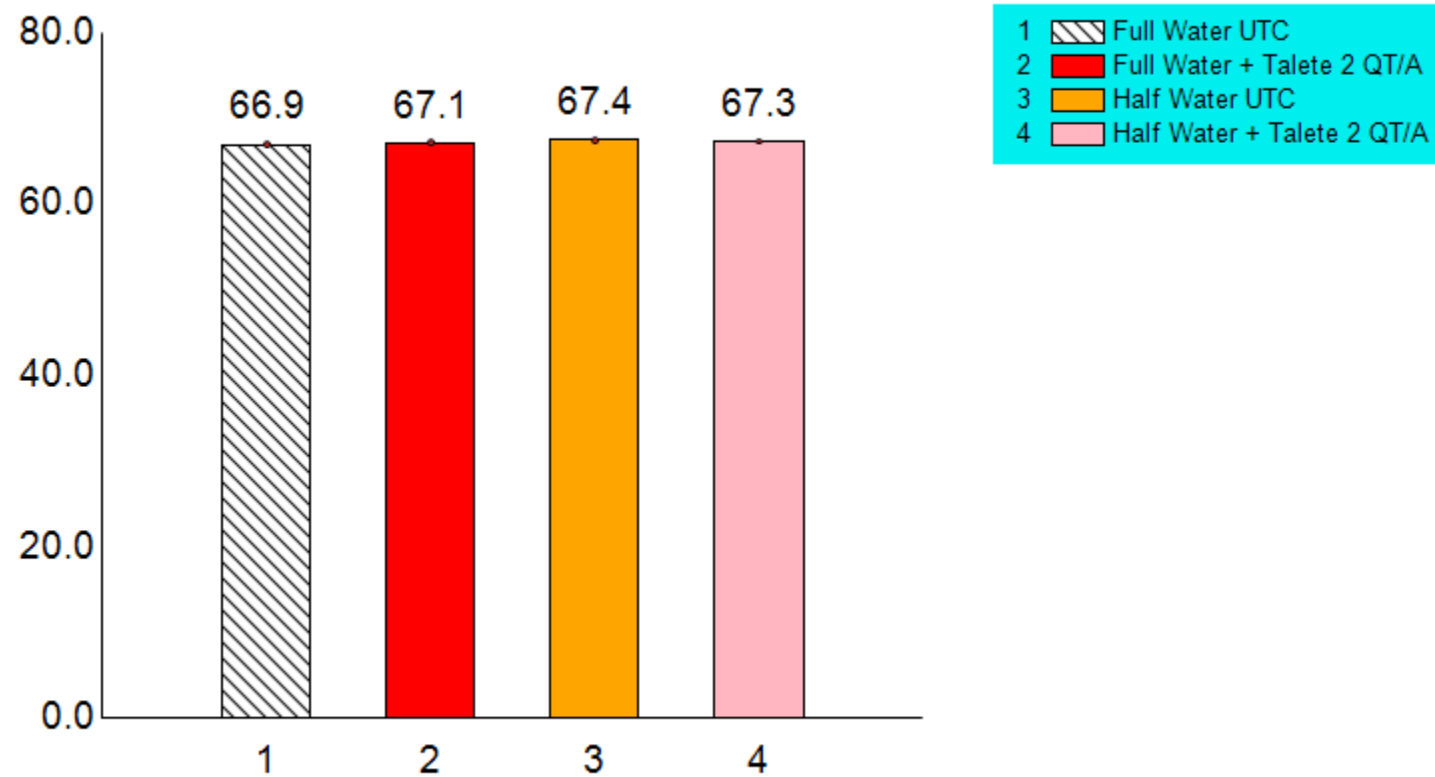
% PERCENT MG



Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

% PERCENT CA

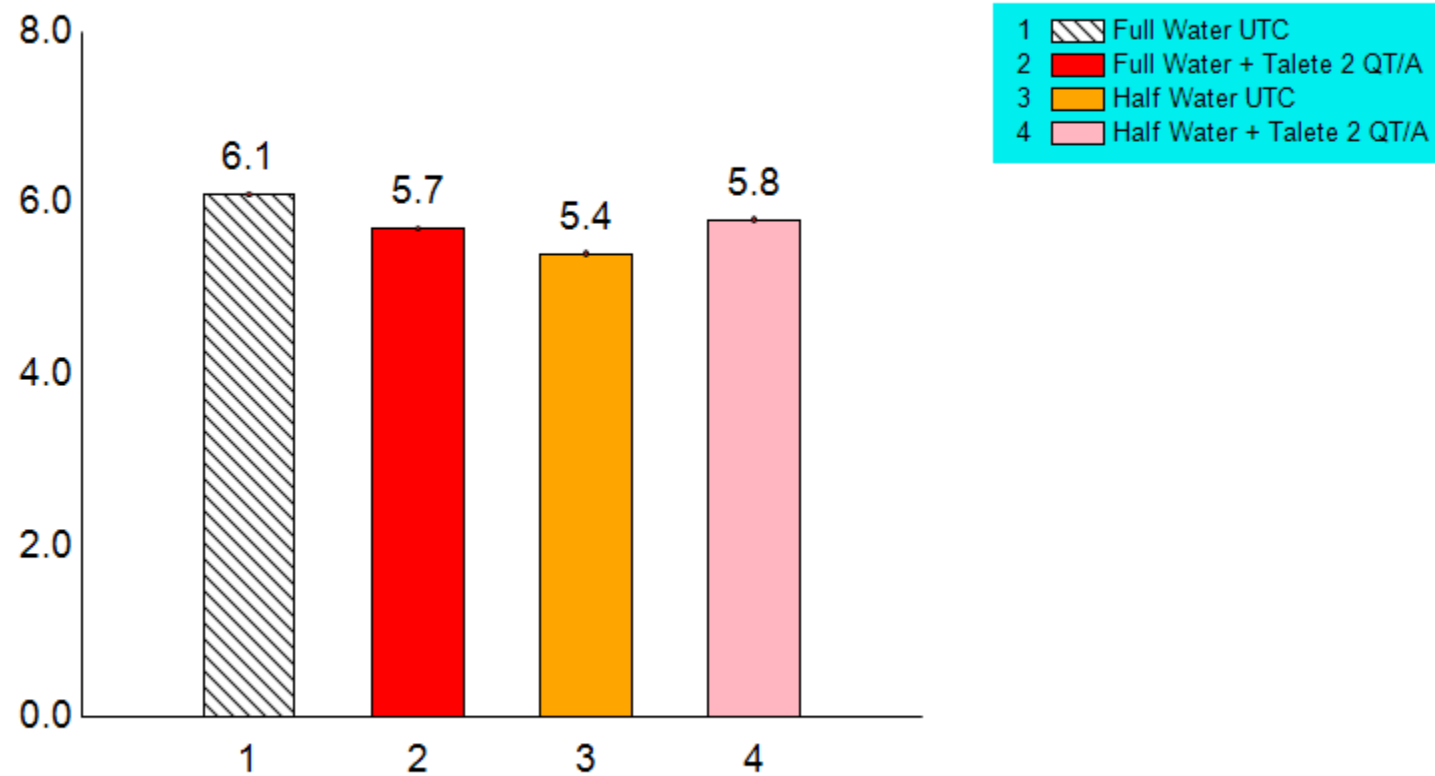


Trial ID: T8\_Talete\_Cantaloupes\_2024



### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

