



Rice with EA Summary

PLANTED MAY 15TH ~ HARVESTED SEPTEMBER 28, 2022



Paddy fields (2) (4) (6) with Well Water

Paddy fields (1) (3) (5) with EA Well Water

Notes:

Paddy (1) (3) used 1 Reactor with pumps powered by a dc power supply

Paddy (5) used four Aerators only powered by 100-Watt Solar Panels

Resulting:

11.2 additional bushels per acre (bu/A)

13% total rice production increase

Market Value: 11.2 (bu/A) x \$16.94 = \$186.34 per Acre increase

Global Value: 507.9 m tons X 13.6% = 69.07 m tons increase

69.07 m tons x 35.7 (bu) = 2.465 billion (bu)

2.465 billion (bu) x \$16.94 = \$41.73 billion

2022 Electroaeration in Rice			
Trial ID: 2022 EA Rice		Location: Agricenter International	
Protocol ID: 2022 EA Rice		Trial Year: 2022	
Project ID:		Investigator (Creator): Bruce Kirksey	
		Study Director: Dr. K. Bruce Kirksey	
		Sponsor Contact: Talbott Howard	
Rating Date	9/28/2022	9/28/2022	9/28/2022
Part Rated	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	MOICON	WEIGHT	WEITES
Rating Unit/Min/Max	% , 0, 100	lb/plot, -, -	lb/plot, -, -
Number of Subsamples	1	1	1
Days After First/Last Applic.	100, 100	100, 100	100, 100
Trt-Eval Interval	100 DA-A	100 DA-A	100 DA-A
Trt No.	29	30	31
Treatment Name	Well water	EA Well water	EA Well water
Rate	15 gal/a	15 gal/a	15 gal/a
Appl Code	A	A	A
LSD P=.05	13.681112481	133.410	45.370
Standard Deviation	14.225556976	144.093	45.077
CV	1.1887676174	25.4445	2.6905
Grand Mean	0.3383812578	7.2427	0.7658
Levene's F^	2.43	5.22	1.69
Levene's Prob(F)	13.9533347287	138.7517	45.2233
Rank X2	0.00	0.00	0.00
P(Rank X2)	1.00	1.00	1.00
Skewness^	0.0	0.0	0.0
Kurtosis^	-1.875	-1.875	-1.875
Replicate F	2.311	1.666	1.379
Replicate Prob(F)	0.3021	0.3752	0.4204
Treatment F	3.883	3.264	0.220
Treatment Prob(F)	0.1876	0.2126	0.6852



Summary of rice test 2023

This is a repeat of the test conducted at Memphis Agricultural center in 2022.

We utilized the EA technology, pumps and sprinklers as a solar panel driven water modifier.

In the 2022 test, we measured an increase of between 9% and 17% (4 plots) **or app: 13%**. Increasing the average yield by between 23.3 and 11.2 Bushels per acre.

11.2 Bushels @ \$16/bushel = ROI of \$180/acre.

This 2023 test was generated to evaluate whether the first result was a fluke or if indeed there was value to the deployment of this relatively inexpensive field irrigation modification.

Test 2023 Results:

In this test we increased yield by 18 Bushels per acre on 3 plots lot vs. 3 plots control or between 10.59 and 24.8 or **an average of 15%**.

18 Bushels @ \$16/bushel = ROI of \$288/acre.

- **The solar powered technology is simple and practical. It uses no external energy or chemicals.**
- **This technology is suitable for outdoor crops, aquaponics, greenhouses, home gardens and vertical farms.**
- **The plates can be incorporated into existing irrigation systems with no major alterations, and the treated water has a long shelf life making the generated water scalable to the largest farm's back acres.**
- **We have also found great results by foliar or sprinkler systems for pesticide abatement and growth.**

Here are some random shots from the experiment, which incidentally was plagued with unusual rains, some lasting as long as 10 days.

[Assorted Photos 2023 Test site Agricenter Memphis](#)

Please review the attached tests (2022 and 2023) raw data.

Nicholas Eckelberry

and Talbott Howard

For Electro-Aeration Inc.

