SEMI-FIELD TRIAL REPORT

Efficacy and Selectivity of AQUAGRAIN in lettuce.

TRIAL SITE
Blanca (Murcia), Spain

PROTOCOL ID: PBSA-1-2016

CONTRATOR TRIAL ID: 16_bio.v40

Date of Issue: February 23rd, 2017

Sponsor:

BIOIBERICA
Pol. Ind. "Mas Puigverd"
CTRA N-II KM 680.6
Palafolls (Barcelona), SPAIN
☏ +34 93 765 03 90

Testing Facility:

Métodos Servicios Agrícolas S.L.
C/ El Reguero s/n
30559 Abarán (Murcia, Spain)
☏ +34 609 47 46 24
🖷 +34 968 77 02 92

CONTENTS

1. ABSTRACT

The product **AQUAGRAIN** (NPK 5.4-6.6-4.2+40% MO) was tested at several rates on lettuce *(Lactuca sativa)* incorporated with the substrate before the transplanting. **AQUAGRAIN** was compared with the standard product **VENUS BITOP v2** (NPK 4-7-7+40% MO). AQUAGRAIN retained more water in the substrate with less drainage compared with the untreated and with the standard product. Moreover, AQUAGRAIN showed more plant vigor than the standard product.

2. SUMMARY

The aim of this trial was to determine the efficacy and selectivity of AQUAGRAIN in lettuce growing in pots and compared the growing effects at different rates. One replication was considered a pot, with 5 replications per treatment. At 22/11/2016 (one day before to transplant), the products (AQUAGRAIN and VENUS BITOP v.2) were incorporated with an artificial substrate composed by:

-70% of farmland in the area.

-6% of black peat

-24% of sand 0.8 mm.

Once the products and substrate were mixed, the pots were filled and the lettuces were transplanted. Then 1 liter of water was added per pot, avoiding the pot overflow. Two days after this first irrigation, the drainage was assessed. The irrigations were conducted weekly following crop requirements.

Crop vigor (compared with scale 100% = untreated) and % of plant with wilting symptoms were assessed at 12 DA-A (DA-A=Days After Application or transplanting), 22 DA-A, 42 DA-A, 50 DA-A, 53 DA-A, 65 DA-A, 76 DA-A and 79 DA-A.

At 09-02-2017 (79 DA-A) the fresh plant weight (g) was assessed, cutting all plant over the soil.

The products applied were:

Trt No.	Treatment Name	Description	Rate	Rate Unit	Appl Code	Appl Description
1	UNTREATED CHECK	NOT TREATED				
2	AQUAGRAIN	5.4-6.6-4.2+40%	250	kg/ha	A	Added to substrate
3	VENUS BITOP v.2	4-7-7+40%MO	250	kg/ha	A	Added to substrate
4	AQUAGRAIN	5.4-6.6-4.2+40%	500	kg/ha	A	Added to substrate
5	VENUS BITOP v.2	4-7-7+40%MO	500	kg/ha	A	Added to substrate
6	AQUAGRAIN	5.4-6.6-4.2+40%	1000	kg/ha	A	Added to substrate
7	VENUS BITOP v.2	4-7-7+40%MO	1000	kg/ha	A	Added to substrate
8	AQUAGRAIN	5.4-6.6-4.2+40%	2500	kg/ha	A	Added to substrate
9	VENUS BITOP v.2	4-7-7+40%MO	2500	kg/ha	A	Added to substrate
10	AQUAGRAIN	5.4-6.6-4.2+40%	5000	kg/ha	A	Added to substrate

3. CONCLUSIONS

Regarding the drainage 2 days after the first irrigation:

- Statistically significant differences were observed between treatments with AQUAGRAIN and standard product VENUS BITOP and the untreated.
- AQUAGRAIN retained more water in the substrate than VENUS BITOP.
- VENUS BITOP had similar drainage to the untreated.
- AQUAGRAIN showed a clear dose response, with less drainage when the rate was increased.

Regarding the plant vigor compared with the untreated (100%) and fresh plant weight:

- Statistically significant differences were observed between treated and untreated plots from 42 DA-A; moreover they were observed among treated plots.
- There were an increased in the plant vigor in all treatments compared with the untreated, except with treatment 10 (AQUAGRAIN at 5000 kg/ha).
- The plant vigor increased was higher with higher rates of the product.
- AQUAGRAIN obtained more plant vigor than the standard product VENUS BITOP.
- Despite to in treatment 8 (AQUAGRAIN at 2500 kg/ha) was observed lower plant vigor than the untreated (84%) at 22 DA-A, after 42 DA-A, this treatment obtained the highest plant vigor.
- In fresh plant weight, AQUAGRAIN showed a clear dose response and had higher weight than VENUS BITOP. AQUAGRAIN at rates 500, 1000 and2500 kg/ha obtained 8, 18 and 23% more weight than untreated.

Regarding the wilting symptoms:

- Statistically significant differences were observed between treated and untreated plots from 42 DA-A; moreover they were observed among treated plots.
- The wilting symptoms observed were probably due to the higher growing and the nutrients requirements of the plants.

Chlorosis symptoms were observed in the last assessments because probably the lack of nutrients in the plants, except in treatment 8 and 10 (which, despite to show chlorosis symptoms at the beginning by high rate, finally they had a higher fertilization compared with the other treatments and less deficiencies). The principal reason could be that the lettuces have a lower fertilization compared with a normal lettuce fertilization.

Normal Lettuce Fertilization	**FU**
N	125-200
P	60-70
K	200-230

-No effects on non-target organisms have been observed in current study.

-No problems when handling the experimental product.

-There were no deviations from the study plan as supplied by the sponsor.

4. MATERIALS AND METHODS

4.1. Site Description

General Trial Information
Study Director: CÁNDIDO MARÍN
Investigator: Germán Abellán Martínez **Title:** Manager

Discipline: D fertilizer
Trial Status: F one-year/final
Trial Reliability: HIGH
Trial Usage/Type: DEV Development/Registration
Initiation Date: 22-11-2016
Completion Date: 9-2-2017

GEP Accreditation Number: EOR 51/03

Trial Location
Address: Carretera de El Rellano km 1.9-Estación de Blanca
City: Blanca **Country:** ESP Spain
State/Prov.: Murcia MU **Region:** EM
Postal Code: 30540 **Climate Zone:** EPOMED EPPO Mediterranean

Latitude of LL Corner °: 38,2274277 N
Longitude of LL Corner °: 1,299619444 W ESPMU 38,7550888 **-** 37,3739013
-0,68813455 **-** -2,34441161
GPS Precision: G GPS for trial site

Directions:
Locality Moaire.
SigPac Polygon 7 PLot 41

Conducted Under GLP: No **Official Trial ID:** 16_bio.v40
Conducted Under GEP: Yes

No.	Guideline	Description
1.	PP 1/135(4)	phytotoxicity assessment
2.	PP 1/152(4)	Design and analysis of efficacy evaluation trials
3.	PP 1/181(4)	Conduct and reporting of efficacy evaluation trials including GEP

Keywords: Lettuce, AQUAGRAIN

Objectives:
- To study the efficacy and selectivity of AQUAGRAIN rate response on horticultural crops.
- To compare with standard treatments
- To compare with the untreated.

Contacts
Study Director: CÁNDIDO MARÍN

Investigator: Germán Abellán Martínez **Title:** Manager
Organization: Métodos Servicios Agrícolas S.L.
Address: Paraje el Reguero s/n
City+State/Prov: Abaran/Murcia
Postal Code: 30550 **E-mail:** german@metodosagro.com
Country: ESP Spain

Cooperator/Landowner

Cooperator: MSA-Blanca **Role:** FALDOW
Organization: Métodos Servicios Agrícolas S.L.
Address 1: Paraje el Reguero s/n
City: Abarán
State/Prov: Murcia
Postal Code: 30550
Country: ESP Spain

Crop Description

Crop 1: LACSA *Lactuca sativa* Lettuce
Variety: Aldea (baby)
BBCH Scale: BVNH
Nursery Date: 29-10-2016
Planting Date: 22-11-2016
Planting Rate, Unit: 1 P/POT
Planting Method: TRAHAN transplanted - hand
Planting Equipment: HA By Hand
Soil Moisture: DRY dry

Site and Design

Treated Plot : 16 cm of diameter (pot)
Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Treated Plot Area: 0.02 m2
Treatments: 10
Tillage Type: NOTILL no-till
Replications: 5
Study Design: RACOBL Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block
Block Arrangement: BSSPSS all blocks side by side, plots side by side

Soil Description

% Sand: 50,3 **% OM:** 1,34 **Texture:** SCL sandy clay loam
% Silt: 18,1 **pH:** 8
% Clay: 31,6 **CEC:** 3,07
Soil Drainage: G good

Analyzed By:
Moprilab

Additional Measured Elements

Date	Element	Quantity	Unit
2-11-2016	Na assimilable	2,33	meq/100g
2-11-2016	K assimilable	1,33	meq/100g
2-11-2016	Ca assimilable	16,19	meq/100g
2-11-2016	Mg assimilable	2,74	meq/100g
2-11-2016	Total OM	1,34	%
2-11-2016	Oxidizable OM	1,03	%
2-11-2016	Total N	0,085	%
2-11-2016	Nitrates	207,27	mg/kg
2-11-2016	Total organic C	0,78	%
2-11-2016	C/N	9,15	relation
2-11-2016	P assimilable	32,7	ppm
2-11-2016	Total Carbonates	33	%
2-11-2016	Active limestone	13,71	%
2-11-2016	Clorures	2,46	meq/100g
2-11-2016	Sulphates (SO4)	15,16	meq/100g
2-11-2016	Fe assimilable	2,01	ppm
2-11-2016	Mn assimilable	8,1	ppm
2-11-2016	Cu assimilable	1,3	ppm
2-11-2016	Zn assimilable	0,84	ppm
2-11-2016	B assimilable	0,67	ppm

Rate per Pot

Trt No.	Treatment Name	Rate	Rate Unit	Rate per plot (0.02 m^2)	Rate Pot unit
2	AQUAGRAIN	250	kg/ha	0,5	g
3	VENUS BITOP v.2	250	kg/ha	0,5	g
4	AQUAGRAIN	500	kg/ha	1	g
5	VENUS BITOP v.2	500	kg/ha	1	g
6	AQUAGRAIN	1000	kg/ha	2	g
7	VENUS BITOP v.2	1000	kg/ha	2	g
8	AQUAGRAIN	2500	kg/ha	5	g
9	VENUS BITOP v.2	2500	kg/ha	5	g
10	AQUAGRAIN	5000	kg/ha	10	g

Moisture and Weather Conditions

Overall Moisture Conditions: NORMAL normal
Closest Weather Station: CI22-Estación de Blanca **Distance, Unit:** 5 km

Application Description

	A
Application Date:	22-11-2016
Appl. Start Time:	8:00
Appl. Stop Time:	12:00
Application Method:	INCORP
Application Timing:	BEFTRA
Application Placement:	SOIL
Applied By:	Gomez, P.
Air Temperature, Unit:	16 C
% Relative Humidity:	60
Dew Presence (Y/N):	N no
Soil Moisture:	DRY
% Cloud Cover:	0
Next Moisture Occurred On:	22-2-2017
Time to Next Moisture, Unit:	1 HR

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	LACSA BVNH
Stage Scale Used:	BBCH
Stage Majority, Percent:	13

Application Equipment

	A
Equipment Type:	MANUAL
Incorporation Equip.:	MIXDRU
Hours to Incorp.:	0,5
Incorp. Depth, Unit	15 cm
Tank Mix (Y/N):	N no

Date	By	Notes
22-11-2016	Gomez, P.	All pots were irrigated with 1 l/pot (50 l/m2) post transplanting.

