

An aerial photograph of a tractor pulling a sprayer through a vast, green agricultural field. The tractor is positioned in the upper center, moving away from the viewer. The field is divided into neat rows, and the sun is low on the horizon in the top right corner, creating a warm, golden glow and long shadows. The overall scene is bright and vibrant.

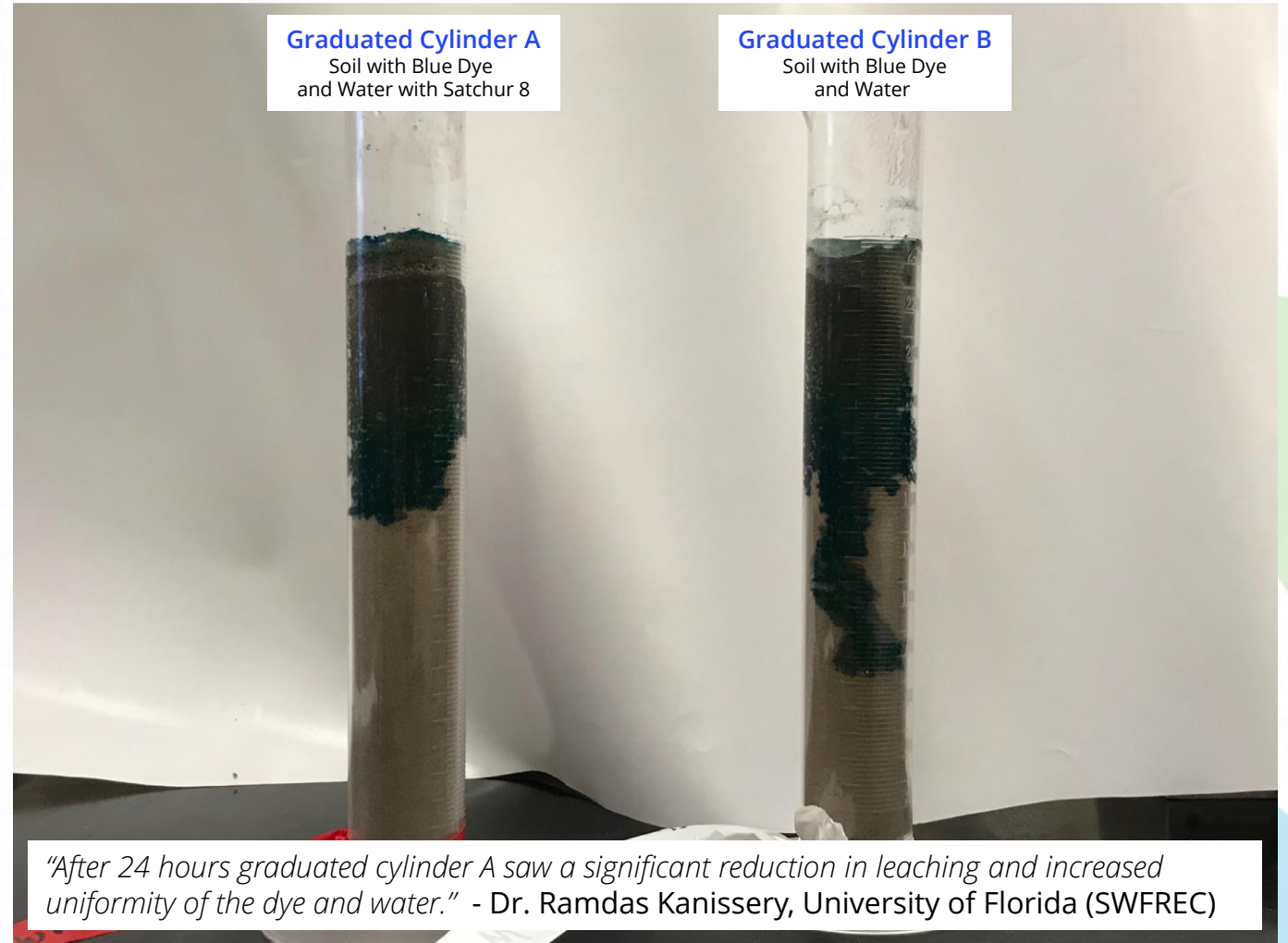
SATCHUR 8

In-Soil Use

How SATCHUR 8 + Liquid Works in the Soil

A laboratory experiment at the University of Florida illustrates the unique properties Satchur 8 displays in soil. Cylinder A contains blue dye and Satchur 8 in soil and cylinder B contains blue dye alone in soil. After 24 hours you can see that in cylinder B the blue dye has leached farther down into the soil, while cylinder A with Satchur 8 has considerably less leaching.

Further testing has yielded results which indicates that using Satchur 8 with pre-emerge herbicides and fertilizers greatly improves performance by keeping the active and water in the target zone for an extended period.



Improved Pre-Emerge Herbicide Weed Control

Replicated Trial - Weed Control Mixed with Prowl & Chateau | University of Florida, SWFREC Dr. Ramdas Kanissery

RATE	Satchur 8 with Prowl H ₂ O Percent Weed Control												
	29-Apr	7-May	15-May	22-May	30-May	5-Jun	13-Jun	21-Jun	27-Jun	10-Jul	17-Jul	29-Jul	12-Aug
0% Satchur 8	99.2	97.8	90.3	85.8	80.0	69.3	53.8	41.3	34.5	18.8	8.8	4.5	1.0
0.1% Satchur 8	99.4	98.9	96.6	93.4	92.0	83.0	75.8	69.3	67.3	55.5	48.0	38.5	29.0

RATE	Satchur 8 with Chateau 51 WDG Percent Weed Control												
	29-Apr	7-May	15-May	22-May	30-May	5-Jun	13-Jun	21-Jun	27-Jun	10-Jul	17-Jul	29-Jul	12-Aug