Electro-Aeration™ Inc.
Los Angeles, CA USA



(2023 EA Rice)
of 4

Confidential

ARM 2023.6 Spray Plan Page 1

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Reps: 3 Plots: 5 by 20 feet
Appl. Amount: 15 GAL/AC Mix Size: 2 L (total for 3 plots; minimum=0.391 L)

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Description	Amt Product to Measure	Rep 1	Rep 2	Rep 3
1	EA Well water	15 gal/a	A		Flood water		101	202	301
2	Well water	15 gal/a	A		Flood water		102	201	302

Sort Order: Treatment



Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Status: E established
ARM Trial Created On: 6/1/2023

Trial Location

City: Memphis **Country:** USA United States
State/Prov.: Tennessee **County:** Shelby
Postal Code: 38120 **Climate Zone:** EPPOSE EPPO South East

Regulations

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

to evaluate the effect of electroaeration and its affect on city and well water in rice

Crop Description

Crop 1: C ORYSI Oryza sativa Dry-seeded paddy rice **BBCH Scale:** BRIC
Entry Date: 6/1/2023 **Stage Scale:** BBCH
Variety: PVL03
Attributes: Provisia
Planting Date: 5/31/2023 **Planting Rate:** 75 LB/A
Depth: 0.5 IN
Rows per Plot: 9 **Planting Method:** DRILLE drilled
Row Spacing: 7.5 IN **Planting Equipment:** PD plot drilling machine
Seed Bed: FRIABL friable
Soil Temperature: 72 F **Soil Moisture:** EXCELL excellent
Harvest Date: 11/28/2023 **Harvest Equipment:** Almaco Plot Combine
Harvested Width: 5 FT
Harvested Length: 30 FT
% Standard Moisture: 11.0

Site and Design

Treated Plot Width: 5 FT **Site Type:** FIELD field
Treated Plot Length: 20 FT
Treated Plot Area: 100.0 FT² **Tillage Type:** CONTIL conventional-till
Replications: 3 **Treatments:** 2 **Plots:** 6 **Study Design:** RACOB� Randomized Complete Block (RCB)
Distance between Blocks: 1 FT
Distance between 'Plot' Experimental Units: 0.5 FT

Soil Description

Description Name: 2023 Rice Field
% Sand: 29.6 **% OM:** 1.8 **Texture:** SIL silt loam
% Silt: 51.6 **Soil Name:** Falaya silt loam
% Clay: 18.6 **Fert. Level:** G good
pH: 6.3 **CEC:** 7.6
Soil Drainage: G good

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	ORYSI, BRIC

Notes

Context	Date	By	Notes
STATUS	6/1/2023	Ashley Barth	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	6/1/2023	Ashley Barth	Automatically added by ARM: Status changed to: E: changed by (XAGBAL).
STATUS	6/1/2023	Ashley Barth	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Rating Date	11/28/2023	11/28/2023	11/28/2023	11/28/2023	11/28/2023
Part Rated	PLAEME, C	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	HEIGHT	MOICON	WEIGHT	WEITES	YIELD
Rating Unit/Min/Max	IN, -, -	%, 0, 100	lb/plot, -, -	%, 0, 100	BU, -, -
Sample Size	1	1 PLOT	1 PLOT	1 PLOT	1 A
Number of Subsamples	1	1	1	1	1
Plant-Eval Interval	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1
ARM Action Codes					TY1
Number of Decimals					1
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code Plot	1	2	3	4
1 EA Well water	15 gal/a A 101	25.0	6.4700	24.7650	45.0000
	202	24.0	5.8600	23.9650	46.0050
	301	25.0	5.8150	21.6900	48.6350
	Mean =	24.7	6.0483	23.4733	46.5467
2 Well water	15 gal/a A 102	24.0	6.0350	22.2900	48.2900
	201	23.0	5.4550	20.2600	48.2500
	302	22.0	6.0100	19.8200	45.1600
	Mean =	23.0	5.8333	20.7900	47.2333