Schedule and Irrigation Amounts

Treatments	1 UTC	2 AQUAGRAIN 250 kg/ha	3 VENUS BITOP 250 kg/ha	4 AQUAGRAIN 500 kg/ha	5 VENUS BITOP 500 kg/ha
29/11/2016	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot
04/12/2016	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot
14/12/2016	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot
19/12/2016	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot
23/12/2016	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
03/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
07/01/2017	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot
11/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
13/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
14/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
15/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
21/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
23/01/2017	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot
26/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
28/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
30/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
31/01/2017	100 ml/pot	100 ml/pot	100 ml/pot	100 ml/pot	100 ml/pot
03/02/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
06/02/2017	140 ml/pot	140 ml/pot	140 ml/pot	140 ml/pot	140 ml/pot
08/02/2017	150 ml/pot	150 ml/pot	150 ml/pot	150 ml/pot	150 ml/pot
TOTAL	**1700 ml/pot**	**1700 ml/pot**	**1700 ml/pot**	**1700 ml/pot**	**1700 ml/pot**

Treatments	6 AQUAGRAIN 1000 kg/ha	7 VENUS BITOP 1000 kg/ha	8 AQUAGRAIN 2500 kg/ha	9 VENUS BITOP 2500 kg/ha	10 AQUAGRAIN 2500 kg/ha
29/11/2016	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot
04/12/2016	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot
14/12/2016	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot	50 ml/pot
19/12/2016	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot
23/12/2016	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
03/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
07/01/2017	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot
11/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
13/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
14/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
15/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
21/01/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
23/01/2017	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot	40 ml/pot
26/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
28/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
30/01/2017	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot	120 ml/pot
31/01/2017	100 ml/pot	100 ml/pot	100 ml/pot	100 ml/pot	100 ml/pot
03/02/2017	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot	80 ml/pot
06/02/2017	140 ml/pot	140 ml/pot	140 ml/pot	140 ml/pot	140 ml/pot
08/02/2017	150 ml/pot	150 ml/pot	150 ml/pot	150 ml/pot	150 ml/pot
TOTAL	**1700 ml/pot**	**1700 ml/pot**	**1700 ml/pot**	**1700 ml/pot**	**1700 ml/pot**

5. RESULTS

5.1. Data analysis

Table 1. Drainage in ml/pot. Average of 5 replications.

Crop Code				LACSA
BBCH Scale				BVNH
Crop Scientific Name				Lactuca sativa
Crop Name				Lettuce
Crop Variety				Aldea (baby)
Part Rated				
Rating Date				24-11-2016
Rating Type				DRAINAGE
Rating Unit				mL
Sample Size, Unit				5 POT
Reporting Basis, Unit				1 POT
Number of Subsamples				1
Crop Stage Majority				13
Crop Stage Scale				BBCH
Footnote Number				1
Assessed By				Gomez, P.
SE Group No.				1
Days After First/Last Applic.				2 2
Trt-Eval Interval				2 DA-A
Plant-Eval Interval				2 DP-1
ARM Action Codes				s05
Number of Decimals				2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1
1	UNTREATED CHECK				122,00 a
2	AQUAGRAIN	250	kg/ha	A	96,00 a
3	VENUS BITOP v.2	250	kg/ha	A	112,00 a
4	AQUAGRAIN	500	kg/ha	A	66,00 b
5	VENUS BITOP v.2	500	kg/ha	A	98,00 a
6	AQUAGRAIN	1000	kg/ha	A	62,00 b
7	VENUS BITOP v.2	1000	kg/ha	A	118,00 a
8	AQUAGRAIN	2500	kg/ha	A	30,00 c
9	VENUS BITOP v.2	2500	kg/ha	A	118,00 a
10	AQUAGRAIN	5000	kg/ha	A	8,00 d
LSD P=.05					20,683
Standard Deviation					16,125
CV					19,43
Bartlett's X2					4,968
P(Bartlett's X2)					0,837
Skewness					-0,5198
Kurtosis					-0,5776
Replicate F					2,538
Replicate Prob(F)					0,0566
Treatment F					30,705
Treatment Prob(F)					0,0001

Footnote 1: Drainage ml /pot

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)

Graph I. Drainage in ml/pot.

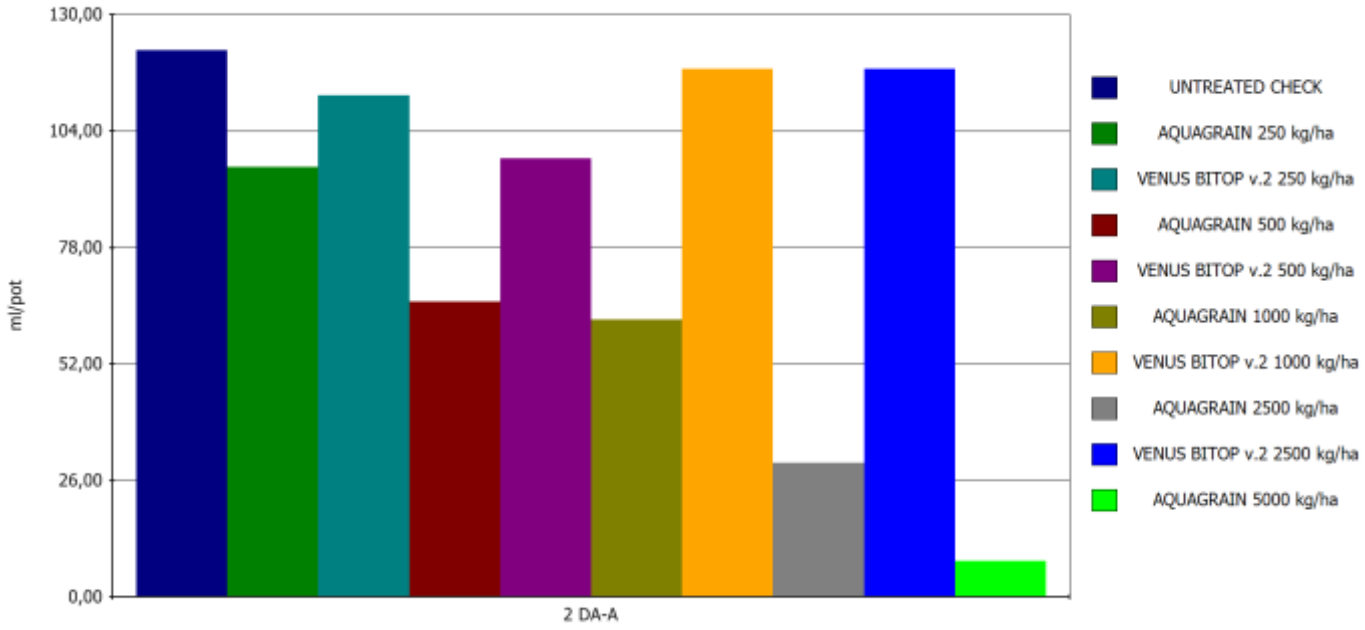


Table 2. Plant vigor, compared with the untreated (100%). Average of 5 replications.

Crop Code				LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale				BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name				Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name				Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety				Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated				PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date				4-12-2016	14-12-2016	3-1-2017	3-1-2017	11-1-2017	11-1-2017	14-1-2017	14-1-2017
Rating Type				VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR
Rating Unit				NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
Sample Size, Unit				5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit				1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples				1	1	1	1	1	1	1	1
Crop Stage Majority				15	18	33	33	35	35	35	35
Crop Stage Scale				BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number				3	3	3	3	3	3	3	3
Assessed By				Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.				3	4	5	52	6	55	7	58
Days After First/Last Applic.				12 12	22 22	42 42	42 42	50 50	50 50	53 53	53 53
Trt-Eval Interval				12 DA-A	22 DA-A	42 DA-A	42 DA-A	50 DA-A	50 DA-A	53 DA-A	53 DA-A
Plant-Eval Interval				12 DP-1	22 DP-1	42 DP-1	42 DP-1	50 DP-1	50 DP-1	53 DP-1	53 DP-1
ARM Action Codes				s05	s05		TA[5] s05		TA[7] s05		TA[9] s05
Number of Decimals				2	2	2	2	2	2	2	2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	3	4	5	6	7	8	9	10
1	UNTREATED CHECK				100,00 a	100,00 ab	100,00 a	100,00 a	100,00 b	100,00 a	100,00 c	100,00 a
2	AQUAGRAIN	250	kg/ha	A	100,00 a	100,00 ab	108,00 a	9,55 c	110,00 ab	0,00 c	110,00 bc	0,00 c
3	VENUS BITOP v.2	250	kg/ha	A	100,00 a	100,00 ab	100,00 a	100,00 a	104,00 ab	65,45 b	104,00 bc	65,45 b
4	AQUAGRAIN	500	kg/ha	A	100,00 a	102,00 ab	114,00 a	0,00 c	118,00 ab	0,00 c	118,00 bc	0,00 c
5	VENUS BITOP v.2	500	kg/ha	A	100,00 a	98,00 ab	112,00 a	0,00 c	110,00 ab	0,00 c	110,00 bc	0,00 c
6	AQUAGRAIN	1000	kg/ha	A	100,00 a	108,00 a	128,00 a	0,00 c	128,00 ab	0,00 c	128,00 ab	0,00 c
7	VENUS BITOP v.2	1000	kg/ha	A	100,00 a	100,00 ab	114,00 a	0,00 c	114,00 ab	0,00 c	110,00 bc	0,00 c
8	AQUAGRAIN	2500	kg/ha	A	100,00 a	84,00 b	128,00 a	0,00 c	134,00 a	0,00 c	140,00 a	0,00 c
9	VENUS BITOP v.2	2500	kg/ha	A	100,00 a	94,00 ab	110,00 a	4,82 c	112,00 ab	6,11 c	110,00 bc	34,55 bc
10	AQUAGRAIN	5000	kg/ha	A	76,00 b	64,00 c	52,00 b	61,49 b	52,00 c	61,49 b	60,00 d	37,57 bc
LSD P=.05					6,152	13,755	19,368	17,279 - 31,814	19,040	22,173 - 39,364	16,887	25,935 - 49,697
Standard Deviation					4,796	10,724	15,100	19,149t	14,844	21,901t	13,166	23,868t
CV					4,91	11,29	14,16	73,0t	13,72	104,31t	12,08	109,59t
Bartlett's X2					0,0	29,228	51,045	0,471	43,322	0,837	31,877	0,776
P(Bartlett's X2)					.	0,001*	0,001*	0,79	0,001*	0,658	0,001*	0,678
Skewness					-4,3451*	-3,1245*	-2,5813*	0,9633*	-2,5548*	1,3193*	-2,1708*	1,2656*
Kurtosis					21,1738*	12,2951*	7,582*	-1,0246	7,6693*	-0,1587	6,4983*	-0,303
Replicate F					1,000	0,565	1,789	1,031	1,530	0,815	2,077	1,420
Replicate Prob(F)					0,4203	0,6894	0,1523	0,4047	0,2143	0,5238	0,1042	0,2473
Treatment F					12,522	6,812	10,079	18,893	11,224	10,980	12,545	8,774
Treatment Prob(F)					0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Crop Code				LACSA	LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale				BVNH	BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name				Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name				Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety				Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated				PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date				26-1-2017	26-1-2017	6-2-2017	6-2-2017	9-2-2017	9-2-2017
Rating Type				VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR
Rating Unit				NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
Sample Size, Unit				5 POT	5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit				1 POT	1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples				1	1	1	1	1	1
Crop Stage Majority				42	42	45	45	47	47
Crop Stage Scale				BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number				3	3	3	3	3	3
Assessed By				Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.				8	61	9	64	10	67
Days After First/Last Applic.				65 65	65 65	76 76	76 76	79 79	79 79
Trt-Eval Interval				65 DA-A	65 DA-A	76 DA-A	76 DA-A	79 DA-A	79 DA-A
Plant-Eval Interval				65 DP-1	65 DP-1	76 DP-1	76 DP-1	79 DP-1	79 DP-1
ARM Action Codes					TA[11] s05		TA[13] s05		TA[15] s05
Number of Decimals				2	2	2	2	2	2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	11	12	13	14	15	16
1	UNTREATED CHECK				100,00 c	100,00 a	100,00 b	100,00 a	100,00 bc	100,00 a
2	AQUAGRAIN	250	kg/ha	A	110,00 bc	0,00 b	100,00 b	100,00 a	102,00 bc	59,22 ab
3	VENUS BITOP v.2	250	kg/ha	A	102,00 c	90,45 a	102,00 b	90,45 a	104,00 bc	65,45 ab
4	AQUAGRAIN	500	kg/ha	A	120,00 abc	0,00 b	110,00 b	9,55 b	108,00 b	9,55 b
5	VENUS BITOP v.2	500	kg/ha	A	110,00 bc	0,00 b	112,00 ab	0,00 b	106,00 b	34,55 ab
6	AQUAGRAIN	1000	kg/ha	A	130,00 ab	0,00 b	120,00 ab	0,00 b	116,00 ab	0,00 b
7	VENUS BITOP v.2	1000	kg/ha	A	112,00 bc	0,00 b	112,00 ab	0,00 b	110,00 b	0,00 b
8	AQUAGRAIN	2500	kg/ha	A	140,00 a	0,00 b	130,00 a	0,00 b	128,00 a	0,00 b
9	VENUS BITOP v.2	2500	kg/ha	A	114,00 bc	9,55 b	116,00 ab	0,00 b	112,00 b	0,00 b
10	AQUAGRAIN	5000	kg/ha	A	60,00 d	37,57 b	84,00 c	30,02 b	88,00 c	31,88 ab
LSD P=.05					17,331	19,148 - 38,618	13,192	21,410 - 41,432	12,553	43,455 - 64,293
Standard Deviation					13,511	20,231t	10,285	21,488t	9,787	32,151t
CV					12,31	92,89t	9,47	70,87t	9,11	113,73t
Bartlett's X2					24,703	0,208	25,985	0,266	31,758	0,905
P(Bartlett's X2)					0,001*	0,901	0,001*	0,875	0,001*	0,924
Skewness					-2,1491*	1,2656*	-1,8385*	0,6957*	-1,5661*	0,7929*
Kurtosis					6,2535*	-0,303	7,4479*	-1,5131*	5,985*	-1,3441*
Replicate F					1,517	1,544	0,643	0,220	1,336	0,372
Replicate Prob(F)					0,2178	0,2102	0,6355	0,9254	0,2753	0,8272
Treatment F					12,427	13,972	7,691	16,384	5,803	4,492
Treatment Prob(F)					0,0001	0,0001	0,0001	0,0001	0,0001	0,0005