0% Satchur 8	99.7	99.6	99.2	98.1	96.0	93.2	89.2	84.8	84.1	80.3	68.3	63.0	58.0
0.1% Satchur 8	100.0	100.0	99.8	99.8	99.7	99.6	99.4	98.8	98.3	96.9	96.6	95.0	83.8

Summary: This data was part of a large, replicated pre-emerge herbicide trial. The objective of this part of the trial was to evaluate whether the addition of Satchur 8 to Prowl H₂O (pendimethalin) and Chateau 51 WDG (flumioxazin) improved weed control. The same rates of Prowl and Chateau were sprayed on sandy soils at the U/Florida's SWFREC research center with and without Satchur 8 at 0.1% v/v.

Conclusions: Results show that combining these pre-emerge herbicides with Satchur 8 at a rate of 0.1% resulted in significant efficacy gains in the second half of the 120-day trials.

Replicated Irrigation Trial Satchur 8-fA

TRACS 21RDK03 – Visalia, California – Ron Kukas

- ❖ Non-Crop trial using moisture sensors and soil tests for evaluation of a 5-hour irrigation schedule.
- ❖ Test took place on fertilized beds originally prepared for a vegetable test that was canceled due to cold weather conditions.

Part Rate Rating Data Type Rating Unit Rating Date Trt-Eval Interval	Water to Satchur 8-fA Ratio	5" K PPM Jun-02-21 17DA-F	10" K PPM Jun-02-21 17DA-F	5" P PPM Jun-02-21 17DA-F	10" P PPM Jun-02-21 17DA-F	5" N PPM Jun-02-21 17DA-F	10" N PPM Jun-02-21 17DA-F
1 CHECK		120.0	190.0	46.0	55.0	5.90	7.60
2 Satchur 8-fA 3.0 FL OZ/100' Bed	6,400:1	260.0	160.0	63.0	45.0	13.00	10.10
3 Satchur 8-fA 4.0 FL OZ/100' Bed	4,800:1	170.0	120.0	52.0	42.0	10.10	8.80
4 Satchur 8-fA 7.5 FL OZ/100' Bed	2,560:1	260.0	130.0	56.0	41.0	10.20	8.10
5 Satchur 8-fA 19.0 FL OZ/100' Bed	1,000:1	197.0	90.0	64.0	39.0	9.60	8.10
6 Satchur 8-fA 38.5 FL OZ/100' Bed	500:1	210.0	150.0	61.0	44.0	11.20	9.40