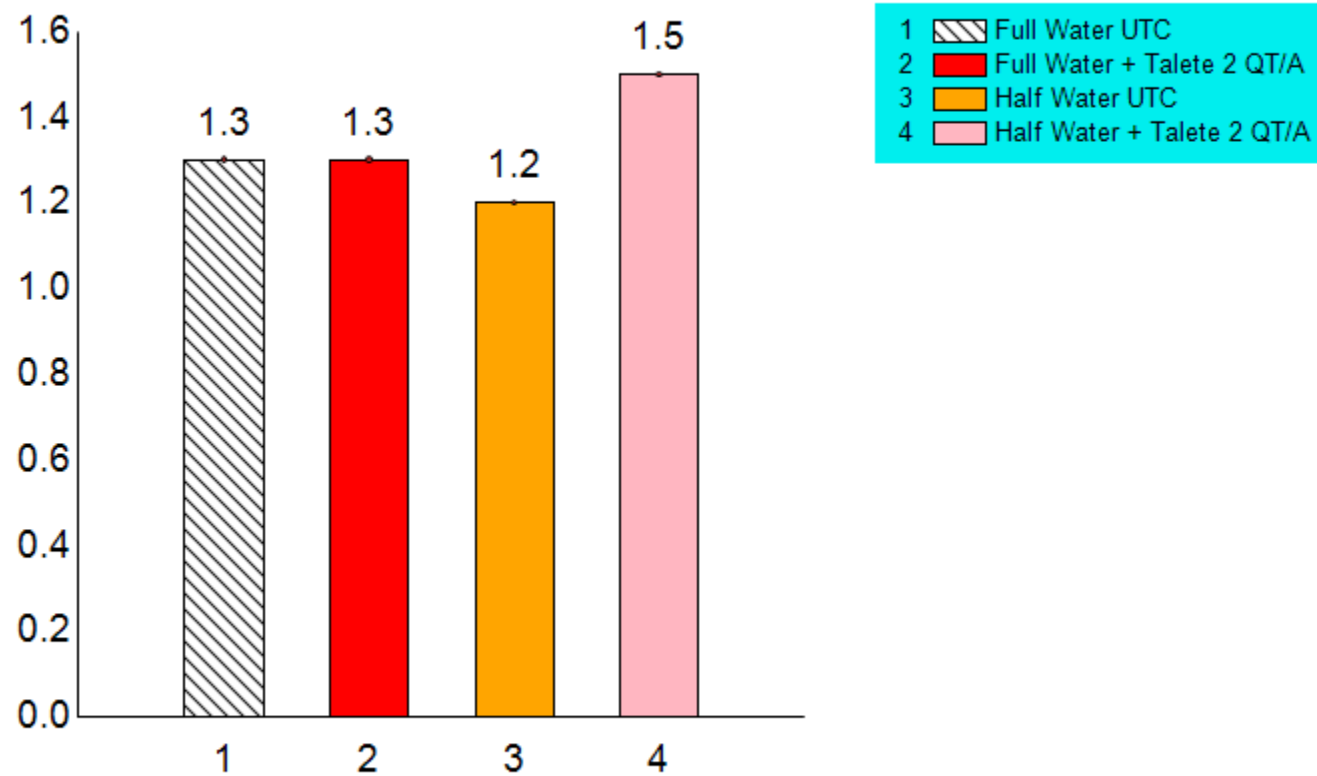
% PERCENT NA



Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

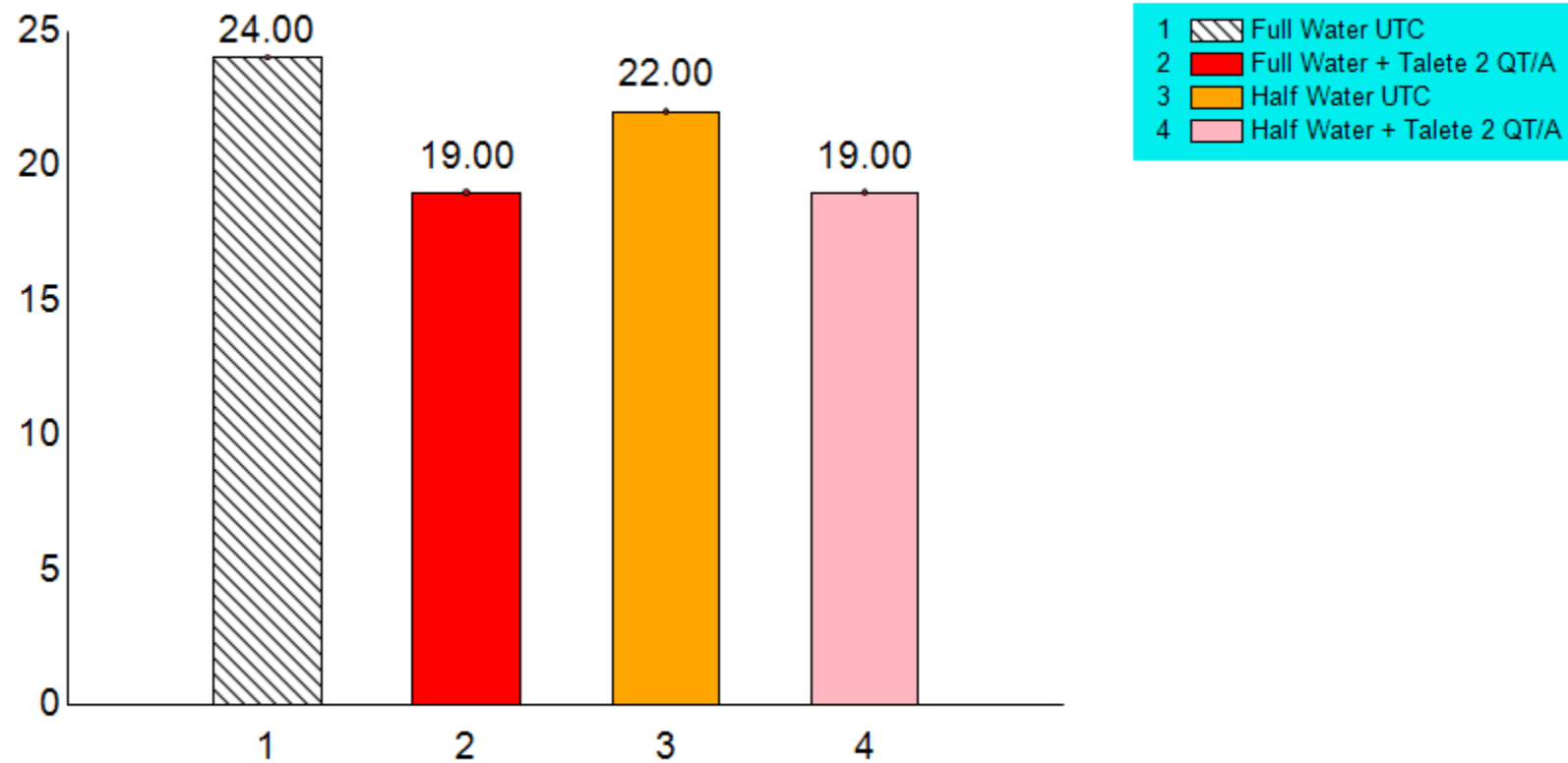
mmhos/cm SOL SALTS



Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Post Harvest Soil Tests (Trt Composite)