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.

ARM Action Codes
TA[5] = Arcsine square root percent([5])
TA[7] = Arcsine square root percent([7])
TA[9] = Arcsine square root percent([9])
TA[11] = Arcsine square root percent([11])
TA[13] = Arcsine square root percent([13])
TA[15] = Arcsine square root percent([15])

Footnote 3: Plant vigor compared with the untreated = 100%

Graph II. Plant vigor, compared with the untreated (100%).

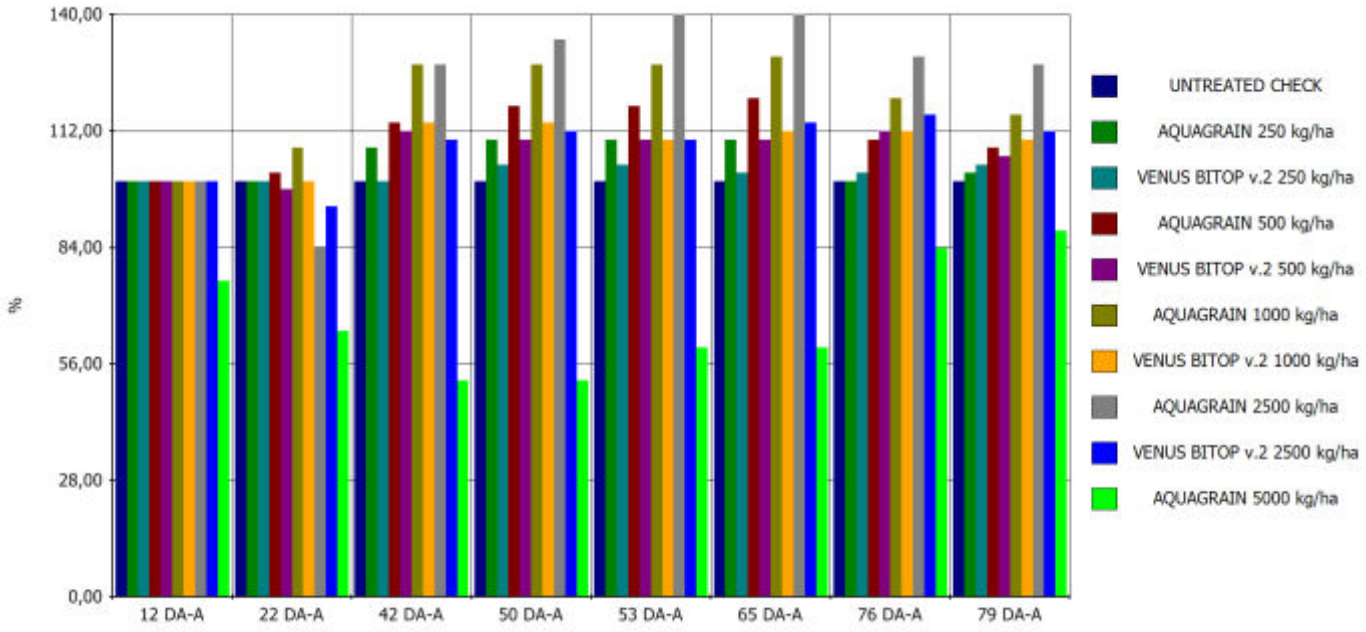


Table 3. % of plant with wilting symptoms. Average of 5 replications.

Crop Code				LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale				BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name				Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name				Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety				Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated				PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date				4-12-2016	14-12-2016	3-1-2017	3-1-2017	11-1-2017	14-1-2017	26-1-2017	26-1-2017
Rating Type				WILTIN	WILTIN	WILTIN	WILTIN	WILTIN	WILTIN	WILTIN	WILTIN
Rating Unit				%	%	%	%	%	%	%	%
Sample Size, Unit				5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit				1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples				1	1	1	1	1	1	1	1
Crop Stage Majority				15	18	33	33	35	35	42	42
Crop Stage Scale				BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number				4	4	4	4	4	4	4	4
Assessed By				Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.				11	12	13	71	14	15	16	74
Days After First/Last Applic.				12 12	22 22	42 42	42 42	50 50	53 53	65 65	65 65
Trt-Eval Interval				12 DA-A	22 DA-A	42 DA-A	42 DA-A	50 DA-A	53 DA-A	65 DA-A	65 DA-A
Plant-Eval Interval				12 DP-1	22 DP-1	42 DP-1	42 DP-1	50 DP-1	53 DP-1	65 DP-1	65 DP-1
ARM Action Codes				s05	s05		TL[19] s05	s05	s05		TL[23] s05
Number of Decimals				2	2	2	2	2	2	2	2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	17	18	19	20	21	22	23	24
1	UNTREATED CHECK				0,00 a	0,00 b	0,00 b	0,00 c	0,00 c	0,00 b	0,00 c	0,00 d
2	AQUAGRAIN	250	kg/ha	A	0,00 a	0,00 b	5,00 ab	5,00 ab	5,00 b	1,00 b	12,00 ab	10,57 ab
3	VENUS BITOP v.2	250	kg/ha	A	0,00 a	0,00 b	1,00 b	0,43 c	2,00 bc	1,00 b	6,00 bc	5,77 bc
4	AQUAGRAIN	500	kg/ha	A	0,00 a	0,00 b	5,00 ab	5,00 ab	5,00 b	1,00 b	10,00 ab	10,00 ab
5	VENUS BITOP v.2	500	kg/ha	A	0,00 a	0,00 b	3,00 b	1,93 b	5,00 b	1,00 b	10,00 ab	10,00 ab
6	AQUAGRAIN	1000	kg/ha	A	0,00 a	0,00 b	10,00 a	8,08 a	13,00 a	6,00 a	16,00 a	14,52 a
7	VENUS BITOP v.2	1000	kg/ha	A	0,00 a	0,00 b	5,00 ab	5,00 ab	5,00 b	0,00 b	10,00 ab	10,00 ab
8	AQUAGRAIN	2500	kg/ha	A	0,00 a	0,00 b	5,00 ab	5,00 ab	5,00 b	3,00 ab	7,00 bc	6,65 bc
9	VENUS BITOP v.2	2500	kg/ha	A	0,00 a	0,00 b	5,00 ab	5,00 ab	5,00 b	1,00 b	7,00 bc	6,65 bc
10	AQUAGRAIN	5000	kg/ha	A	0,00 a	23,00 a	5,00 ab	5,00 ab	5,00 b	5,00 a	5,00 bc	5,00 c
LSD P=.05					.	12,386	3,782	1,097 - 3,940	2,985	2,556	4,954	2,637 - 4,738
Standard Deviation					0,000	9,657	2,949	0,193t	2,327	1,993	3,862	0,123t
CV					0,0	419,85	67,01	30,82t	46,55	104,9	46,53	14,09t
Bartlett's X2					0,0	0,0	8,52	0,682	2,82	0,293	11,282	2,283
P(Bartlett's X2)					.	.	0,014*	0,711	0,093	1,00	0,024*	0,684
Skewness					.	6,0429*	3,2705*	-0,9951*	2,9528*	0,9333*	1,4375*	-1,5405*
Kurtosis					.	38,6446*	18,8594*	0,1072	15,74*	-0,2566	3,8222*	2,5357*
Replicate F					0,000	1,000	1,064	1,266	0,692	0,441	0,721	0,788
Replicate Prob(F)					1,0000	0,4203	0,3885	0,3014	0,6021	0,7784	0,5835	0,5406
Treatment F					0,000	2,836	4,243	13,289	10,051	5,441	6,335	36,350
Treatment Prob(F)					1,0000	0,0125	0,0008	0,0001	0,0001	0,0001	0,0001	0,0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Could not calculate LSD (% mean diff) for columns 17 because error mean square = 0.

Crop Code				LACSA	LACSA	LACSA	LACSA
BBCH Scale				BVNH	BVNH	BVNH	BVNH
Crop Scientific Name				Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name				Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety				Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated				PLANT C	PLANT C	PLANT C	PLANT C
Rating Date				6-2-2017	6-2-2017	9-2-2017	9-2-2017
Rating Type				WILTIN	WILTIN	WILTIN	WILTIN
Rating Unit				%	%	%	%
Sample Size, Unit				5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit				1 POT	1 POT	1 POT	1 POT
Number of Subsamples				1	1	1	1
Crop Stage Majority				45	45	47	47
Crop Stage Scale				BBCH	BBCH	BBCH	BBCH
Footnote Number				4	4	4	4
Assessed By				Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.				17	77	18	80
Days After First/Last Applic.				76 76	76 76	79 79	79 79
Trt-Eval Interval				76 DA-A	76 DA-A	79 DA-A	79 DA-A
Plant-Eval Interval				76 DP-1	76 DP-1	79 DP-1	79 DP-1
ARM Action Codes					TL[25] s05		TL[27] s05
Number of Decimals				2	2	2	2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	25	26	27	28
1	UNTREATED CHECK				1,00 d	0,43 d	2,00 b	1,05 c
2	AQUAGRAIN	250	kg/ha	A	16,00 a	14,52 a	24,00 a	20,09 a
3	VENUS BITOP v.2	250	kg/ha	A	7,00 bc	6,65 bc	16,00 ab	14,52 ab
4	AQUAGRAIN	500	kg/ha	A	10,00 abc	10,00 abc	9,00 ab	8,74 ab
5	VENUS BITOP v.2	500	kg/ha	A	10,00 abc	10,00 abc	15,00 ab	12,75 ab
6	AQUAGRAIN	1000	kg/ha	A	10,00 abc	10,00 abc	16,00 ab	14,52 ab
7	VENUS BITOP v.2	1000	kg/ha	A	13,00 ab	12,06 ab	16,00 ab	14,52 ab
8	AQUAGRAIN	2500	kg/ha	A	10,00 abc	10,00 abc	10,00 ab	10,00 ab
9	VENUS BITOP v.2	2500	kg/ha	A	10,00 abc	10,00 abc	8,00 b	7,63 ab
10	AQUAGRAIN	5000	kg/ha	A	5,00 cd	5,00 c	6,00 b	5,77 b
LSD P=.05					4,620	0,797 - 5,550	10,089	1,946 - 10,277
Standard Deviation					3,602	0,150t	7,865	0,226t
CV					39,15	16,06t	64,47	22,3t
Bartlett's X2					8,242	3,803	28,248	11,011
P(Bartlett's X2)					0,041*	0,284	0,001*	0,201
Skewness					1,303*	-2,0176*	1,782*	-1,2088*
Kurtosis					4,3316*	4,5283*	4,5083*	2,999*
Replicate F					0,636	0,423	0,416	1,005
Replicate Prob(F)					0,6402	0,7913	0,7958	0,4175
Treatment F					6,578	19,524	3,283	8,036
Treatment Prob(F)					0,0001	0,0001	0,0051	0,0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Could not calculate LSD (% mean diff) for columns 17 because error mean square = 0.