Part Rated

PLAEME = plant - emerged

GRAIN = grain

C = Crop is Part Rated

Rating Type

HEIGHT = height

MOICON = moisture content

WEIGHT = weight

WEITES = weight - test

YIELD = yield

Rating Unit/Min/Max

IN, , = inch

%, 0, 100 = percent

lb/plot, , = pounds per plot

BU, , = bushel

PLOT = total plot

A = acre

Plant-Eval Interval

181 DP-1 = 1 ORYSI 5/31/2023

ARM Action Codes

TY1 = 6.45333333*[C3]*(100-[C2])/89

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Rating Date	11/28/2023	11/28/2023	11/28/2023	11/28/2023	11/28/2023
Part Rated	PLAEME, C	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	HEIGHT	MOICON	WEIGHT	WEITES	YIELD
Rating Unit/Min/Max	IN, -, -	%, 0, 100	lb/plot, -, -	%, 0, 100	BU, -, -
Sample Size	1	1 PLOT	1 PLOT	1 PLOT	1 A
Number of Subsamples	1	1	1	1	1
Plant-Eval Interval	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1
ARM Action Codes					TY1
Number of Decimals					1
Trt Treatment	1	2	3	4	5
Rate Appl					
No. Name					
1 EA Well water	15 gal/a A	24.7 -	6.0483 -	23.4733 a	46.5467 -
2 Well water	15 gal/a A	23.0 -	5.8333 -	20.7900 b	47.2333 -
LSD P=.05	2.87	0.88283	2.32285	9.04670	15.01
Standard Deviation	0.82	0.25130	0.66120	2.57513	4.27
CV	3.43	4.23	2.99	5.49	2.83
Grand Mean	23.83	5.94083	22.13167	46.89000	150.92
Levene's F^	0.00	0.00	0.00	0.00	0.00
Levene's Prob(F)	1.00	1.00	1.00	1.00	1.00
Rank X2	.	.	.	.	.
P(Rank X2)	.	.	.	.	.
Shapiro-Wilk^	0.9129	0.9269	0.9338	0.9471	0.9471
P(Shapiro-Wilk)^	0.4558	0.556	0.6099	0.7167	0.7167
Skewness^	0.0	0.0	0.0	0.0	0.0
P(Skewness)^	1.0	1.0	1.0	1.0	1.0
Kurtosis^	-1.875	-1.875	-1.875	-1.875	-1.875
P(Kurtosis)^	0.4245	0.4245	0.4245	0.4245	0.4245
Replicate F	1.000	2.822	8.793	0.018	9.193
Replicate Prob(F)	0.5000	0.2616	0.1021	0.9827	0.0981
Treatment F	6.250	1.098	24.705	0.107	26.464
Treatment Prob(F)	0.1296	0.4047	0.0382	0.7750	0.0358

Part Rated

PLAEME = plant - emerged
GRAIN = grain
C = Crop is Part Rated

Rating Type

HEIGHT = height
MOICON = moisture content
WEIGHT = weight
WEITES = weight - test
YIELD = yield

Rating Unit/Min/Max

IN, , = inch
%, 0, 100 = percent
lb/plot, , = pounds per plot
BU, , = bushel

PLOT = total plot
A = acre

Plant-Eval Interval

181 DP-1 = 1 ORYSI 5/31/2023

ARM Action Codes

TY1 = 6.45333333*[C3]*(100-[C2])/89



Agricenter International

2022 Electroaeration in Rice

Trial ID: 2022 EA Rice Location: Agricenter International Trial Year: 2022
Protocol ID: 2022 EA Rice Investigator (Creator): Bruce Kirksey
Project ID: Study Director: Dr. K. Bruce Kirksey
Sponsor Contact: Talbott Howard

Reps: 3 Plots: 21 by 50 feet
Appl. Amount: 15 GAL/AC Mix Size: 2 L (total for 3 plots; minimum=4.106 L)

Trt No.	Treatment Name	Rate	Appl Unit	Code	Amt Product to Measure	Rep 1	Rep 2	Rep 3
1	Well water	15 gal/a	A			102	202	302
2	EA Well water	15 gal/a	A			101	201	301

Sort Order: Treatment

Agricenter International

2022 Electroaeration in Rice

Trial ID: 2022 EA Rice Location: Agricenter International Trial Year: 2022
Protocol ID: 2022 EA Rice Investigator (Creator): Bruce Kirksey
Project ID: Study Director: Dr. K. Bruce Kirksey
Sponsor Contact: Talbott Howard

General Trial Information

Study Director: Dr. K. Bruce Kirksey **Title:** Director of Research

Discipline: SW soil and water

Trial Status: E established

ARM Trial Created On: 6/14/2022

Initiation Date: 5/2/2022

Trial Location

City: Memphis

Country: USA United States

State/Prov.: Tennessee

Postal Code: 38120

Climate Zone: EPPOSE EPPO South East

Latitude of LL Corner °: 35.125713 N

Longitude of LL Corner °: -89.811948 W

Altitude of LL Corner: 256.00 FT

Conducted Under GLP: No

Conducted Under GEP: No

Objectives:

to evaluate the effect of electroaeration and its affect on city and well water in rice