Replicated Irrigation Trial Satchur 8-fA

TRACS 21RDK03 – Visalia, California – Ron Kukas

Summary

The objective of Trial 21RDK03 was to evaluate the water holding capacity of several rates of Satchur 8-fA compared to an untreated check. NPK levels at 5 inch and 10-inch soil depths were also reviewed. Rainfall between January 23 and April 26 was recorded (11 events). Only one rain was more than .4 inches (1.1 inch). Beds were irrigated six times via a drip system. Irrigation was triggered when the Irrrometer Watermark sensors reached a specific reading (50 bars). The drip system was then manually turned on. No fertilizer was applied through the drip system. The only fertilizer that was applied was a side dressing of 40 lbs of 15-15-15 carefully placed 2 inches below the drip tape, which is typical of cucumber production systems in the San Joaquin valley of California. The fertilizer was applied directly below the area that was supposed to be the cucumber furrow. Soil samples were taken on June 2.

Conclusions

1. All Satchur 8-fA rates produced higher K levels at the 5-inch depth than the untreated check.
2. All Satchur 8-fA rates produced lower K levels at the 10-inch depth than the untreated check.
3. All Satchur 8-fA rates produced higher P levels at the 5-inch depth than the untreated check.
4. All Satchur 8-fA rates produced lower P levels at the 10-inch depth than the untreated check.
5. All Satchur 8-fA rates produced higher N rates at BOTH the 5 inch and 10-inch level than the untreated check.
6. The optimal rate of Satchur 8-fA appeared to be 6,400:1 water to Satchur 8 ratio in this trial.
7. The data provided strong evidence that when Satchur 8-fA interacts with fertilizer it slows the rate of nutrient leaching through the upper soil profile.

Cucumber Yield Response & NPK Levels

Replicated Trial – TRACS 21RDK19 – Cucumbers Grown in Loamy Soil – Visalia, California – Ron Kukas

Evaluation of Satchur 8-fA for Cucumber Yield Response and NPK Levels							
Part Rate Rating Data Type Rating Unit Rating Date Trt-Eval Interval	YIELD POUNDS /ACRE Oct-14-21 72 DA-A	NUMBER CUCU /ACRE Oct-14-21 72 DA-A	LEAF N PERCENT Aug-30-21 27 DA-A	LEAF P PERCENT Aug-30-21 27 DA-A	LEAF K PERCENT Aug-30-21 27 DA-A	LEAF COLOR 0-5 Aug-30-21 27 DA-A	PLANT LENGTH INCHES Aug-3—21 27 DA-A
CHECK	26094.8 b	48069.0 bc	3.290	0.3150	1.940	3.0 c	17.5 c
Satchur 8-fA 3.0 FL OZ /100' Bed	27729.8 b	55263.0 ab	3.940	0.3190	2.140	4.0 a	20.5 a

Summary

21RDK19 was a replicated trial on cucumbers. 15-15-15 fertilizer was precisely placed 2 inches below the drip irrigation line on August 9. Urea fertilizer was added to the drip irrigation on September 5, 12, 18, 23 and 28. Satchur 8-fA (Trt #4) was applied numerous times between August 3 and October 9 through the drip irrigation system. This table demonstrates the beneficial effects of Satchur 8-fA when used in the soil.