ARM Action Codes
TL[19] = LOG([19]+ 1)
TL[23] = LOG([23]+ 1)
TL[25] = LOG([25]+ 1)
TL[27] = LOG([27]+ 1)

Footnote 4: % of plant with wilting symptoms

Graph III. % of plant with wilting symptoms.

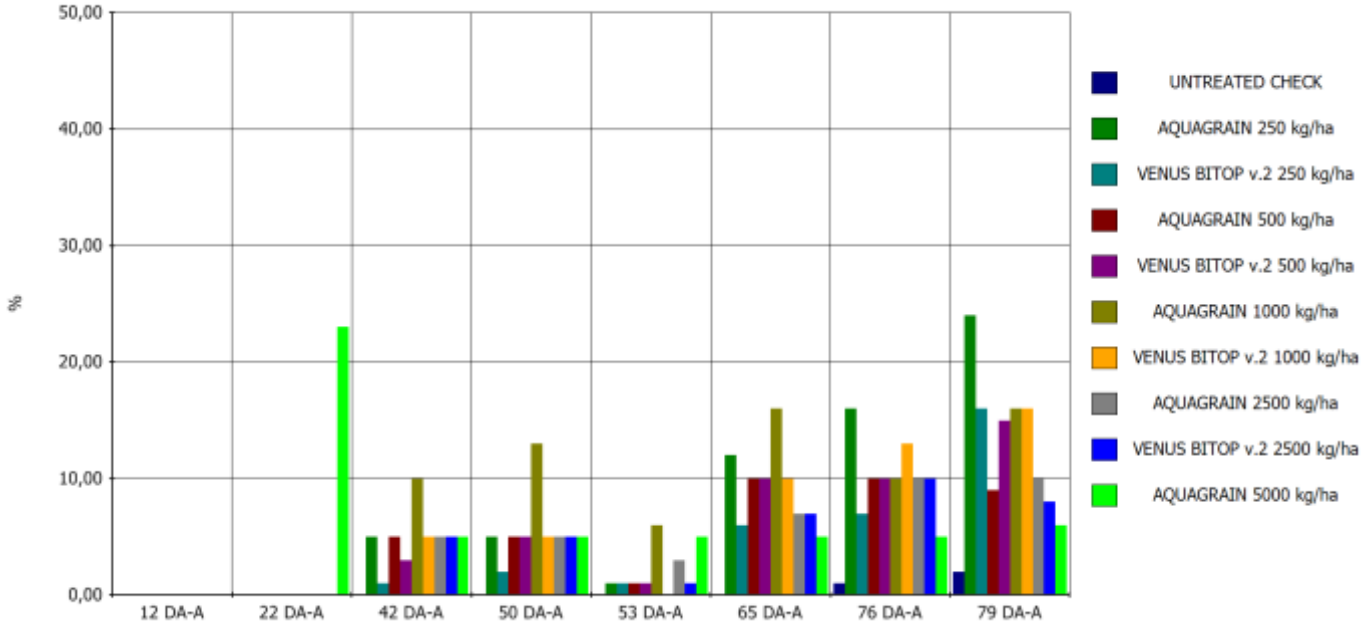


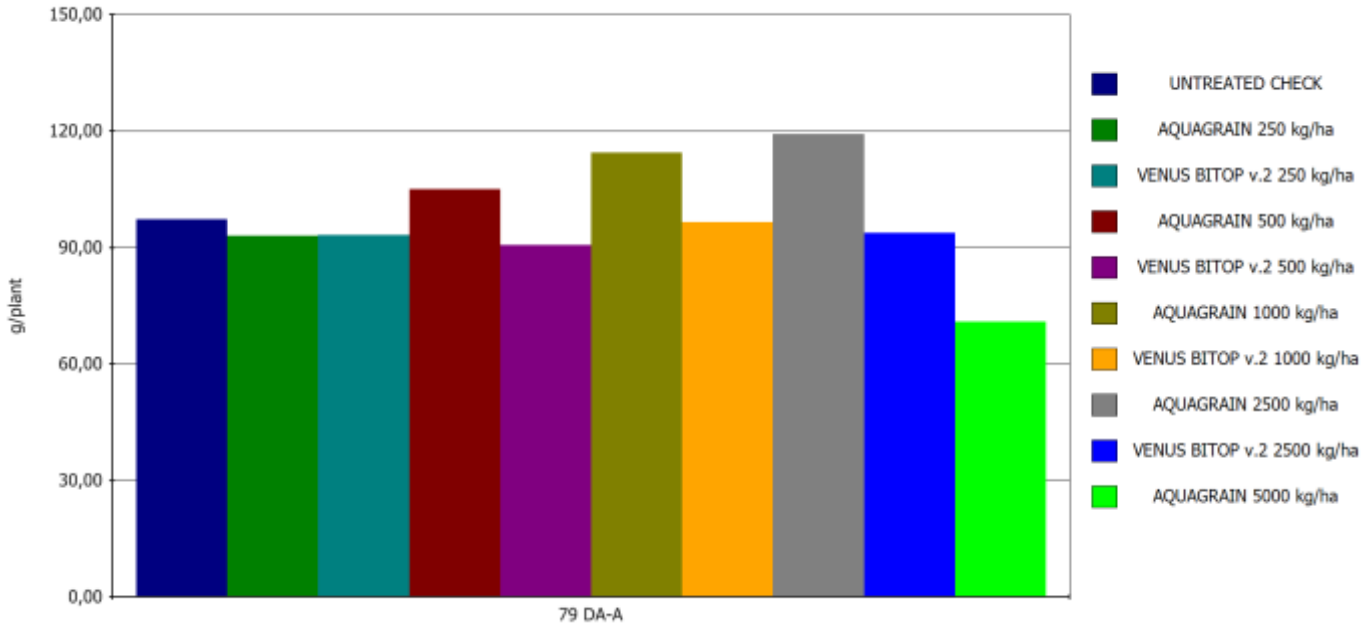
Table 4. Plant weight (g) at harvest. Average of 5 replications.

Crop Code				LACSA
BBCH Scale				BVNH
Crop Scientific Name				Lactuca sativa
Crop Name				Lettuce
Crop Variety				Aldea (baby)
Part Rated				PLANT C
Rating Date				9-2-2017
Rating Type				WEIFRE
Rating Unit				g
Sample Size, Unit				5 POT
Reporting Basis, Unit				1 POT
Number of Subsamples				1
Crop Stage Majority				47
Crop Stage Scale				BBCH
Footnote Number				2
Assessed By				Gomez, P.
SE Group No.				2
Days After First/Last Applic.				79 79
Trt-Eval Interval				79 DA-A
Plant-Eval Interval				79 DP-1
ARM Action Codes				s05 apoc
Number of Decimals				2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	2
1	UNTREATED CHECK				97,24 ab (100%)
2	AQUAGRAIN	250	kg/ha	A	93,12 ab (96%)
3	VENUS BITOP v.2	250	kg/ha	A	93,32 ab (96%)
4	AQUAGRAIN	500	kg/ha	A	105,14 ab (108%)
5	VENUS BITOP v.2	500	kg/ha	A	90,70 ab (93%)
6	AQUAGRAIN	1000	kg/ha	A	114,40 a (118%)
7	VENUS BITOP v.2	1000	kg/ha	A	96,58 ab (99%)
8	AQUAGRAIN	2500	kg/ha	A	119,22 a (123%)
9	VENUS BITOP v.2	2500	kg/ha	A	93,88 ab (97%)
10	AQUAGRAIN	5000	kg/ha	A	70,92 b (73%)
LSD P=.05					22,867
Standard Deviation					17,827
CV					18,29
Bartlett's X2					51,776
P(Bartlett's X2)					0,001*
Skewness					-1,9946*
Kurtosis					7,4367*
Replicate F					0,845
Replicate Prob(F)					0,5057
Treatment F					2,831
Treatment Prob(F)					0,0126

Footnote 2: plant weight (g)

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)

Graph IV. Plant weight (g) at harvest.



6. APPENDICES

6.1. Appendix 1 - Protocol

Trt No.	Treatment Name	Description	Rate	Rate Unit	Appl Code	Appl Description
1	UNTREATED CHECK	NOT TREATED				
2	AQUAGRAIN	5.4-6.6-4.2+40%	250	kg/ha	A	Added to substrate
3	VENUS BITOP v.2	4-7-7+40%MO	250	kg/ha	A	Added to substrate
4	AQUAGRAIN	5.4-6.6-4.2+40%	500	kg/ha	A	Added to substrate
5	VENUS BITOP v.2	4-7-7+40%MO	500	kg/ha	A	Added to substrate
6	AQUAGRAIN	5.4-6.6-4.2+40%	1000	kg/ha	A	Added to substrate
7	VENUS BITOP v.2	4-7-7+40%MO	1000	kg/ha	A	Added to substrate
8	AQUAGRAIN	5.4-6.6-4.2+40%	2500	kg/ha	A	Added to substrate
9	VENUS BITOP v.2	4-7-7+40%MO	2500	kg/ha	A	Added to substrate
10	AQUAGRAIN	5.4-6.6-4.2+40%	5000	kg/ha	A	Added to substrate

Trial Establishment Guidelines

Project ID: PBSA-1-2016
Developer: CÁNDIDO MARÍN
Revision Number: 1,0
Revision Status: F FINAL
Revision Date: 22-2-2017
Site Type: FIELD O FIELD
Country: ESP SPAIN
Climate Zone: EPOMED EPPO MEDITERRANEAN
Experimental Unit: 1 PLOT
Replications: 5
Tillage Type: CONTIL CONVENTIONAL-TILL
Trial Usage/Type: DEV DEVELOPMENT/REGISTRATION
Study Design: RACOBL RANDOMIZED COMPLETE BLOCK (RCB)
Product Type: Fertilizer **Untreated Arrangement:** INCLUDED single control randomized in each block
Site Region: EM
Discipline: D fertilizer

Keywords: Lettuce, AQUAGRAIN

Number of Trials
1

Total Trials: 1

Conduct Under GLP: No
Conduct Under GEP: Yes **Officially Recognized Organization:** EOR 51/03

No.	Guideline	Description
1.	PP 1/135(4)	phytotoxicity assessment
2.	PP 1/152(4)	Design and analysis of efficacy evaluation trials
3.	PP 1/181(4)	Conduct and reporting of efficacy evaluation trials including GEP

Objectives:

- To study the efficacy and selectivity of AQUAGRAIN on horticultural crops.
- To compare with standard treatments
- To compare with the untreated.