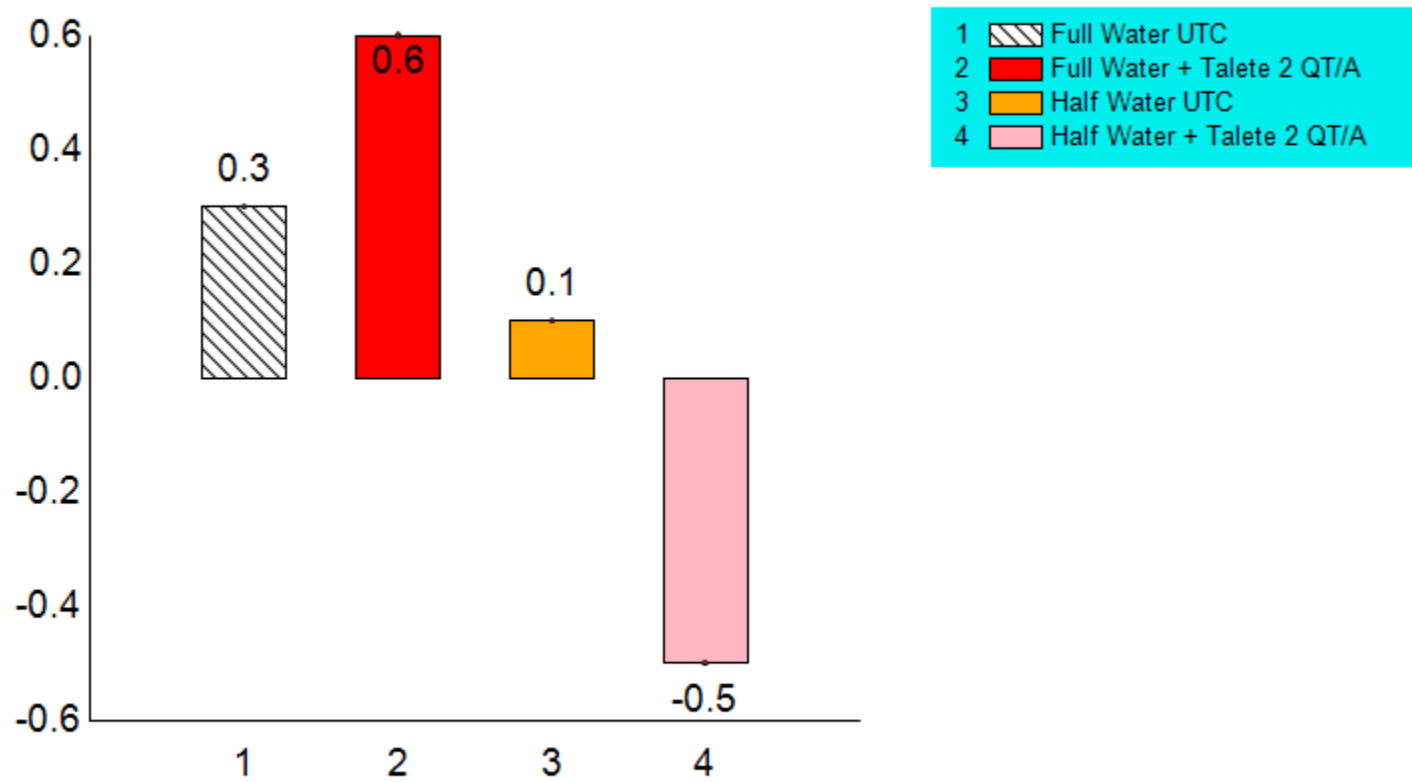
BICARB



Trial ID: T8\_Talete\_Cantaloupes\_2024

# Soil Tests Post-Pre

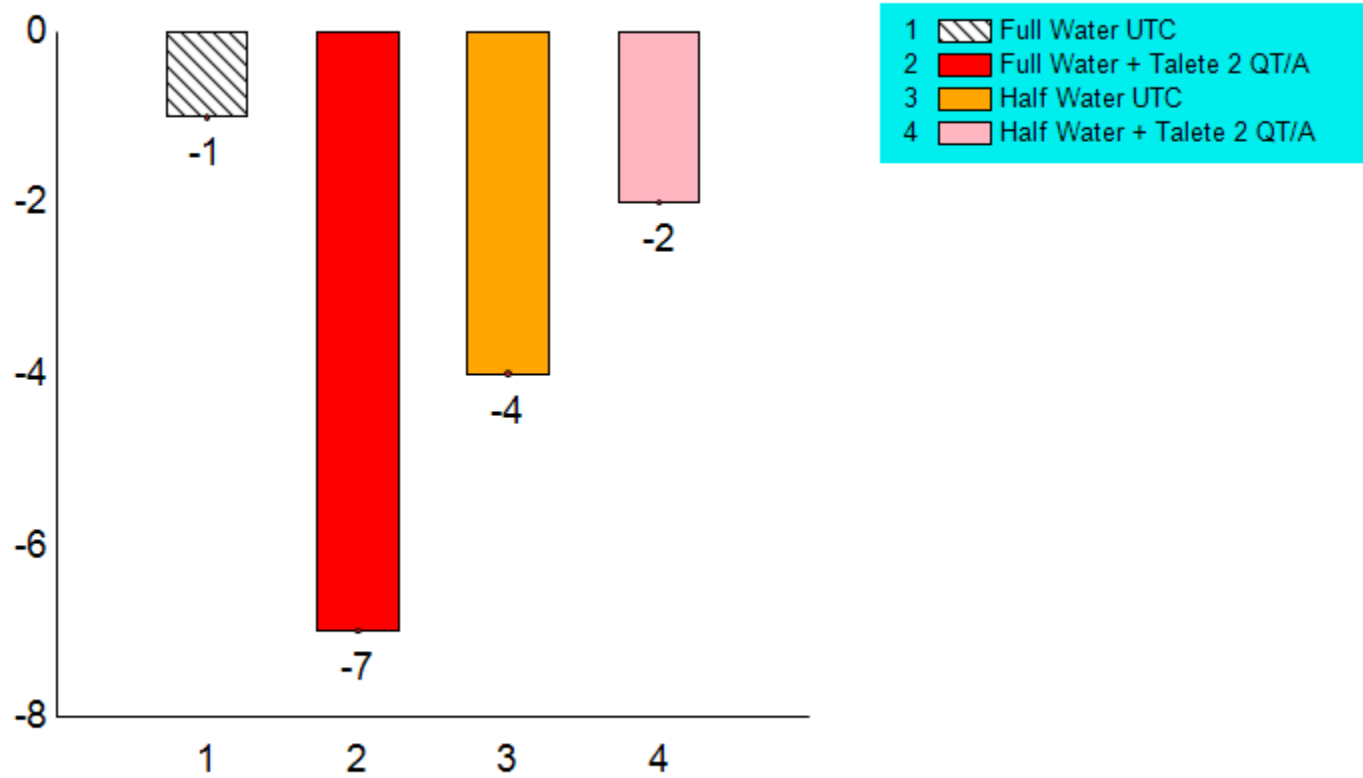
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_OM%