Fertilizer + Satchur 8 Resulted in Significantly Higher Yields

Replicated Trial - TRACS 21RDK17 – Visalia, California – Ron Kukas

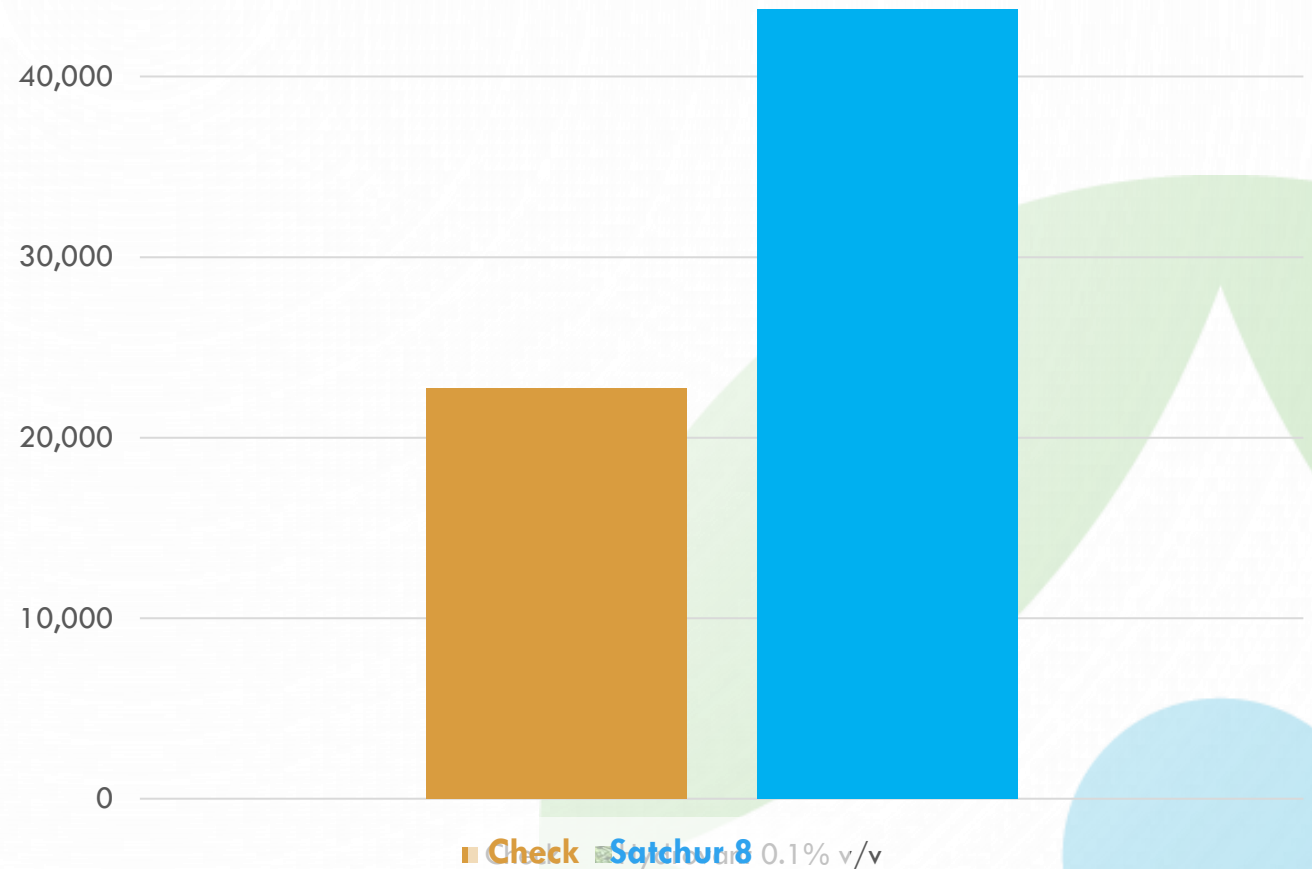
Summary

This trial illustrates the benefits of Satchur 8, used with a grower standard fertilizer program on cucumbers. Adding Satchur 8 only to the drip irrigation system interacted with the 15-15-15 fertilizer and resulted in an increase of 21,027 lbs of cucumbers per acre from the grower's standard program.