Crop Description

Crop 1: LACSA *Lactuca sativa* Lettuce
BBCH Scale: BVNH

Application

	A
Application Method:	INCORP
Application Timing:	BEFTRA
Application Placement:	SOIL
Equipment Type:	MANUAL
Incorporation Equip.:	MIXDRU
Hours to Incorp.:	0,5
Incorp. Depth, Unit	15 cm
Tank Mix (Y/N):	N no

Application Directions:
Aquagrain and Venus were mixed with the soil.
The soil was composed by:
Farmland in the area: 70%
Black peat: 6%
Sand 0.8 mm: 24%
After transplanting, the substrate was irrigate.

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	LACSA BVNH
Stage Scale Used:	BBCH
Stage Majority, Percent:	13

Geographic Area/Environmental Considerations:
Geographical distribution: Spain.

Cropping Considerations:
Crop in good conditions, without symptoms of illness or damage.
Uniform field conditions to confirm good agricultural practice. Select good and healthy growing plants with uniform vegetative growth.
The crop was growing in pots of 16 size (2.5 l of capacity, 0.020 m2 of surface).

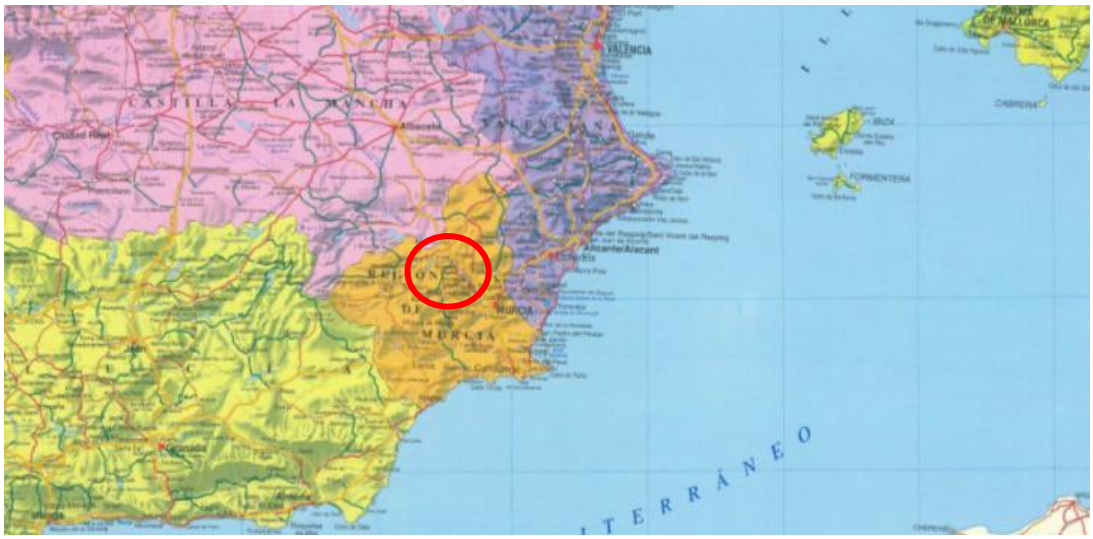
Data to Collect:
Growth, color, size, wilting symptoms, leaf fresh mass. Pictures.

Statistical Analysis:
Statistical analysis and evaluation should be carried out using appropriate methods which should be indicated in the final report.

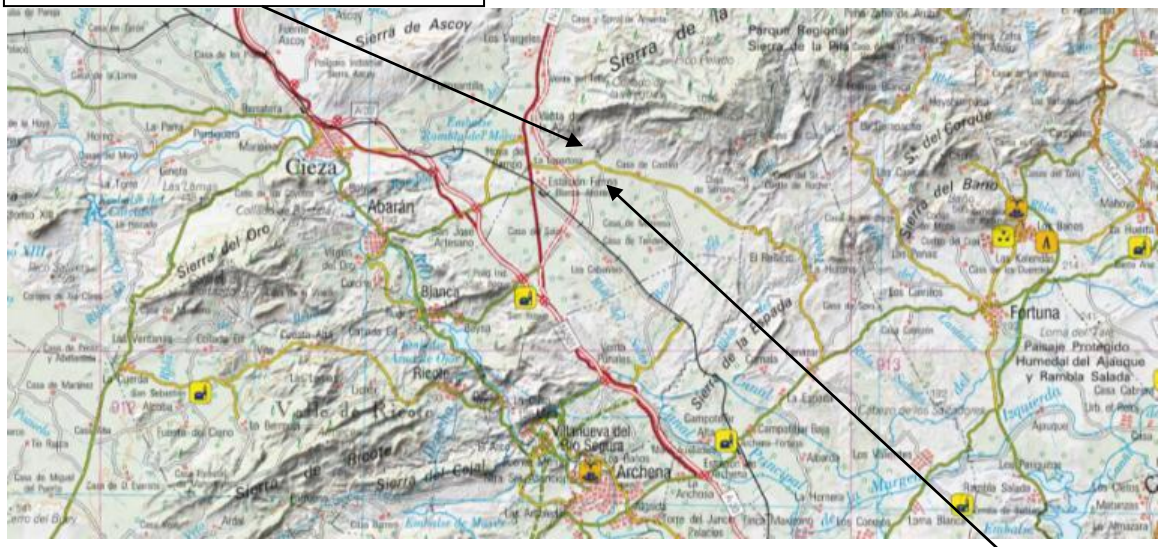
General Comments

General Comments:
Irrigation: flood
Plot: 1 plant in a pot.
Replication: 5
Conditions: standard crop

6.2. Appendix 2 - Trial location



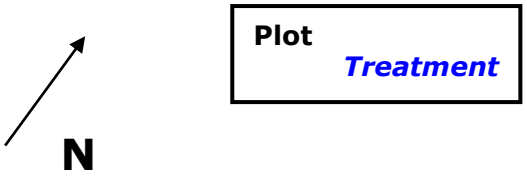
WEATHER STATION



TRIAL SITE

6.3. Appendix 3 - Plot Layout

7 *7*	6 *6*	5 *5*	4 *4*	3 *3*	2 *2*	1 *1*
8 *8*	9 *9*	10 *10*				



Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Rep 1	2	3	4	5
1	UNTREATED CHECK				111	112	113	114	115
2	AQUAGRAIN	250	kg/ha	A	121	122	123	124	125
3	VENUS BITOP v.2	250	kg/ha	A	131	132	133	134	135
4	AQUAGRAIN	500	kg/ha	A	141	142	143	144	145
5	VENUS BITOP v.2	500	kg/ha	A	151	152	153	154	155
6	AQUAGRAIN	1000	kg/ha	A	161	162	163	164	165
7	VENUS BITOP v.2	1000	kg/ha	A	171	172	173	174	175
8	AQUAGRAIN	2500	kg/ha	A	181	182	183	184	185
9	VENUS BITOP v.2	2500	kg/ha	A	191	192	193	194	195
10	AQUAGRAIN	5000	kg/ha	A	1101	1102	1103	1104	1105

6.4. Appendix 4 - Raw Data

Crop Code	LACSA
BBCH Scale	BVNH
Crop Scientific Name	Lactuca sativa
Crop Name	Lettuce
Crop Variety	Aldea (baby)
Part Rated	
Rating Date	24-11-2016
Rating Type	DRAINAGE
Rating Unit	mL
Sample Size, Unit	5 POT
Reporting Basis, Unit	1 POT
Number of Subsamples	1
Crop Stage Majority	13
Crop Stage Scale	BBCH
Footnote Number	1
Assessed By	Gomez, P.
SE Group No.	1
Days After First/Last Applic.	2 2
Trt-Eval Interval	2 DA-A
Plant-Eval Interval	2 DP-1
ARM Action Codes	s05
Number of Decimals	2

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Plot	1
1	UNTREATED CHECK				109	100,00
					205	120,00
					304	130,00
					410	150,00
					504	110,00
					Mean =	122,00
2	AQUAGRAIN	250	kg/ha	A	110	120,00
					203	70,00
					306	90,00
					407	100,00
					505	100,00
					Mean =	96,00
3	VENUS BITOP v.2	250	kg/ha	A	104	110,00
					206	80,00
					305	120,00
					403	140,00
					502	110,00
					Mean =	112,00
4	AQUAGRAIN	500	kg/ha	A	106	60,00
					210	70,00
					308	80,00
					404	60,00
					503	60,00
					Mean =	66,00
5	VENUS BITOP v.2	500	kg/ha	A	103	130,00
					209	90,00
					307	80,00
					406	100,00
					508	90,00
					Mean =	98,00
6	AQUAGRAIN	1000	kg/ha	A	107	70,00
					201	80,00
					310	50,00
					401	70,00
					509	40,00
					Mean =	62,00
7	VENUS BITOP v.2	1000	kg/ha	A	101	130,00
					208	100,00
					302	110,00
					409	130,00
					506	120,00
					Mean =	118,00
8	AQUAGRAIN	2500	kg/ha	A	105	50,00
					202	30,00
					301	0,00
					408	40,00
					501	30,00
					Mean =	30,00
9	VENUS BITOP v.2	2500	kg/ha	A	108	120,00
					204	110,00
					309	150,00
					405	120,00
					510	90,00
					Mean =	118,00
10	AQUAGRAIN	5000	kg/ha	A	102	0,00
					207	0,00
					303	20,00
					402	20,00
					507	0,00
					Mean =	8,00