Contacts

Role: STYDIR study director

Study Director: Dr. K. Bruce Kirksey

Title: Director of Research

Organization: Agricenter International

Address 1: 7777 Walnut Grove Road

Phone No.: 901-757-7754

Mobile No.: 901-355-9124

Country: USA United States

E-mail: bkirksey@agricenter.org

City: Memphis

State/Prov: TN

Postal Code: 38120

Role: SPONSR sponsor

Sponsor: Talbott Howard

Title: COO

Organization: Electro-Aeration, Inc.

Address 1: 3160 Rustleaf Cove

Mobile No.: 901-734-3982

Country: USA United States

E-mail: talbott@electroaeration.com

City: Germantown

State/Prov: TN **Postal Code:** 38138

Crop Description

Crop 1: C ORYSI Oryza sativa

Dry-seeded paddy rice

BBCH Scale: BRIC

Entry Date: 6/14/2022

Stage Scale: BBCH

Variety: Provisia

Planting Date: 5/19/2022

Planting Rate: 75

LB/A

Depth: 0.5 IN

Rows per Plot: 9

Planting Method: DRILLE drilled

Row Spacing: 7.5 IN

Planting Equipment: PD plot drilling machine

Seed Bed: FRIABL friable

Soil Temperature: 74 F

Soil Moisture: EXCELL excellent

Emergence Date: 5/27/2022

Harvest Date: 9/28/2022

Harvest Equipment: Almaco Plot Combine

Harvested Width: 21 FT

% Standard Moisture: 13

Harvested Length: 40 FT

Site and Design

Treated Plot Width: 21 FT

Site Type: FIELD field

Treated Plot Length: 50 FT

Treated Plot Area: 1050.0 FT² **Treatments:** 2

Tillage Type: CONTIL conventional-till

Replications: 3

Study Design: RACOB Randomized Complete Block (RCB)

Soil Description

Description Name: 2022 Rice Field

% Sand: 29.6 **% OM:** 1.8 **Texture:** SIL silt loam

% Silt: 51.6 **pH:** 6.5 **Soil Name:** Falaya silt loam

% Clay: 18.6 **CEC:** 7.8 **Fert. Level:** G good

Soil Drainage: G good



Agricenter International

2022 Electroaeration in Rice		
Trial ID: 2022 EA Rice	Location: Agricenter International	Trial Year: 2022
Protocol ID: 2022 EA Rice	Investigator (Creator): Bruce Kirksey	
Project ID:	Study Director: Dr. K. Bruce Kirksey	
	Sponsor Contact: Talbott Howard	

Application Description

	A
Application Date	6/20/2022

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	ORYSI, BRIC
Days after Emergence	24
Stage Majority, Percent	15, -

Agricenter International

2022 Electroaeration in Rice										
Trial ID: 2022 EA Rice		Location: Agricenter International			Trial Year: 2022					
Protocol ID: 2022 EA Rice		Investigator (Creator): Bruce Kirksey								
Project ID:		Study Director: Dr. K. Bruce Kirksey								
		Sponsor Contact: Talbott Howard								
Rating Date	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/18/2022	8/18/2022	8/18/2022	8/18/2022		
Part Rated	PLANT, C	PLANT, C	PLANT, C	PLANT, C	PLANT, C	PLANT, C	PLANT, C	PLANT, C		
Rating Type	CHLCON	HEIGHT	WEIFRE	WEIDRY	CHLCON	HEIGHT	WEIFRE	WEIDRY		
Rating Unit/Min/Max	SPAD, -, -	IN, -, -	g, -, -	g, -, -	SPAD, -, -	IN, -, -	g, -, -	g, -, -		
Number of Subsamples	1	1	1	1	1	1	1	1		
Days After First/Last Applic.	51, 51	51, 51	51, 51	51, 51	59, 59	59, 59	59, 59	59, 59		
Trt-Eval Interval	51 DA-A	51 DA-A	51 DA-A	51 DA-A	59 DA-A	59 DA-A	59 DA-A	59 DA-A		
Trt Treatment	Rate Appl									
No. Name	Rate Unit Code Plot	9	10	11	12	13	14	15	16	
1 Well water	15 gal/a A 102	30.20	41.0	806.6251	215.65002	30.00	43.0	539.12505	82.28751	
	202	27.50	40.0	964.7501	184.43752	30.20	40.0	766.12508	161.73752	
	302	29.70	40.0	737.7501	158.90002	30.20	40.0	666.81257	147.55001	
	Mean =	29.13	40.3	836.3751	186.32919	30.13	41.0	657.35423	130.52501	
2 EA Well water	15 gal/a A 101	28.50	44.0	1106.6251	215.65002	32.60	43.0	663.97507	136.20001	
	201	31.10	41.0	994.5001	156.06252	29.80	41.0	950.56260	184.43752	
	301	29.80	44.0	995.8751	107.82501	28.80	44.0	1191.75012	227.00002	
	Mean =	29.80	43.0	1032.3334	159.84585	30.40	42.7	935.42926	182.54585	