Conclusion

Adding Satchur 8 resulted in significantly better yield than the untreated check. This is due to the interaction between Satchur 8 and the 15-15-15 fertilizer.

Total Yield - Pounds per Acre



Crop Code Part Rate Rating Data Type Rating Unit Rating Date Trt-Eval Interval	CUMSA YIELD POUNDS /ACRE Aug-30-21 16DA-B	CUMSA WEIGHT GRAMS 5 ROOTS Aug-31-21 17DA-B	CUMSA DIAMET MM /STEM Aug-31-21 17DA-B	CUMSA PLANT COLOR 1-5 Aug-31-21 17DA-B
CHECK	22,722.3 e	66.0 d	7.70 c	1.0 b
Satchur 8 0.1 % v/v	43,749.3 d	109.0 a	9.50 a	3.0 a

Water Use Efficiency on Corn

2021 Irrigated Corn Trials – Irrigation Research Foundation - Yuma, Colorado

- ❖ Satchur 8 was injected through pivot
- ❖ Standard irrigation protocol = Calendar Driven
- ❖ Data driven irrigation protocol = Plant Driven

Irrigation Date	Block Name	Irrigation Protocol	With/Without Satchur 8	Water/Irrigation (inches of water)	Water/Irrigation (Gallons)	Yield (Bu)	% Improvement in Crop Per Drop
06/21/21	221-W	Standard	With	12.14	329,650	131.8	4.42%
07/01/21	236-E	Standard	Without	11.85	321,775	123.2	
07/08/21	221-E	Data Driven	With	12.35	335,352	132.5	19.05%
07/15/21	236-W	Data Driven	Without	12.05	327,206	108.6	