Footnote 1: Drainage ml /pot

Crop Code					LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale					BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name					Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name					Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety					Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated					PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date					4-12-2016	14-12-2016	3-1-2017	3-1-2017	11-1-2017	11-1-2017	14-1-2017
Rating Type					VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR
Rating Unit					NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
Sample Size, Unit					5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit					1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples					1	1	1	1	1	1	1
Crop Stage Majority					15	18	33	33	35	35	35
Crop Stage Scale					BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number					3	3	3	3	3	3	3
Assessed By					Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.					3	4	5	52	6	55	7
Days After First/Last Applic.					12 12	22 22	42 42	42 42	50 50	50 50	53 53
Trt-Eval Interval					12 DA-A	22 DA-A	42 DA-A	42 DA-A	50 DA-A	50 DA-A	53 DA-A
Plant-Eval Interval					12 DP-1	22 DP-1	42 DP-1	42 DP-1	50 DP-1	50 DP-1	53 DP-1
ARM Action Codes					s05	s05		TA[5] s05		TA[7] s05	
Number of Decimals					2	2	2	2	2	2	2
Trt No.	Treatment Name	Rate	Unit	Appl Code	Plot	3	4	5	6	7	8	9
1	UNTREATED CHECK				109	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					205	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					304	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					410	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					504	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					Mean =	100,00	100,00	100,00	100,00d	100,00	100,00d	100,00
2	AQUAGRAIN	250	kg/ha	A	110	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					203	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					306	100,00	100,00	100,00	90,00	110,00	0,00	110,00
					407	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					505	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					Mean =	100,00	100,00	108,00	9,55d	110,00	0,00d	110,00
3	VENUS BITOP v.2	250	kg/ha	A	104	100,00	100,00	100,00	90,00	110,00	0,00	110,00
					206	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					305	100,00	100,00	100,00	90,00	100,00	90,00	110,00
					403	100,00	100,00	100,00	90,00	100,00	90,00	100,00
					502	100,00	100,00	100,00	90,00	110,00	0,00	100,00
					Mean =	100,00	100,00	100,00	100,00d	104,00	65,45d	104,00
4	AQUAGRAIN	500	kg/ha	A	106	100,00	100,00	110,00	0,00	120,00	0,00	120,00
					210	100,00	100,00	110,00	0,00	120,00	0,00	120,00
					308	100,00	100,00	120,00	0,00	120,00	0,00	120,00
					404	100,00	110,00	110,00	0,00	120,00	0,00	120,00
					503	100,00	100,00	120,00	0,00	110,00	0,00	110,00
					Mean =	100,00	102,00	114,00	0,00d	118,00	0,00d	118,00
5	VENUS BITOP v.2	500	kg/ha	A	103	100,00	90,00	110,00	0,00	110,00	0,00	110,00
					209	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					307	100,00	100,00	120,00	0,00	110,00	0,00	110,00
					406	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					508	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					Mean =	100,00	98,00	112,00	0,00d	110,00	0,00d	110,00
6	AQUAGRAIN	1000	kg/ha	A	107	100,00	100,00	130,00	0,00	130,00	0,00	130,00
					201	100,00	110,00	130,00	0,00	130,00	0,00	130,00
					310	100,00	110,00	130,00	0,00	130,00	0,00	130,00
					401	100,00	110,00	130,00	0,00	130,00	0,00	130,00
					509	100,00	110,00	120,00	0,00	120,00	0,00	120,00
					Mean =	100,00	108,00	128,00	0,00d	128,00	0,00d	128,00
7	VENUS BITOP v.2	1000	kg/ha	A	101	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					208	100,00	100,00	110,00	0,00	110,00	0,00	110,00
					302	100,00	100,00	120,00	0,00	110,00	0,00	110,00
					409	100,00	100,00	110,00	0,00	120,00	0,00	110,00
					506	100,00	100,00	120,00	0,00	120,00	0,00	110,00
					Mean =	100,00	100,00	114,00	0,00d	114,00	0,00d	110,00
8	AQUAGRAIN	2500	kg/ha	A	105	100,00	80,00	120,00	0,00	130,00	0,00	140,00
					202	100,00	90,00	130,00	0,00	130,00	0,00	140,00
					301	100,00	80,00	130,00	0,00	140,00	0,00	140,00
					408	100,00	90,00	130,00	0,00	140,00	0,00	140,00
					501	100,00	80,00	130,00	0,00	130,00	0,00	140,00
					Mean =	100,00	84,00	128,00	0,00d	134,00	0,00d	140,00
9	VENUS BITOP v.2	2500	kg/ha	A	108	100,00	100,00	120,00	0,00	120,00	0,00	120,00
					204	100,00	90,00	110,00	0,00	110,00	0,00	110,00
					309	100,00	100,00	130,00	0,00	130,00	0,00	120,00
					405	100,00	80,00	80,00	63,43	90,00	71,57	100,00
					510	100,00	100,00	110,00	0,00	110,00	0,00	100,00
					Mean =	100,00	94,00	110,00	4,82d	112,00	6,11d	110,00
10	AQUAGRAIN	5000	kg/ha	A	102	90,00	100,00	100,00	90,00	100,00	90,00	110,00
					207	80,00	50,00	20,00	26,57	20,00	26,57	30,00
					303	80,00	80,00	100,00	90,00	100,00	90,00	100,00
					402	50,00	20,00	10,00	18,43	10,00	18,43	20,00
					507	80,00	70,00	30,00	33,21	30,00	33,21	40,00
					Mean =	76,00	64,00	52,00	61,49d	52,00	61,49d	60,00

d=Means are reported in de-transformed data units

Crop Code					LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale					BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name					Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name					Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety					Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated					PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date					14-1-2017	26-1-2017	26-1-2017	6-2-2017	6-2-2017	9-2-2017	9-2-2017
Rating Type					VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR	VIGOR
Rating Unit					NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
Sample Size, Unit					5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit					1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples					1	1	1	1	1	1	1
Crop Stage Majority					35	42	42	45	45	47	47
Crop Stage Scale					BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number					3	3	3	3	3	3	3
Assessed By					Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.					58	8	61	9	64	10	67
Days After First/Last Applic.					53 53	65 65	65 65	76 76	76 76	79 79	79 79
Trt-Eval Interval					53 DA-A	65 DA-A	65 DA-A	76 DA-A	76 DA-A	79 DA-A	79 DA-A
Plant-Eval Interval					53 DP-1	65 DP-1	65 DP-1	76 DP-1	76 DP-1	79 DP-1	79 DP-1
ARM Action Codes					TA[9] s05		TA[11] s05		TA[13] s05		TA[15] s05
Number of Decimals					2	2	2	2	2	2	2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Plot	10	11	12	13	14	15	16
1	UNTREATED CHECK				109	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					205	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					304	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					410	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					504	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					Mean =	100,00d	100,00	100,00d	100,00	100,00d	100,00	100,00d
2	AQUAGRAIN	250	kg/ha	A	110	0,00	110,00	0,00	100,00	90,00	100,00	90,00
					203	0,00	110,00	0,00	100,00	90,00	90,00	71,57
					306	0,00	110,00	0,00	100,00	90,00	110,00	0,00
					407	0,00	110,00	0,00	100,00	90,00	100,00	90,00
					505	0,00	110,00	0,00	100,00	90,00	110,00	0,00
					Mean =	0,00d	110,00	0,00d	100,00	100,00d	102,00	59,22d
3	VENUS BITOP v.2	250	kg/ha	A	104	0,00	110,00	0,00	100,00	90,00	110,00	0,00
					206	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					305	0,00	100,00	90,00	110,00	0,00	100,00	90,00
					403	90,00	100,00	90,00	100,00	90,00	100,00	90,00
					502	90,00	100,00	90,00	100,00	90,00	110,00	0,00
					Mean =	65,45d	102,00	90,45d	102,00	90,45d	104,00	65,45d
4	AQUAGRAIN	500	kg/ha	A	106	0,00	120,00	0,00	110,00	0,00	110,00	0,00
					210	0,00	120,00	0,00	110,00	0,00	110,00	0,00
					308	0,00	120,00	0,00	100,00	90,00	110,00	0,00
					404	0,00	120,00	0,00	120,00	0,00	110,00	0,00
					503	0,00	120,00	0,00	110,00	0,00	100,00	90,00
					Mean =	0,00d	120,00	0,00d	110,00	9,55d	108,00	9,55d
5	VENUS BITOP v.2	500	kg/ha	A	103	0,00	110,00	0,00	110,00	0,00	100,00	90,00
					209	0,00	110,00	0,00	120,00	0,00	110,00	0,00
					307	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					406	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					508	0,00	110,00	0,00	110,00	0,00	100,00	90,00
					Mean =	0,00d	110,00	0,00d	112,00	0,00d	106,00	34,55d
6	AQUAGRAIN	1000	kg/ha	A	107	0,00	130,00	0,00	120,00	0,00	120,00	0,00
					201	0,00	130,00	0,00	120,00	0,00	120,00	0,00
					310	0,00	130,00	0,00	120,00	0,00	110,00	0,00
					401	0,00	130,00	0,00	120,00	0,00	120,00	0,00
					509	0,00	130,00	0,00	120,00	0,00	110,00	0,00
					Mean =	0,00d	130,00	0,00d	120,00	0,00d	116,00	0,00d
7	VENUS BITOP v.2	1000	kg/ha	A	101	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					208	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					302	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					409	0,00	120,00	0,00	120,00	0,00	110,00	0,00
					506	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					Mean =	0,00d	112,00	0,00d	112,00	0,00d	110,00	0,00d
8	AQUAGRAIN	2500	kg/ha	A	105	0,00	140,00	0,00	130,00	0,00	130,00	0,00
					202	0,00	140,00	0,00	130,00	0,00	130,00	0,00
					301	0,00	140,00	0,00	130,00	0,00	130,00	0,00
					408	0,00	140,00	0,00	130,00	0,00	120,00	0,00
					501	0,00	140,00	0,00	130,00	0,00	130,00	0,00
					Mean =	0,00d	140,00	0,00d	130,00	0,00d	128,00	0,00d
9	VENUS BITOP v.2	2500	kg/ha	A	108	0,00	120,00	0,00	110,00	0,00	110,00	0,00
					204	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					309	0,00	130,00	0,00	130,00	0,00	120,00	0,00
					405	90,00	100,00	90,00	110,00	0,00	110,00	0,00
					510	90,00	110,00	0,00	120,00	0,00	110,00	0,00
					Mean =	34,55d	114,00	9,55d	116,00	0,00d	112,00	0,00d
10	AQUAGRAIN	5000	kg/ha	A	102	0,00	110,00	0,00	110,00	0,00	110,00	0,00
					207	33,21	30,00	33,21	80,00	63,43	80,00	63,43
					303	90,00	100,00	90,00	110,00	0,00	120,00	0,00
					402	26,57	20,00	26,57	40,00	39,23	50,00	45,00
					507	39,23	40,00	39,23	80,00	63,43	80,00	63,43
					Mean =	37,57d	60,00	37,57d	84,00	30,02d	88,00	31,88d

ARM Action Codes
TA[5] = Arcsine square root percent([5])
TA[7] = Arcsine square root percent([7])
TA[9] = Arcsine square root percent([9])
TA[11] = Arcsine square root percent([11])
TA[13] = Arcsine square root percent([13])
TA[15] = Arcsine square root percent([15])
Footnote 3: Plant vigor compared with the untreated = 100%

Crop Code					LACSA	LACSA	LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale					BVNH	BVNH	BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name					Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name					Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety					Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated					PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date					4-12-2016	14-12-2016	3-1-2017	3-1-2017	11-1-2017	14-1-2017	26-1-2017
Rating Type					WILTIN	WILTIN	WILTIN	WILTIN	WILTIN	WILTIN	WILTIN
Rating Unit					%	%	%	%	%	%	%
Sample Size, Unit					5 POT	5 POT	5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit					1 POT	1 POT	1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples					1	1	1	1	1	1	1
Crop Stage Majority					15	18	33	33	35	35	42
Crop Stage Scale					BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number					4	4	4	4	4	4	4
Assessed By					Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.					11	12	13	71	14	15	16
Days After First/Last Applic.					12 12	22 22	42 42	42 42	50 50	53 53	65 65
Trt-Eval Interval					12 DA-A	22 DA-A	42 DA-A	42 DA-A	50 DA-A	53 DA-A	65 DA-A
Plant-Eval Interval					12 DP-1	22 DP-1	42 DP-1	42 DP-1	50 DP-1	53 DP-1	65 DP-1
ARM Action Codes					s05	s05		TL[19] s05	s05	s05	
Number of Decimals					2	2	2	2	2	2	2
Trt No.	Treatment Name	Rate	Unit	Appl Code	Plot	17	18	19	20	21	22	23
1	UNTREATED CHECK				109	0,00	0,00	0,00	0,00	0,00	0,00	0,00
					205	0,00	0,00	0,00	0,00	0,00	0,00	0,00
					304	0,00	0,00	0,00	0,00	0,00	0,00	0,00
					410	0,00	0,00	0,00	0,00	0,00	0,00	0,00
					504	0,00	0,00	0,00	0,00	0,00	0,00	0,00
				Mean =		0,00	0,00	0,00	0,00d	0,00	0,00	0,00
2	AQUAGRAIN	250	kg/ha	A	110	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					203	0,00	0,00	5,00	0,78	5,00	0,00	25,00
					306	0,00	0,00	5,00	0,78	5,00	0,00	5,00
					407	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					505	0,00	0,00	5,00	0,78	5,00	5,00	10,00
				Mean =		0,00	0,00	5,00	5,00d	5,00	1,00	12,00
3	VENUS BITOP v.2	250	kg/ha	A	104	0,00	0,00	0,00	0,00	5,00	0,00	5,00
					206	0,00	0,00	0,00	0,00	0,00	0,00	5,00
					305	0,00	0,00	0,00	0,00	0,00	0,00	10,00
					403	0,00	0,00	5,00	0,78	5,00	5,00	5,00
					502	0,00	0,00	0,00	0,00	0,00	0,00	5,00
				Mean =		0,00	0,00	1,00	0,43d	2,00	1,00	6,00
4	AQUAGRAIN	500	kg/ha	A	106	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					210	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					308	0,00	0,00	5,00	0,78	5,00	5,00	10,00
					404	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					503	0,00	0,00	5,00	0,78	5,00	0,00	10,00
				Mean =		0,00	0,00	5,00	5,00d	5,00	1,00	10,00
5	VENUS BITOP v.2	500	kg/ha	A	103	0,00	0,00	0,00	0,00	5,00	0,00	10,00
					209	0,00	0,00	0,00	0,00	5,00	5,00	10,00
					307	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					406	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					508	0,00	0,00	5,00	0,78	5,00	0,00	10,00
				Mean =		0,00	0,00	3,00	1,93d	5,00	1,00	10,00
6	AQUAGRAIN	1000	kg/ha	A	107	0,00	0,00	5,00	0,78	10,00	5,00	10,00
					201	0,00	0,00	10,00	1,04	10,00	5,00	10,00
					310	0,00	0,00	5,00	0,78	10,00	5,00	25,00
					401	0,00	0,00	5,00	0,78	10,00	5,00	10,00
					509	0,00	0,00	25,00	1,41	25,00	10,00	25,00
				Mean =		0,00	0,00	10,00	8,08d	13,00	6,00	16,00
7	VENUS BITOP v.2	1000	kg/ha	A	101	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					208	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					302	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					409	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					506	0,00	0,00	5,00	0,78	5,00	0,00	10,00
				Mean =		0,00	0,00	5,00	5,00d	5,00	0,00	10,00
8	AQUAGRAIN	2500	kg/ha	A	105	0,00	0,00	5,00	0,78	5,00	5,00	5,00
					202	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					301	0,00	0,00	5,00	0,78	5,00	5,00	5,00
					408	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					501	0,00	0,00	5,00	0,78	5,00	5,00	5,00
				Mean =		0,00	0,00	5,00	5,00d	5,00	3,00	7,00
9	VENUS BITOP v.2	2500	kg/ha	A	108	0,00	0,00	5,00	0,78	5,00	0,00	5,00
					204	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					309	0,00	0,00	5,00	0,78	5,00	0,00	10,00
					405	0,00	0,00	5,00	0,78	5,00	5,00	5,00
					510	0,00	0,00	5,00	0,78	5,00	0,00	5,00
				Mean =		0,00	0,00	5,00	5,00d	5,00	1,00	7,00
10	AQUAGRAIN	5000	kg/ha	A	102	0,00	5,00	5,00	0,78	5,00	5,00	5,00
					207	0,00	75,00	5,00	0,78	5,00	5,00	5,00
					303	0,00	25,00	5,00	0,78	5,00	5,00	5,00
					402	0,00	0,00	5,00	0,78	5,00	5,00	5,00
					507	0,00	10,00	5,00	0,78	5,00	5,00	5,00
				Mean =		0,00	23,00	5,00	5,00d	5,00	5,00	5,00