Agricenter International

2022 Electroaeration in Rice

Trial ID: 2022 EA Rice Location: Agricenter International Trial Year: 2022
Protocol ID: 2022 EA Rice Investigator (Creator): Bruce Kirksey
Project ID: Study Director: Dr. K. Bruce Kirksey
Sponsor Contact: Talbott Howard

Rating Date	9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022		
Part Rated	PLANT, C	PLANT, C	PLANT, C	PLANT, C	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C		
Rating Type	CHLCON	HEIGHT	WEIFRE	WEIDRY	MOICON	WEIGHT	WEITES	YIELD		
Rating Unit/Min/Max	SPAD, -, -	IN, -, -	g, -, -	g, -, -	%, 0, 100	lb/plot, -, -	lb/plot, -, -	BU, -, -		
Number of Subsamples	1	1	1	1	1	1	1	1		
Days After First/Last Applic.	81, 81	81, 81	81, 81	81, 81	100, 100	100, 100	100, 100	100, 100		
Trt-Eval Interval	81 DA-A	81 DA-A	81 DA-A	81 DA-A	100 DA-A	100 DA-A	100 DA-A	100 DA-A		
Trt Treatment	Rate Appl									
No. Name	Rate Unit	Code Plot	25	26	27	28	29	30	31	32
1 Well water	15 gal/a A	102	29.00	44.0	964.75010	195.78752	13.340001334	133.940	46.520	153.7
		202	31.00	41.0	882.46259	184.43752	14.016668072	138.640	45.250	157.9
		302	29.50	45.0	783.15008	192.95002	13.686668039	127.650	44.340	145.9
		Mean =	29.83	43.3	876.78759	191.05835	13.681112481	133.410	45.370	152.5
2 EA Well water	15 gal/a A	101	29.80	54.0	1146.35011	209.97502	14.263334756	155.870	45.390	177.0
		201	30.00	44.0	904.38009	192.05002	14.720001472	140.530	44.570	158.7
		301	29.20	47.0	959.07510	201.46252	13.693334699	135.880	45.270	155.3
		Mean =	29.67	48.3	1003.26843	201.16252	14.225556976	144.093	45.077	163.7

Agricenter International

2022 Electroaeration in Rice							
Trial ID: 2022 EA Rice		Location: Agricenter International		Trial Year: 2022			
Protocol ID: 2022 EA Rice		Investigator (Creator): Bruce Kirksey					
Project ID:		Study Director: Dr. K. Bruce Kirksey					
		Sponsor Contact: Talbott Howard					