Trial ID: T8\_Talete\_Cantaloupes\_2024

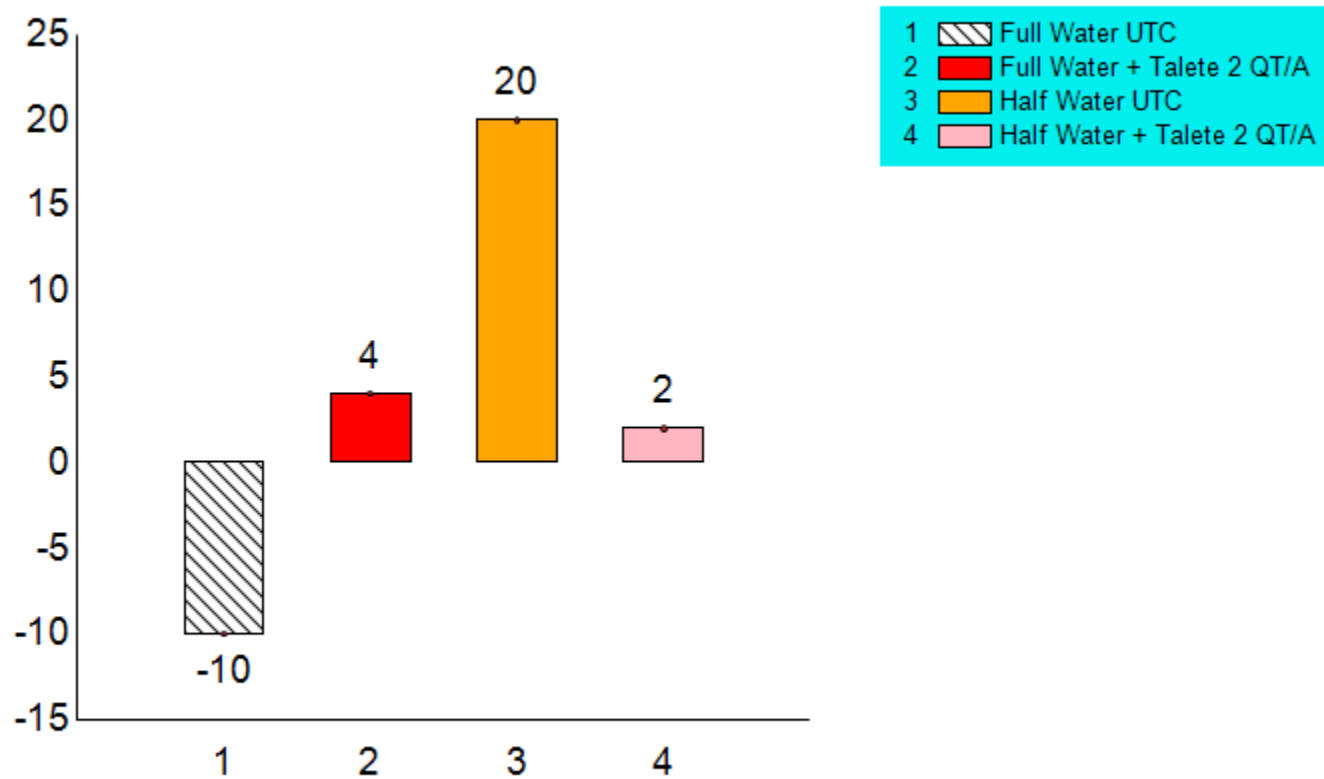
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_P1 ppm

Trial ID: T8\_Talete\_Cantaloupes\_2024

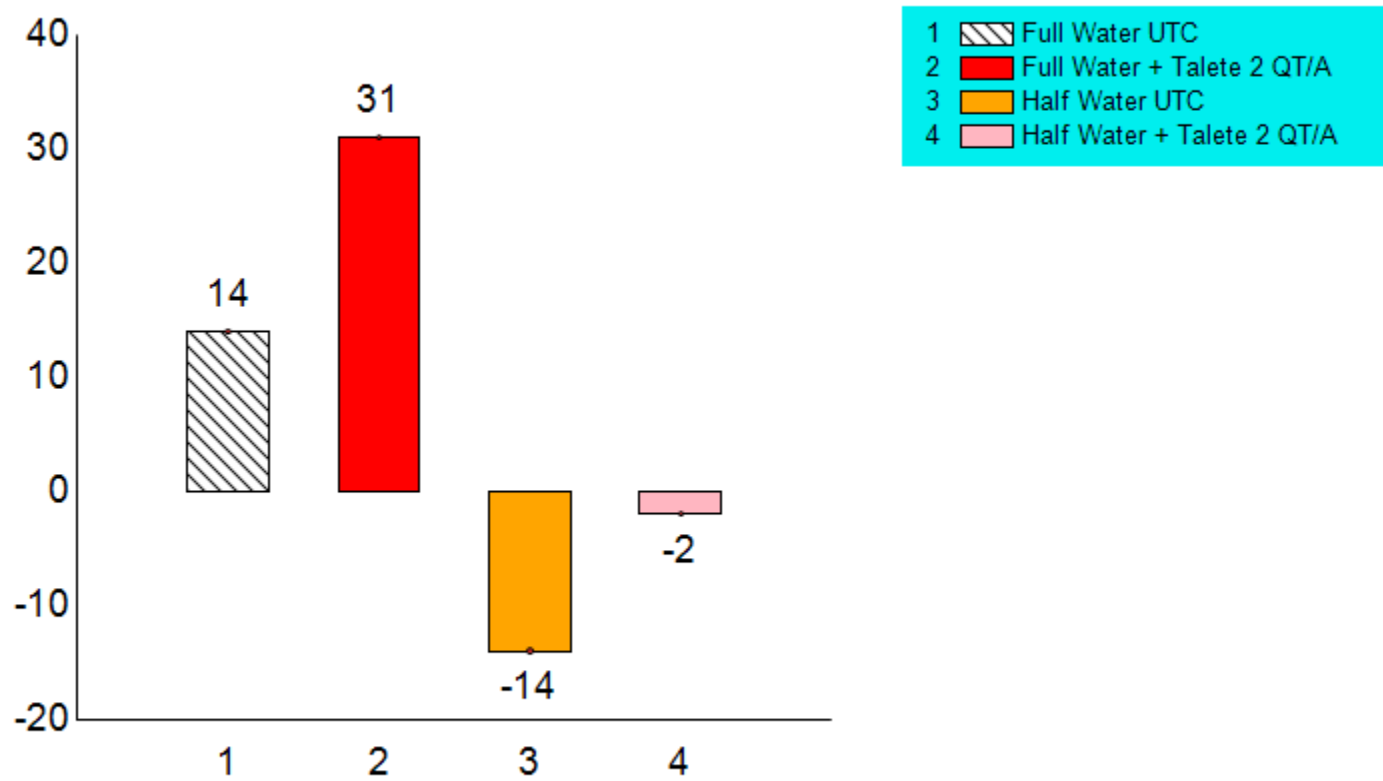
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_P2 ppm

Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Soil Test Post-Plant

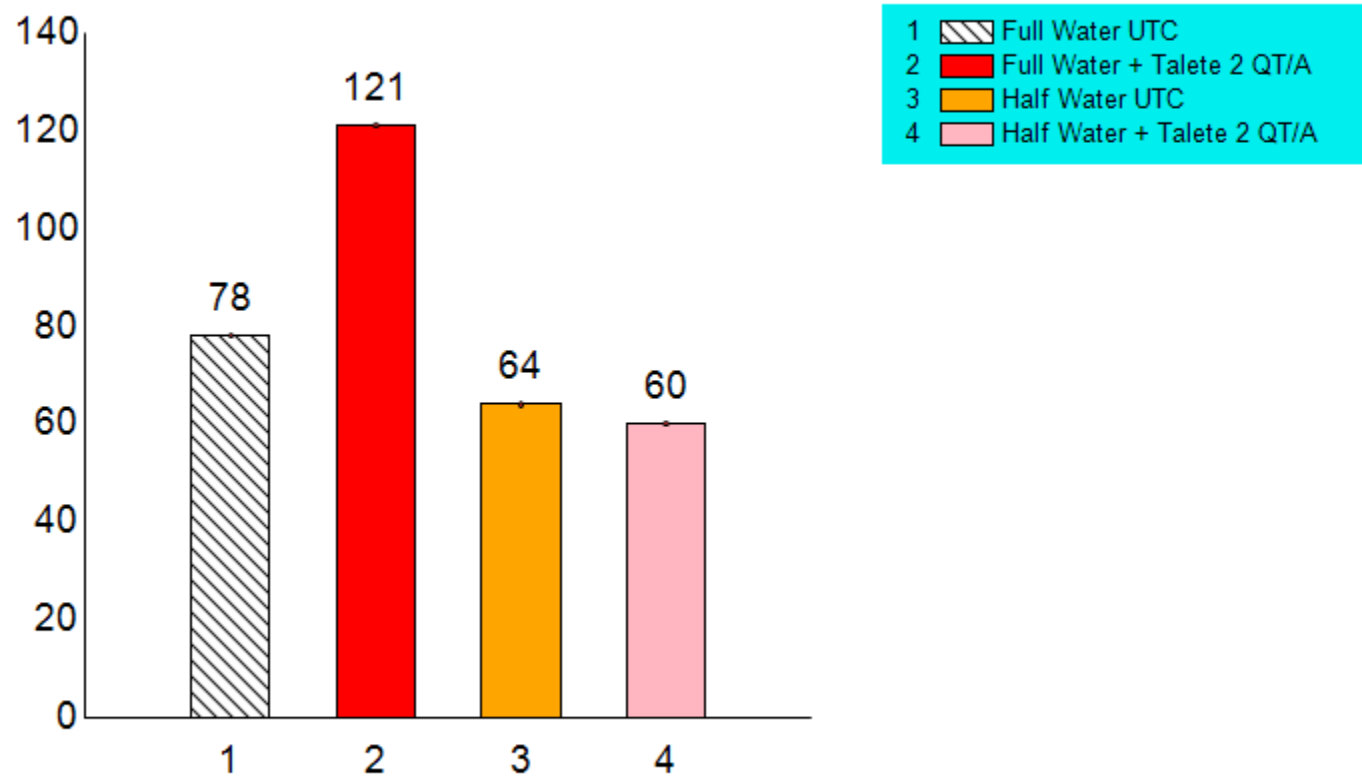


ST\_Post-Plant\_K ppm

Trial ID: T8\_Talete\_Cantaloupes\_2024



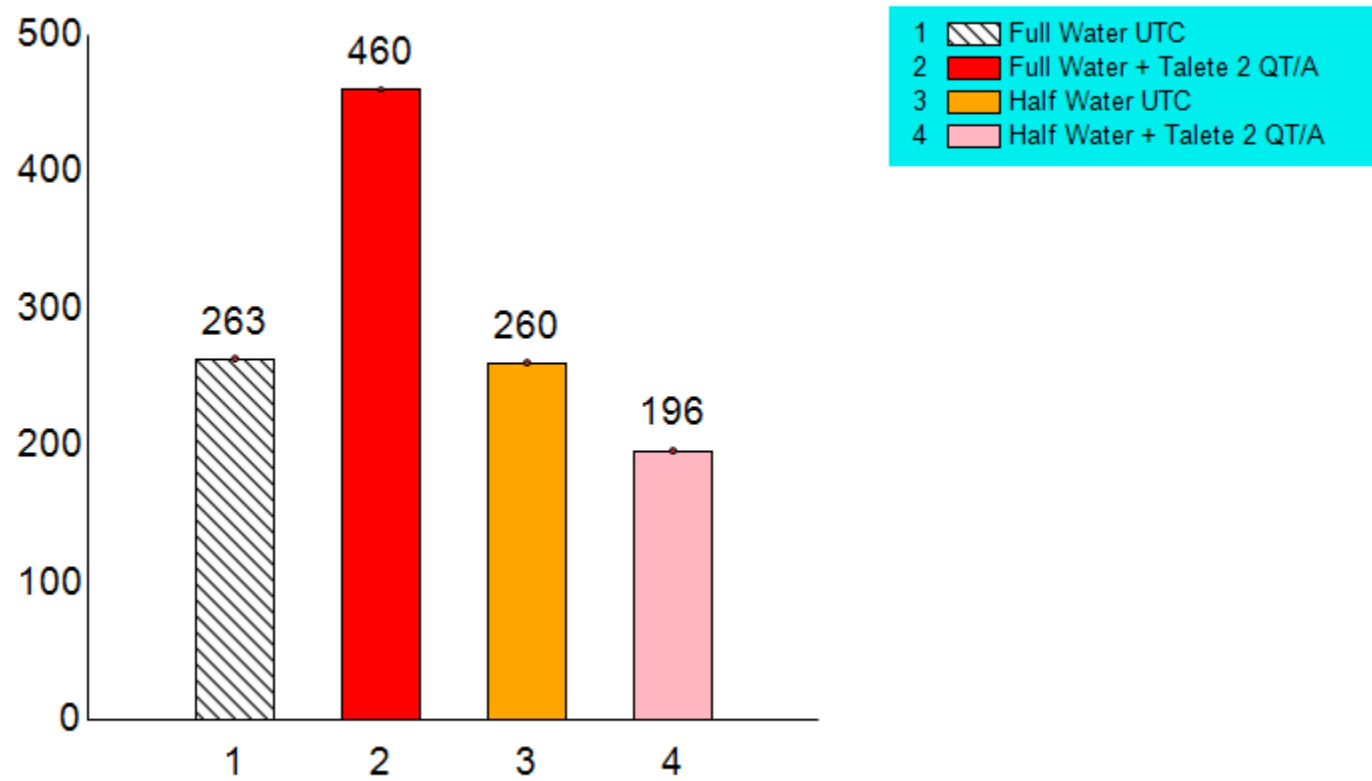
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_Mg ppm