d=Means are reported in de-transformed data units

Crop Code					LACSA	LACSA	LACSA	LACSA	LACSA
BBCH Scale					BVNH	BVNH	BVNH	BVNH	BVNH
Crop Scientific Name					Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa	Lactuca sativa
Crop Name					Lettuce	Lettuce	Lettuce	Lettuce	Lettuce
Crop Variety					Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)	Aldea (baby)
Part Rated					PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Date					26-1-2017	6-2-2017	6-2-2017	9-2-2017	9-2-2017
Rating Type					WILTIN	WILTIN	WILTIN	WILTIN	WILTIN
Rating Unit					%	%	%	%	%
Sample Size, Unit					5 POT	5 POT	5 POT	5 POT	5 POT
Reporting Basis, Unit					1 POT	1 POT	1 POT	1 POT	1 POT
Number of Subsamples					1	1	1	1	1
Crop Stage Majority					42	45	45	47	47
Crop Stage Scale					BBCH	BBCH	BBCH	BBCH	BBCH
Footnote Number					4	4	4	4	4
Assessed By					Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.	Gomez, P.
SE Group No.					74	17	77	18	80
Days After First/Last Applic.					65 65	76 76	76 76	79 79	79 79
Trt-Eval Interval					65 DA-A	76 DA-A	76 DA-A	79 DA-A	79 DA-A
Plant-Eval Interval					65 DP-1	76 DP-1	76 DP-1	79 DP-1	79 DP-1
ARM Action Codes					TL[23] s05		TL[25] s05		TL[27] s05
Number of Decimals					2	2	2	2	2
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Plot	24	25	26	27	28
1	UNTREATED CHECK				109	0,00	5,00	0,78	0,00	0,00
					205	0,00	0,00	0,00	0,00	0,00
					304	0,00	0,00	0,00	5,00	0,78
					410	0,00	0,00	0,00	0,00	0,00
					504	0,00	0,00	0,00	5,00	0,78
					Mean =	0,00d	1,00	0,43d	2,00	1,05d
2	AQUAGRAIN	250	kg/ha	A	110	1,04	10,00	1,04	10,00	1,04
					203	1,41	10,00	1,04	50,00	1,71
					306	0,78	25,00	1,41	25,00	1,41
					407	1,04	25,00	1,41	25,00	1,41
					505	1,04	10,00	1,04	10,00	1,04
					Mean =	10,57d	16,00	14,52d	24,00	20,09d
3	VENUS BITOP v.2	250	kg/ha	A	104	0,78	5,00	0,78	10,00	1,04
					206	0,78	5,00	0,78	10,00	1,04
					305	1,04	10,00	1,04	25,00	1,41
					403	0,78	5,00	0,78	10,00	1,04
					502	0,78	10,00	1,04	25,00	1,41
					Mean =	5,77d	7,00	6,65d	16,00	14,52d
4	AQUAGRAIN	500	kg/ha	A	106	1,04	10,00	1,04	5,00	0,78
					210	1,04	10,00	1,04	10,00	1,04
					308	1,04	10,00	1,04	10,00	1,04
					404	1,04	10,00	1,04	10,00	1,04
					503	1,04	10,00	1,04	10,00	1,04
					Mean =	10,00d	10,00	10,00d	9,00	8,74d
5	VENUS BITOP v.2	500	kg/ha	A	103	1,04	10,00	1,04	10,00	1,04
					209	1,04	10,00	1,04	5,00	0,78
					307	1,04	10,00	1,04	10,00	1,04
					406	1,04	10,00	1,04	25,00	1,41
					508	1,04	10,00	1,04	25,00	1,41
					Mean =	10,00d	10,00	10,00d	15,00	12,75d
6	AQUAGRAIN	1000	kg/ha	A	107	1,04	10,00	1,04	25,00	1,41
					201	1,04	10,00	1,04	10,00	1,04
					310	1,41	10,00	1,04	25,00	1,41
					401	1,04	10,00	1,04	10,00	1,04
					509	1,41	10,00	1,04	10,00	1,04
					Mean =	14,52d	10,00	10,00d	16,00	14,52d
7	VENUS BITOP v.2	1000	kg/ha	A	101	1,04	10,00	1,04	10,00	1,04
					208	1,04	10,00	1,04	10,00	1,04
					302	1,04	10,00	1,04	25,00	1,41
					409	1,04	10,00	1,04	25,00	1,41
					506	1,04	25,00	1,41	10,00	1,04
					Mean =	10,00d	13,00	12,06d	16,00	14,52d
8	AQUAGRAIN	2500	kg/ha	A	105	0,78	10,00	1,04	10,00	1,04
					202	1,04	10,00	1,04	10,00	1,04
					301	0,78	10,00	1,04	10,00	1,04
					408	1,04	10,00	1,04	10,00	1,04
					501	0,78	10,00	1,04	10,00	1,04
					Mean =	6,65d	10,00	10,00d	10,00	10,00d
9	VENUS BITOP v.2	2500	kg/ha	A	108	0,78	10,00	1,04	10,00	1,04
					204	1,04	10,00	1,04	10,00	1,04
					309	1,04	10,00	1,04	5,00	0,78
					405	0,78	10,00	1,04	5,00	0,78
					510	0,78	10,00	1,04	10,00	1,04
					Mean =	6,65d	10,00	10,00d	8,00	7,63d
10	AQUAGRAIN	5000	kg/ha	A	102	0,78	5,00	0,78	10,00	1,04
					207	0,78	5,00	0,78	5,00	0,78
					303	0,78	5,00	0,78	5,00	0,78
					402	0,78	5,00	0,78	5,00	0,78
					507	0,78	5,00	0,78	5,00	0,78
					Mean =	5,00d	5,00	5,00d	6,00	5,77d

ARM Action Codes
TL[19] = LOG([19]+ 1)
TL[23] = LOG([23]+ 1)
TL[25] = LOG([25]+ 1)
TL[27] = LOG([27]+ 1)
Footnote 4: % of plant with wilting symptoms

Crop Code	LACSA
BBCH Scale	BVNH
Crop Scientific Name	Lactuca sativa
Crop Name	Lettuce
Crop Variety	Aldea (baby)
Part Rated	PLANT C
Rating Date	9-2-2017
Rating Type	WEIFRE
Rating Unit	g
Sample Size, Unit	5 POT
Reporting Basis, Unit	1 POT
Number of Subsamples	1
Crop Stage Majority	47
Crop Stage Scale	BBCH
Footnote Number	2
Assessed By	Gomez, P.
SE Group No.	2
Days After First/Last Applic.	79 79
Trt-Eval Interval	79 DA-A
Plant-Eval Interval	79 DP-1
ARM Action Codes	s05 apoc
Number of Decimals	2

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Plot	2
1	UNTREATED CHECK				109	94,00
					205	102,60
					304	103,00
					410	94,90
					504	91,70
					Mean =	97,24
2	AQUAGRAIN		250 kg/ha	A	110	89,60
					203	91,10
					306	89,70
					407	102,90
					505	92,30
					Mean =	93,12
3	VENUS BITOP v.2		250 kg/ha	A	104	90,50
					206	95,00
					305	102,00
					403	89,90
					502	89,20
					Mean =	93,32
4	AQUAGRAIN		500 kg/ha	A	106	107,40
					210	110,40
					308	119,60
					404	102,50
					503	85,80
					Mean =	105,14
5	VENUS BITOP v.2		500 kg/ha	A	103	83,90
					209	87,50
					307	104,00
					406	91,80
					508	86,30
					Mean =	90,70
6	AQUAGRAIN		1000 kg/ha	A	107	121,70
					201	111,70
					310	103,70
					401	119,30
					509	115,60
					Mean =	114,40
7	VENUS BITOP v.2		1000 kg/ha	A	101	93,00
					208	86,60
					302	103,10
					409	103,80
					506	96,40
					Mean =	96,58
8	AQUAGRAIN		2500 kg/ha	A	105	104,76
					202	118,36
					301	117,40
					408	135,90
					501	119,70
					Mean =	119,22
9	VENUS BITOP v.2		2500 kg/ha	A	108	91,50
					204	91,40
					309	96,60
					405	86,90
					510	103,00
					Mean =	93,88
10	AQUAGRAIN		5000 kg/ha	A	102	129,40
					207	28,60
					303	109,90
					402	11,80
					507	74,90
					Mean =	70,92

Footnote 2: plant weight (g)