Summary

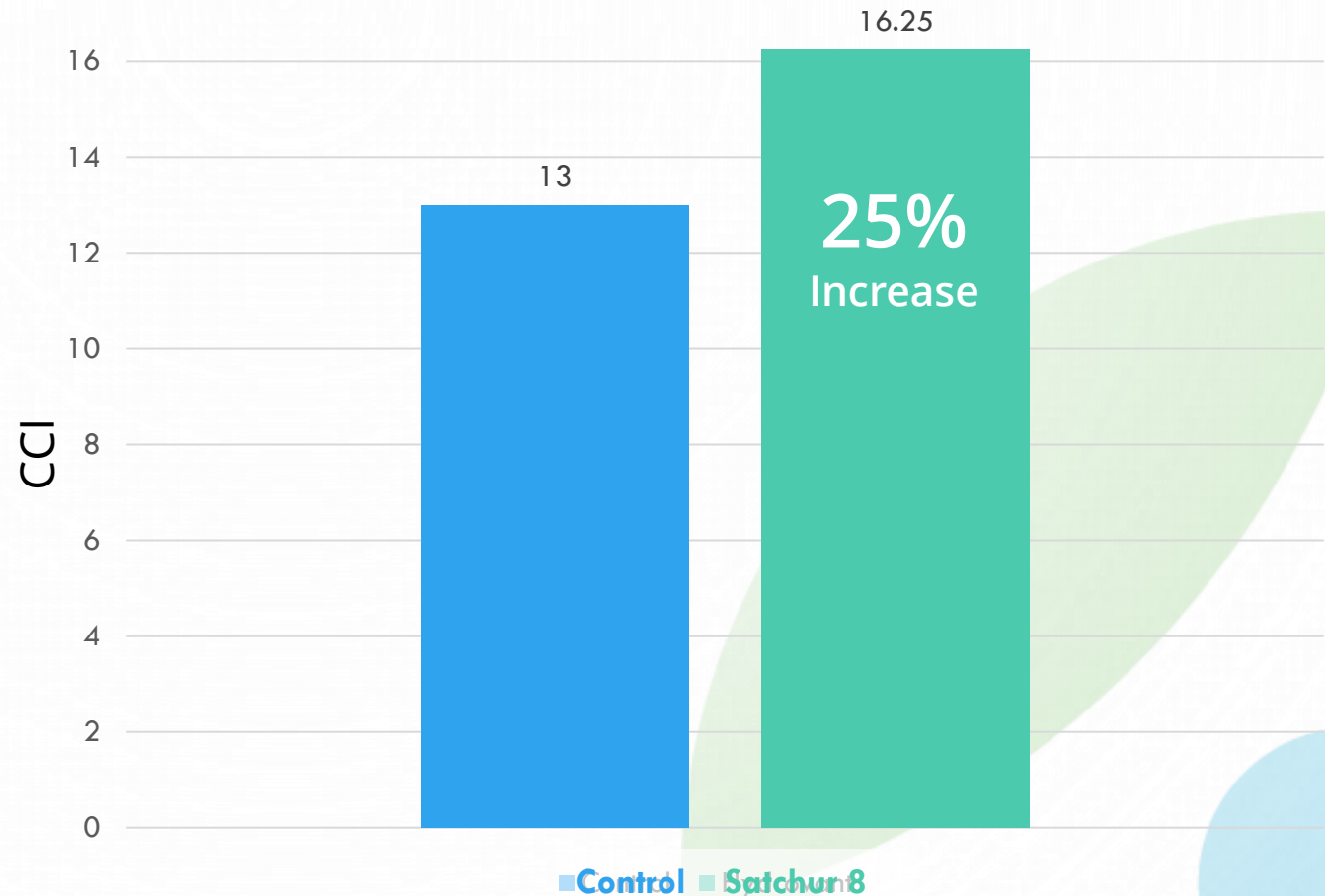
Satchur 8-fA was evaluated on irrigated corn in Yuma Colorado at the Irrigation Research Foundation. Yuma is located near the border of both Nebraska and Kansas. linear irrigation system with Sentek capacitance probes was used to study how Satchur 8-fA can improve corn yields. Two protocols were used with and without Satchur 8. One was a calendar driven irrigation protocol and the other was a “plant driven” or data driven irrigation protocol. 28-0-0-5 (S) was injected with Satchur 8-fA and the yield of the four blocks was recorded after harvest.

Chlorophyll Levels in Corn

2021 Irrigated Corn Trials – Irrigation Research Foundation - Yuma, Colorado

Summary

Satchur 8-fA was evaluated in irrigated Corn in Yuma, Colorado at the Irrigation Research Foundation. CCI was determined using an Apogee MC-100 Chlorophyll Concentration Meter. The MC-100 can report readings as CCI or SPAD.