Rating Date	9/9/2022	9/9/2022	9/9/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022
Part Rated	PLANT, C	PLANT, C	PLANT, C	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	HEIGHT	WEIFRE	WEIDRY	MOICON	WEIGHT	WEITES	YIELD
Rating Unit/Min/Max	IN, -, -	g, -, -	g, -, -	%, 0, 100	lb/plot, -, -	lb/plot, -, -	BU, -, -
Number of Subsamples	1	1	1	1	1	1	1
Days After First/Last Applic.	81, 81	81, 81	81, 81	100, 100	100, 100	100, 100	100, 100
Trt-Eval Interval	81 DA-A	81 DA-A	81 DA-A	100 DA-A	100 DA-A	100 DA-A	100 DA-A
Trt Treatment	Rate Appl						
No. Name	Rate Unit Code						
1 Well water	15 gal/a A	43.3 -	876.78759 -	191.05835 b	13.681112481 -	133.410 -	45.370 -
2 EA Well water	15 gal/a A	48.3 -	1003.26843 -	201.16252 a	14.225556976 -	144.093 -	45.077 -
LSD P=.05	10.83	225.060286	8.855423	1.1887676174	25.4445	2.6905	28.11
Standard Deviation	3.08	64.063137	2.520686	0.3383812578	7.2427	0.7658	8.00
CV	6.72	6.82	1.29	2.43	5.22	1.69	5.06
Grand Mean	45.83	940.028011	196.110436	13.9533347287	138.7517	45.2233	158.11
Levene's F ^A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Levene's Prob(F)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Rank X2	.	.	.	.	.	.	.
P(Rank X2)	.	.	.	.	.	.	.
Skewness ^A	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kurtosis ^A	-1.875	-1.875	-1.875	-1.875	-1.875	-1.875	-1.875
Replicate F	2.228	4.938	17.144	2.311	1.666	1.379	1.698
Replicate Prob(F)	0.3098	0.1684	0.0551	0.3021	0.3752	0.4204	0.3707
Treatment F	3.947	5.847	24.102	3.883	3.264	0.220	2.923
Treatment Prob(F)	0.1853	0.1368	0.0391	0.1876	0.2126	0.6852	0.2295

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
^ACalculated from residual.



(2023 EA Rice)
of 4

Confidential

ARM 2023.6 Spray Plan Page 1

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Reps: 3 Plots: 5 by 20 feet
Appl. Amount: 15 GAL/AC Mix Size: 2 L (total for 3 plots; minimum=0.391 L)

Trt No.	Treatment Name	Rate	Appl Unit	Appl Code	Description	Amt Product to Measure	Rep 1	Rep 2	Rep 3
1	EA Well water	15 gal/a	A		Flood water		101	202	301
2	Well water	15 gal/a	A		Flood water		102	201	302

Sort Order: Treatment

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Status: E established
ARM Trial Created On: 6/1/2023

Trial Location

City: Memphis **Country:** USA United States
State/Prov.: Tennessee **County:** Shelby
Postal Code: 38120 **Climate Zone:** EPPOSE EPPO South East

Regulations

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

to evaluate the effect of electroaeration and its affect on city and well water in rice

Crop Description

Crop 1: C ORYSI Oryza sativa Dry-seeded paddy rice **BBCH Scale:** BRIC
Entry Date: 6/1/2023 **Stage Scale:** BBCH
Variety: PVL03
Attributes: Provisia
Planting Date: 5/31/2023 **Planting Rate:** 75 LB/A
Depth: 0.5 IN
Rows per Plot: 9 **Planting Method:** DRILLE drilled
Row Spacing: 7.5 IN **Planting Equipment:** PD plot drilling machine
Seed Bed: FRIABL friable
Soil Temperature: 72 F **Soil Moisture:** EXCELL excellent
Harvest Date: 11/28/2023 **Harvest Equipment:** Almaco Plot Combine
Harvested Width: 5 FT
Harvested Length: 30 FT
% Standard Moisture: 11.0

Site and Design

Treated Plot Width: 5 FT **Site Type:** FIELD field
Treated Plot Length: 20 FT
Treated Plot Area: 100.0 FT² **Tillage Type:** CONTIL conventional-till
Replications: 3 **Treatments:** 2 **Plots:** 6 **Study Design:** RACOB L Randomized Complete Block (RCB)
Distance between Blocks: 1 FT
Distance between 'Plot' Experimental Units: 0.5 FT

Soil Description

Description Name: 2023 Rice Field
% Sand: 29.6 **% OM:** 1.8 **Texture:** SIL silt loam
% Silt: 51.6 **Soil Name:** Falaya silt loam
% Clay: 18.6 **Fert. Level:** G good
pH: 6.3 **CEC:** 7.6
Soil Drainage: G good