Trial ID: T8\_Talete\_Cantaloupes\_2024

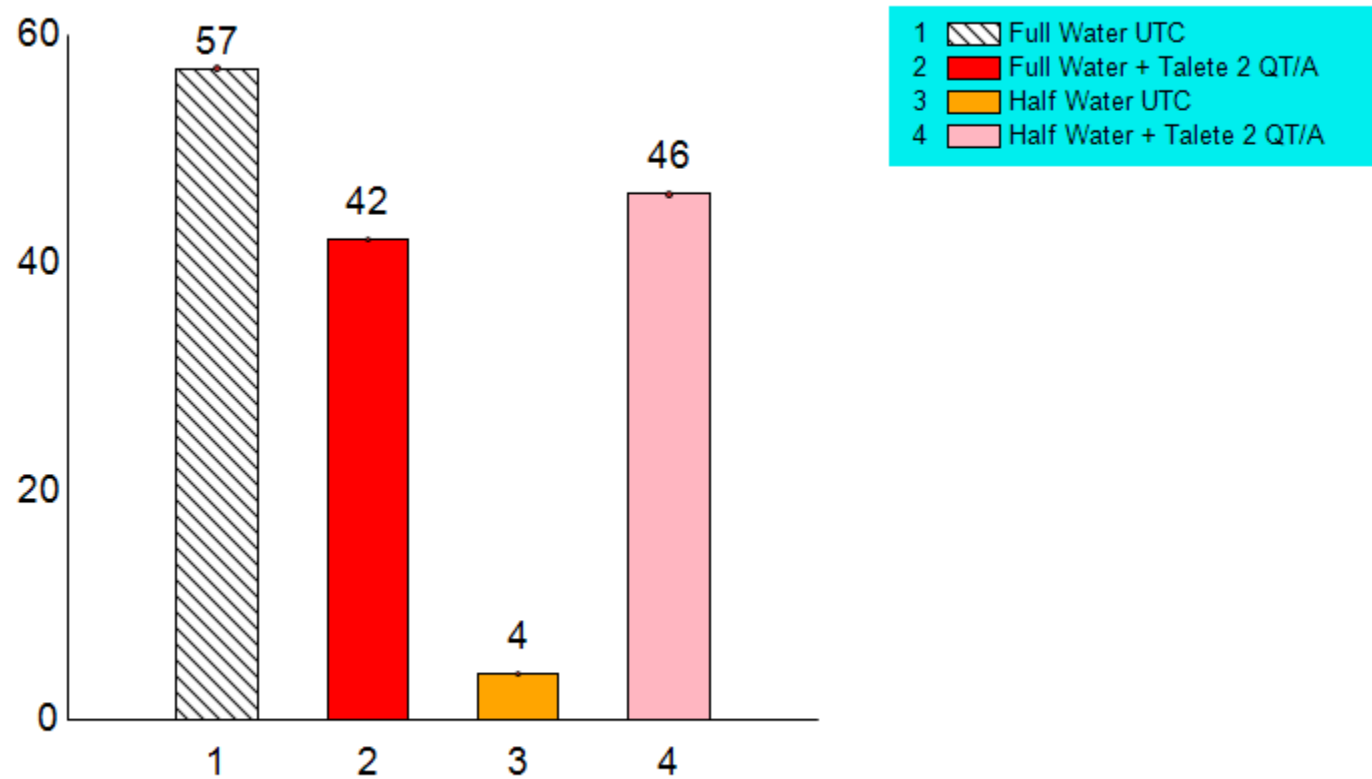
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_Ca ppm

Trial ID: T8\_Talete\_Cantaloupes\_2024

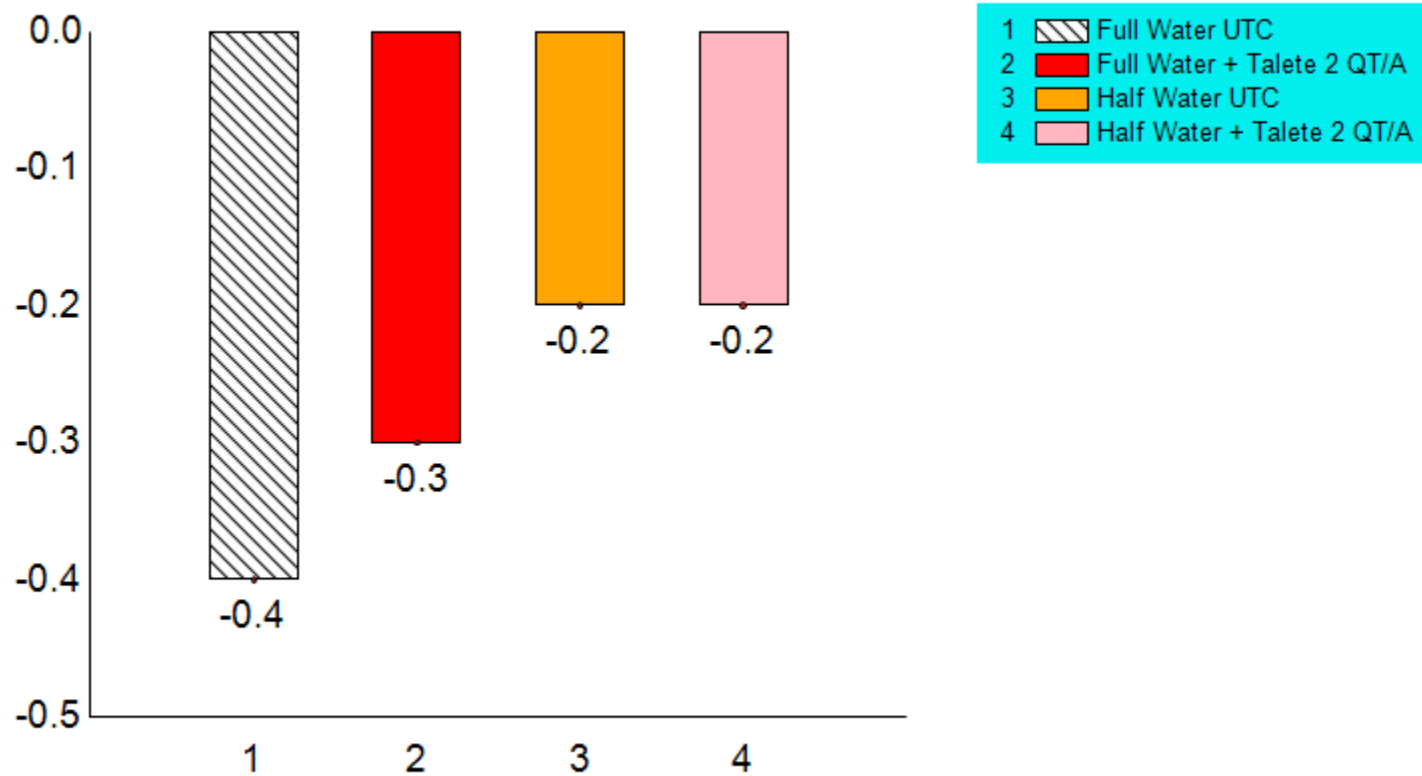
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_Na ppm