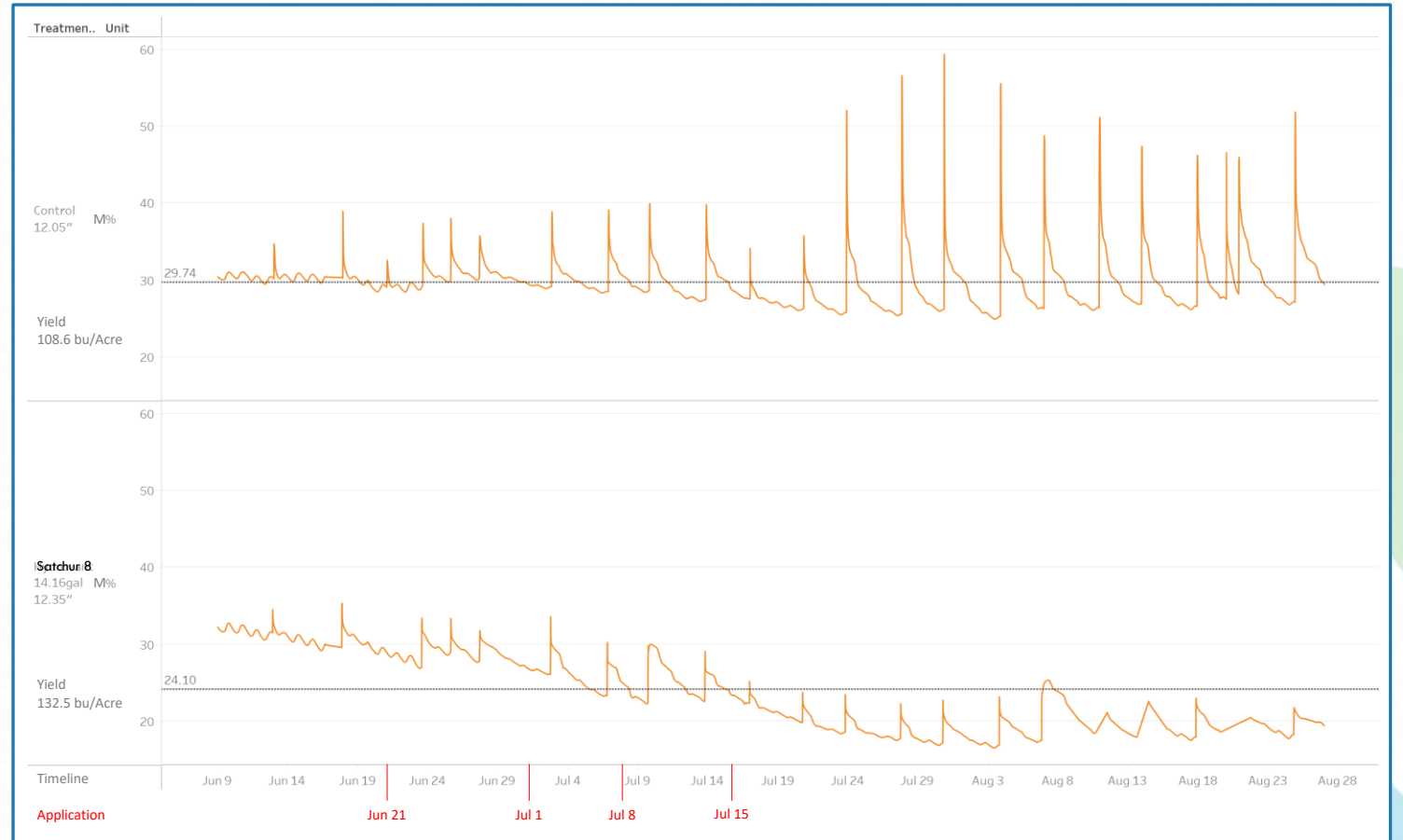
*CCI was determined using an Apogee MC-100 Chlorophyll Concentration Meter

Moisture Level Variability on Corn

2021 Irrigated Corn Trials – Irrigation Research Foundation - Yuma, Colorado

Summary

Sentek capacitance probes were used in each of the two blocks to produce precise data including moisture levels. The two graphs show the difference in Moisture Percentage readings at the 5.9-inch level once Satchur 8 is irrigated into the soil. The shallower sections of the soil profile are the most critical areas regarding the ability of any crop to produce very high yields. After the first application of Satchur 8 on June 21, the graph of the control shows higher spikes in moisture percentage and has less consistent moisture changing quickly from wet to dry. The Satchur 8 block has spikes that are lower indicating a much more consistent level of moisture for the crop. The probes and the data were managed and evaluated by agriMeasures LLC of Bamberg, SC.