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	ORYSI, BRIC

Notes

Context	Date	By	Notes
STATUS	6/1/2023	Ashley Barth	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	6/1/2023	Ashley Barth	Automatically added by ARM: Status changed to: E: changed by (XAGBAL).
STATUS	6/1/2023	Ashley Barth	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Rating Date	11/28/2023	11/28/2023	11/28/2023	11/28/2023	11/28/2023		
Part Rated	PLAEME, C	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C		
Rating Type	HEIGHT	MOICON	WEIGHT	WEITES	YIELD		
Rating Unit/Min/Max	IN, -, -	%, 0, 100	lb/plot, -, -	%, 0, 100	BU, -, -		
Sample Size		1 PLOT	1 PLOT	1 PLOT	1 A		
Number of Subsamples	1	1	1	1	1		
Plant-Eval Interval	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1		
ARM Action Codes					TY1		
Number of Decimals					1		
Trt Treatment	Rate Appl						
No. Name	Rate Unit Code Plot	1	2	3	4	5	
1 EA Well water	15 gal/a A	101	25.0	6.4700	24.7650	45.0000	168.0
		202	24.0	5.8600	23.9650	46.0050	163.6
		301	25.0	5.8150	21.6900	48.6350	148.1
		Mean =	24.7	6.0483	23.4733	46.5467	159.9
2 Well water	15 gal/a A	102	24.0	6.0350	22.2900	48.2900	151.9
		201	23.0	5.4550	20.2600	48.2500	138.9
		302	22.0	6.0100	19.8200	45.1600	135.1
		Mean =	23.0	5.8333	20.7900	47.2333	141.9

Part Rated

PLAEME = plant - emerged

GRAIN = grain

C = Crop is Part Rated

Rating Type

HEIGHT = height

MOICON = moisture content

WEIGHT = weight

WEITES = weight - test

YIELD = yield

Rating Unit/Min/Max

IN, , = inch

%, 0, 100 = percent

lb/plot, , = pounds per plot

BU, , = bushel

PLOT = total plot

A = acre

Plant-Eval Interval

181 DP-1 = 1 ORYSI 5/31/2023

ARM Action Codes

TY1 = 6.45333333*[C3]*(100-[C2])/89

Agricenter International

2023 Electroaeration in Rice

Trial ID: 2023 EA Rice
Protocol ID: 2023 EA Rice Location: Agricenter International Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator:

Rating Date	11/28/2023	11/28/2023	11/28/2023	11/28/2023	11/28/2023
Part Rated	PLAEME, C	GRAIN, C	GRAIN, C	GRAIN, C	GRAIN, C
Rating Type	HEIGHT	MOICON	WEIGHT	WEITES	YIELD
Rating Unit/Min/Max	IN, -, -	%, 0, 100	lb/plot, -, -	%, 0, 100	BU, -, -
Sample Size	1	1 PLOT	1 PLOT	1 PLOT	1 A
Number of Subsamples	1	1	1	1	1
Plant-Eval Interval	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1
ARM Action Codes					TY1
Number of Decimals					1
Trt Treatment	1	2	3	4	5
Rate Appl					
No. Name					
1 EA Well water	15 gal/a A	24.7 -	6.0483 -	23.4733 a	46.5467 -
2 Well water	15 gal/a A	23.0 -	5.8333 -	20.7900 b	47.2333 -
LSD P=.05	2.87	0.88283	2.32285	9.04670	15.01
Standard Deviation	0.82	0.25130	0.66120	2.57513	4.27
CV	3.43	4.23	2.99	5.49	2.83
Grand Mean	23.83	5.94083	22.13167	46.89000	150.92
Levene's F^	0.00	0.00	0.00	0.00	0.00
Levene's Prob(F)	1.00	1.00	1.00	1.00	1.00
Rank X2	.	.	.	.	.
P(Rank X2)	.	.	.	.	.
Shapiro-Wilk^	0.9129	0.9269	0.9338	0.9471	0.9471
P(Shapiro-Wilk)^	0.4558	0.556	0.6099	0.7167	0.7167
Skewness^	0.0	0.0	0.0	0.0	0.0
P(Skewness)^	1.0	1.0	1.0	1.0	1.0
Kurtosis^	-1.875	-1.875	-1.875	-1.875	-1.875
P(Kurtosis)^	0.4245	0.4245	0.4245	0.4245	0.4245
Replicate F	1.000	2.822	8.793	0.018	9.193
Replicate Prob(F)	0.5000	0.2616	0.1021	0.9827	0.0981
Treatment F	6.250	1.098	24.705	0.107	26.464
Treatment Prob(F)	0.1296	0.4047	0.0382	0.7750	0.0358

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TY1 = 6.45333333*[C3]*(100-[C2])/89