Trial ID: T8\_Talete\_Cantaloupes\_2024

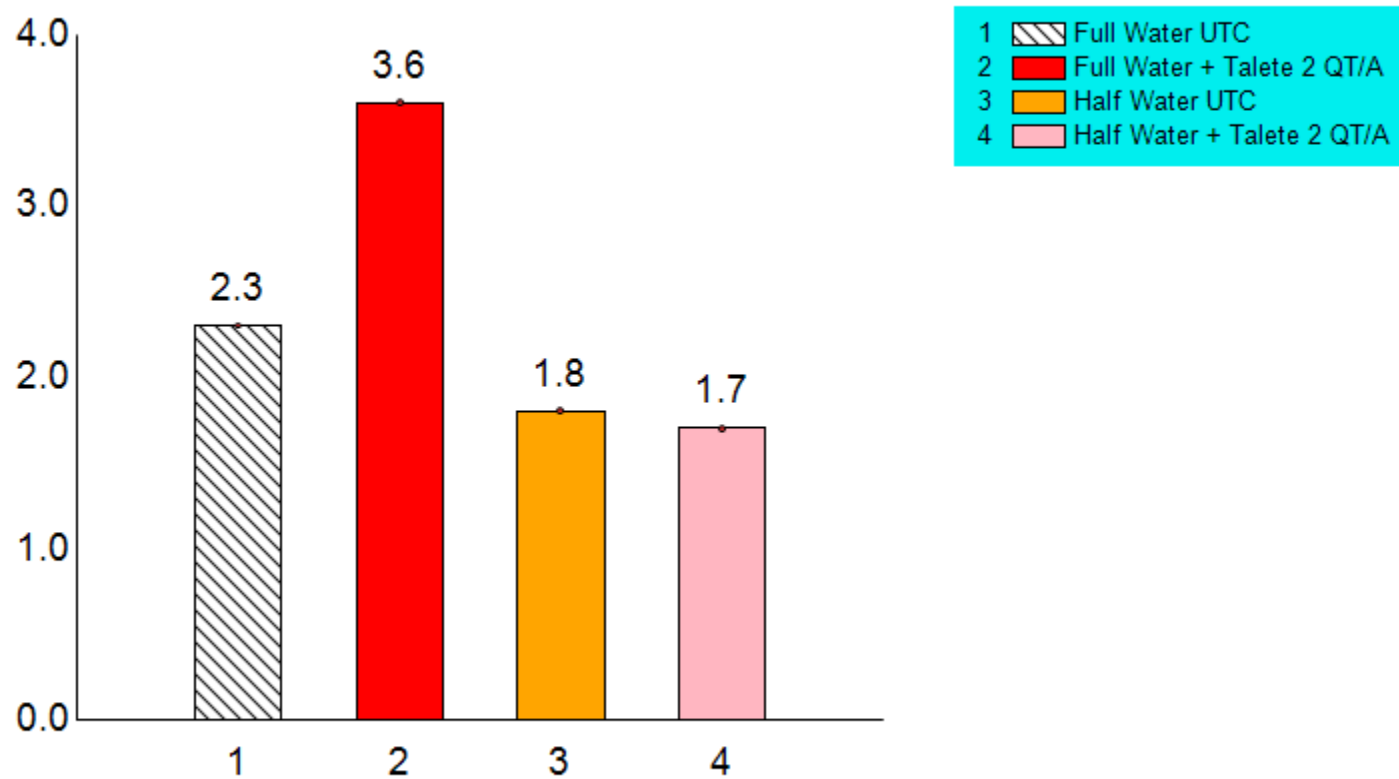
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_pH

Trial ID: T8\_Talete\_Cantaloupes\_2024

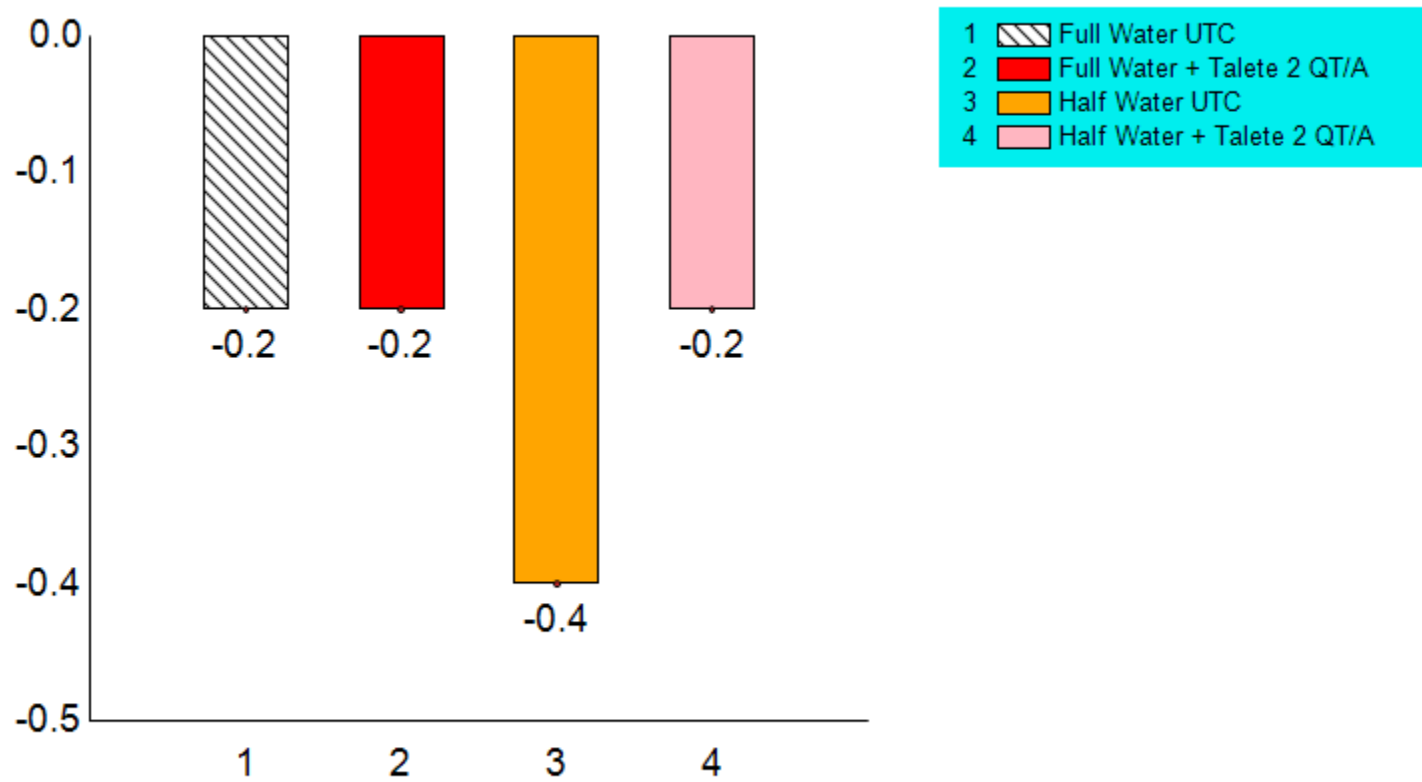
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_%K