6.5. Appendix 5 - Weather data

SITE	TOWN
CI-22 Estación de Blanca	Blanca/Murcia

DATE	TEMPERATURE (°C)			HUM. (%)			RAIN
	MAX	MIN	AV.	MAX	MIN	AV.	(mm)
							TOT
22/11/2016	13,81	10,12	11,87	91,52	71,91	87,38	21,5
23/11/2016	13,37	7,08	10,54	91,63	62,25	82,12	11,1
24/11/2016	13,34	5,53	9,31	79,68	39,59	62,87	0
25/11/2016	14,21	3,35	9	86,48	41,51	67,9	0
26/11/2016	16,45	9,79	12,32	89,17	55,88	76,56	0,7
27/11/2016	15,09	8,64	11,06	90,4	72,55	85,34	12,7
28/11/2016	16,05	6,8	10,78	92,02	55,35	78,61	0,1
29/11/2016	15,71	9,01	12,29	87,98	61,82	76,97	0,5
30/11/2016	16,46	10,39	13,63	83,23	61,97	73,02	0,6
01/12/2016	13,3	8,39	11,75	89,57	59,48	77,89	1
02/12/2016	17,55	7,8	11,46	91,52	53,34	79,09	0,2
03/12/2016	15,19	6,12	10,34	91,93	69,12	85,1	0,2
04/12/2016	14,27	12,21	13,23	91,8	72,25	82,22	18,9
05/12/2016	15,91	12,19	13,81	92,7	71,24	86,33	18,6
06/12/2016	17,41	9,53	14,42	86,52	54,92	67,76	0,1
07/12/2016	17,48	7,02	11,68	89,58	47,47	76,11	0
08/12/2016	16,26	6,49	11,66	88	61,82	75,71	0
09/12/2016	15,31	11,39	13,04	86,77	71,26	80,33	0
10/12/2016	16,79	9,63	12,71	91,27	64,05	82,35	0
11/12/2016	17,77	8,52	12,17	91,55	51,1	76,53	0
12/12/2016	18,25	7,9	11,74	82,45	39,98	66,81	0
13/12/2016	15,52	4,16	9,18	91,4	58,37	78,83	0
14/12/2016	14,66	8,94	11,05	87,52	48,08	71,08	0
15/12/2016	10,5	8,09	9,36	87,23	76,63	81,88	0,7
16/12/2016	12,31	7,97	9,27	92,4	75,45	88,98	12,3
19/12/2016	11,64	8,48	9,37	87,88	65,52	78,92	9,8
20/12/2016	14,09	6,58	10,11	74,03	40,69	57,27	0
21/12/2016	14,86	7,66	10,57	63,93	38,93	54,42	0
22/12/2016	16,85	7,48	11,29	79,44	41,83	59,9	0
23/12/2016	16,96	7,62	10,9	79,06	39,53	62,86	0
24/12/2016	16,53	5,87	10,44	84	47,01	69,25	0
25/12/2016	16,47	5,16	9,63	89,13	48,22	74,28	0
26/12/2016	18,16	5,63	10,72	81,48	31,51	62,96	0
27/12/2016	15,52	2,65	8,5	89,1	49,48	76,17	0
28/12/2016	11,45	5,2	8,77	89,97	71,04	81,41	0
29/12/2016	16,6	6,41	11,17	87,25	49,16	72,71	0
30/12/2016	13,12	2,99	7,85	90,68	56,62	78,73	0

31/12/2016	13,33	5,13	9,4	82,08	48,12	65,52	0
01/01/2017	13,18	2,21	7,11	89,98	49,9	74,62	0
02/01/2017	12,55	1,69	6,38	90,93	55,39	77,28	0
03/01/2017	18,17	5,48	11,58	80,48	26,02	52,55	0
04/01/2017	18,3	12,93	14,65	62,97	40,63	53,33	0
05/01/2017	17,79	7,96	12,56	77,45	32,15	55,06	0
06/01/2017	14,35	3,85	8,53	90,37	59,9	77,72	0
07/01/2017	13,58	3,73	8,27	89,22	52,18	76,57	0
08/01/2017	13,29	1,96	6,77	91,08	31,43	71,47	0
09/01/2017	13,8	1,92	8,04	77,53	32,4	58,08	0
10/01/2017	14,88	3,96	10,76	72,23	33,69	49,28	0
11/01/2017	15,03	8,63	12,39	74,01	39,77	52,29	0
12/01/2017	18,52	3,74	10,98	88,97	43,08	67,1	0
13/01/2017	15,78	8,6	13,45	57,63	30,21	43,78	0
14/01/2017	11,64	4,43	7,89	50,68	28,36	38,04	0
15/01/2017	12,57	3,98	8,45	55,09	31,84	42,14	0
16/01/2017	15,66	8,07	11,63	49,27	31,08	40,98	0
17/01/2017	14,24	3,63	9,7	79,32	21,72	48,61	0
18/01/2017	4,56	-2,48	1,62	68,26	19,74	46,81	0,4
19/01/2017	5,78	2,95	4,4	87,15	57,98	74,2	64
20/01/2017	11,58	3,61	6,86	91,3	58,64	78,76	1,8
21/01/2017	9,52	6,04	7,82	79,05	58,45	67,65	0,7
22/01/2017	13,76	7,96	10,17	63,1	34,52	47,7	0
23/01/2017	13,07	6,03	9,15	69,57	42,09	56,01	0
24/01/2017	14,65	7,03	10,3	61,3	29,4	40,28	0
25/01/2017	16,29	7,58	11,29	49,6	23,48	38,22	0
26/01/2017	12,33	2,53	8,26	81,33	41,27	61,24	0
27/01/2017	11,98	8,16	10,05	85,5	61,36	74,75	2,1
28/01/2017	13,85	7,31	10,09	68,9	34,14	51,35	0
29/01/2017	14,63	5,52	9,93	76,84	42,51	61,72	0
30/01/2017	19,38	8,52	12,83	75,09	43,05	61,24	0
31/01/2017	17,68	5,55	11	89,72	30,04	66,34	0
01/02/2017	19,82	4,78	11,71	82,03	31,41	59,09	0
02/02/2017	14,4	9,6	11,63	83,21	55,35	68,92	0,4
03/02/2017	18,81	8,68	13,85	82,59	32,48	53,84	0
04/02/2017	18,42	10,92	14,8	61,1	39,82	49,01	0
05/02/2017	16,57	12,08	14,65	59,6	24,47	39,77	0
06/02/2017	18,57	13,25	14,63	61,3	31,3	41,6	0
07/02/2017	19,52	14,36	14,3	65,6	35,3	46,58	0
08/02/2017	17,36	12,56	14,3	59,6	28,6	48,63	0
09/02/2017	18,6	10,6	14,2	64,2	29,3	41,3	0

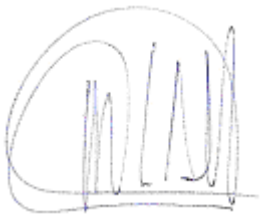
6.6. Appendix 6 - GEP statement

Métodos Servicios Agrícolas S.L..testing facility officially recognised as an organisation for efficacy testing in plant protection products in Spain (Spanish Consultancy with Official Acknowledgement nº EOR51/03) declares that:

The trial was performed in accordance with GEP. All the applications and assessments were done in accordance with the protocol provided by the Sponsor.

The guidelines used were:

- EPPO nº PP 1/135(4): *Phytotoxicity assessment.*
- EPPO nº PP 1/152(4): *Design and analysis of efficacy evaluation trials.*
- EPPO nº PP 1/181(4): *Conduct and reporting of efficacy evaluation trials including good experimental practice.*



Germán Abellán
Manager
Date: February 23rd, 2017

6.7. Appendix 7 - EOR and notification

MINISTERIO DE AGRICULTURA, ALIMENTACION Y MEDIO AMBIENTE

MINISTERIO DE AGRICULTURA, ALIMENTACION Y MEDIO AMBIENTE
Dirección General de Sanidad de la Producción Agraria
6 SEP 2013
SUBDIRECCIÓN GENERAL DE SANIDAD E HIGIENE VEGETAL Y FORESTAL
SALIDA Nº 003 / 47657

SECRETARÍA GENERAL DE AGRICULTURA Y ALIMENTACION

DIRECCIÓN GENERAL DE SANIDAD DE LA PRODUCCION AGRARIA

ASUNTO: Renovación Acreditación Nº EOR 51/03

De acuerdo con lo establecido en el artículo 19 de la Orden de 11 de diciembre de 1995 por el que se establecen las disposiciones relativas a las renovaciones de autorizaciones de ensayos y experiencias con productos fitosanitarios, esta Dirección General ha resuelto, previo informe favorable de la Comisión de Evaluación de Productos Fitosanitarios, renovar la acreditación Nº EOR 51/03 concedida a su empresa, para realizar ensayos oficialmente reconocidos.

La validez de esta acreditación queda ampliada hasta el 23 de junio del año 2018, salvo que sea revisada o revocada antes de la conclusión de dicho plazo si se determina que ha dejado de cumplirse alguno de los requisitos exigidos para su autorización o de las obligaciones establecidas por la Orden Ministerial de 11 de diciembre de 1995.

Madrid 21 de agosto de 2013

EL DIRECTOR GENERAL

Valentín Almansa de Lara

METODOS Y SERVICIOS AGRICOLAS, S.L.
ABARAN, Murcia
FA/

C/ Almagro, 33 1ª planta
28071 - MADRID
Tele: 91 347 82 93

NOTIFICACION DE ENSAYOS DE CAMPO CON PRODUCTOS FITOSANITARIOS A REALIZAR EN LA PROVINCIA DE MURCIA, COMUNIDAD AUTONOMA DE MURCIA.

HOJA A

1. DATOS DEL NOTIFICANTE

Nombre: Métodos Servicios Agrícolas, S.L.
Dirección: Plaza de la Zarzuela, 2 C.P.: 30.550
Localidad: Abarán (Murcia)
Teléfono: 609474624 Fax: 968770292

REGION DE MURCIA / Registro de la CARM / ABARAN
Entrada
Nº. 201600692443
27/12/2016 12:30:47

2. AUTORIZACIÓN QUE OSTENTA

( ) Para realizar un plan de ensayos I + D
(x) Genérica para realizar ensayos de I + D EOR (51/03)
(x) Para realizar ensayos oficiales ú oficialmente reconocidos EOR (51/03)
( ) Para realizar ensayos con BPLs

3. DATOS DEL DIRECTOR TECNICO

Nombre: Germán Abellán Martínez
Titulación: Ingeniero Agrónomo
Dirección: Plaza de la Zarzuela, 2 C.P.: 30.550
Localidad: Abarán (Murcia)
Teléfono: 609474624 Fax: 968770292

4. RELACION DE ENSAYOS A REALIZAR

Tipo de ensayos	Nº de productos	Nº de ensayos	Superficie Total
( ) de I + D			
(x) oficiales + R	1	1 ensayo con código: **16_bio.v40**	50 macetas
( ) con BPLs			

5.

Murcia, a 05 de Diciembre de 2016

EL SOLICITANTE, EL DIRECTOR TÉCNICO,

Germán Abellán Germán Abellán

5. ILMO. SR. DIRECTOR GENERAL DEL SERVICIO DE SANIDAD Y CERTIFICACIÓN VEGETAL DE MURCIA

Protección y Sanidad Vegetal
C/ Mayor. Estación Sericícola.
30.150 La Alberca (Murcia)

ANEXO V

NOTIFICACION DE ENSAYOS DE CAMPO CON PRODUCTOS FITOSANITARIOS

Hoja B, nº 1

A) Número del ensayo.....	16_bio.v40
B) Producto fitosanitario.....	AQUAGRAIN
C) Tipo de ensayo.....	I+D o OFICIALMENTE RECONOCIDO
D) Cultivo o aplicación.....	Lechuga
E) Objeto del ensayo.....	Eficacia y selectividad en lechuga
F) Dosis de producto a ensayar.....	0.5, 1.0, 2.0, 2.0, 10.0 g / maceta
G) Forma de aplicación.....	Mezcla con el sustrato
H) Tamaño parcela elemental.....	1 maceta
I) Nº parcelas del ensayo.....	50 (5 repeticiones x 10 tratamientos)
J) Localización del ensayo:	
- Provincia.....	Murcia
- Municipio.....	Blanca
- Finca o paraje.....	Moaire
- Agricultor.....	MSA
K) Fecha prevista de comienzo.....	Diciembre 2016
L) Fecha prevista de finalización.....	Enero 2017
M) Responsable del ensayo.....	Métodos Servicios Agrícolas, S.L.
- Nombre.....	Germán Abellán Martínez
- Titulación.....	Ingeniero Agrónomo
- Dirección.....	El Reguero s/n. – 30550 Abarán (Murcia)
- Teléfono.....	609474624
- Fax.....	968770292
N) Protocolo del ensayo.....	PP 1/181, PP 1/135, PP 1/152