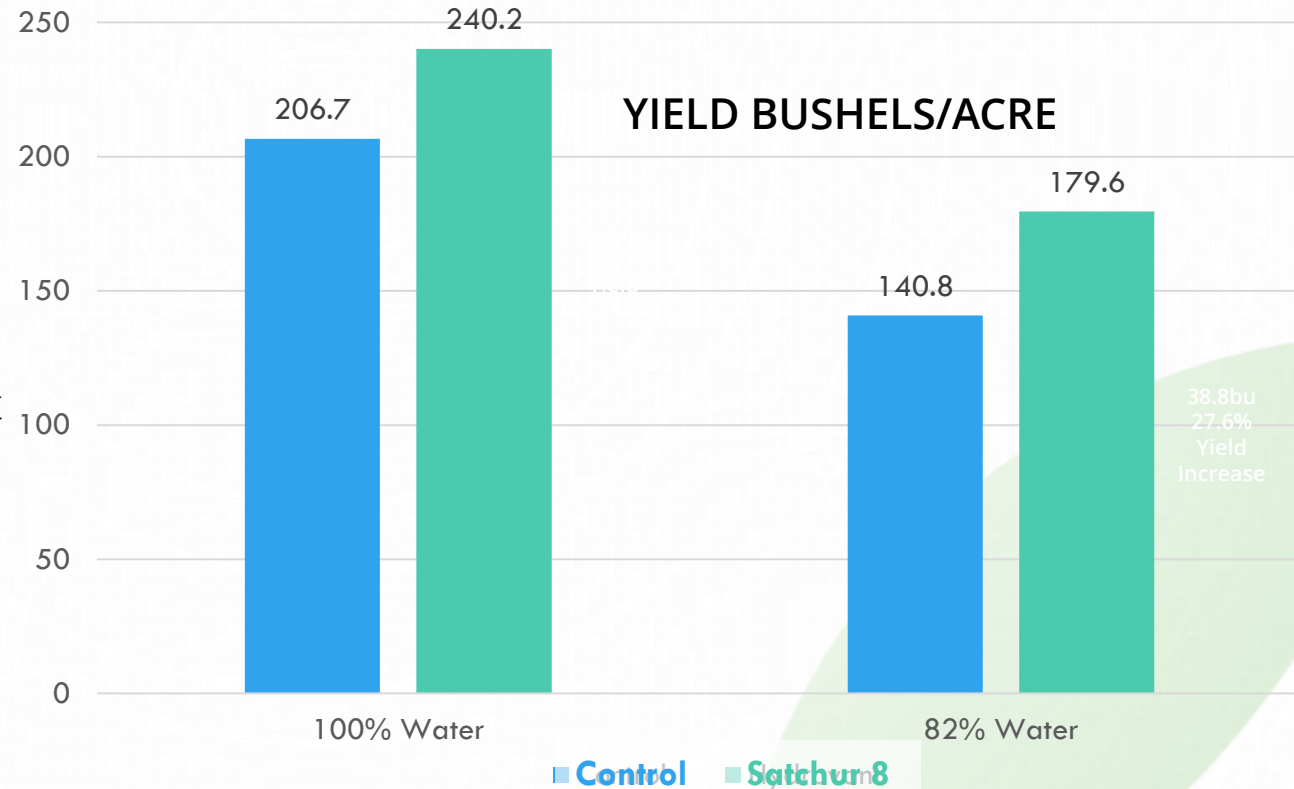
*5.9-inch (15 cm) soil depth.

Satchur 8 Ground Protocol on Corn

2022 Irrigated Corn Trials – Irrigation Research Foundation - Yuma, Colorado

Summary

The 2022 Corbet Scientific trial at the Irrigation Research Foundation was a 32-acre replicated test. Both irrigation treatments, ground protocol treatments (strip till and starter applications) and combined ground protocols with subsequent irrigation treatments were part of this large trial. A Reinke pivot with an injection system was used for irrigation.



25-17-1.5-5.01s-0.24zn applied at 13 gal/A in a DMI Strip Till System at a 4" depth (Knifed in).
With and without Satchur 8 at 0.1% v/v.