Trial ID: T8\_Talete\_Cantaloupes\_2024

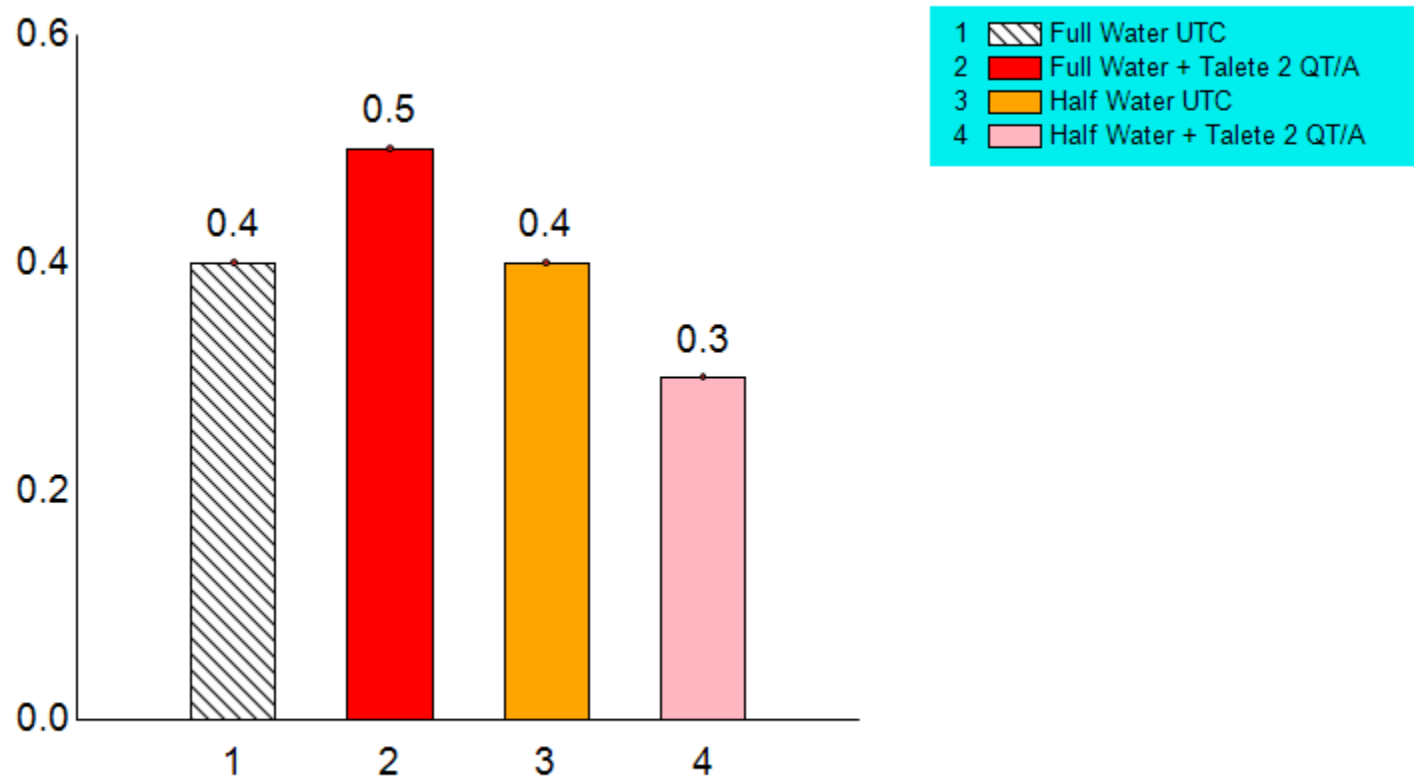
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_%mg

Trial ID: T8\_Talete\_Cantaloupes\_2024

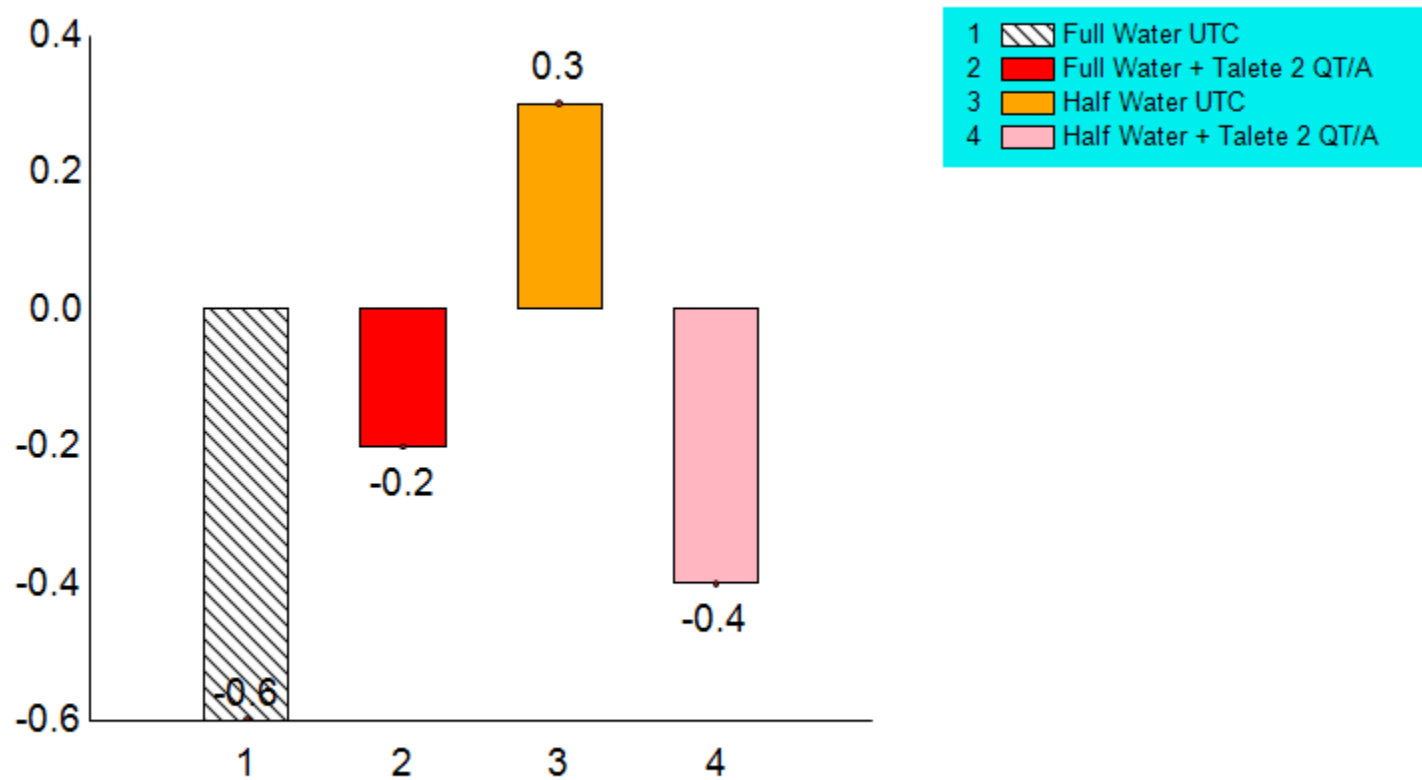
### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_%Ca

Trial ID: T8\_Talete\_Cantaloupes\_2024

### Talete Trial for salt mitigation. Soil Test Post-Plant



ST\_Post-Plant\_%Na

Trial ID: T8\_Talete\_Cantaloupes\_2024



# Plot Photos



Plot 1707  
Tst 2



Plot 1807  
Trt 1



Plot 1907  
Tst 4



Plot 2007  
Trt 3





Plot 1908

Trt 2



Plot 1808

Trt 3





Plot 1708  
Tst 4



Plot 1709  
Trt 3



Plot 1809  
Trt 2



Plot 1909  
Tst 1



Plot 2009  
Trt 4





Plot 1410  
Tst 3







Plot 1710  
Tst 2



Plot 1711  
Trt 1



Plot 1811

Trt 3



Plot 1911

Tst 4







Plot 1912  
Tst 1



Plot 1812  
Trt 2





Plot 1712  
Trt 4

