

## LAMPIRAN

### Lampiran. 1 Perhitungan Dosis Pupuk

$$\begin{aligned}\text{Jarak tanam} &= 20 \times 20 \text{ cm} \\ &= 400 \text{ cm} \\ &= 0,04 \text{ m}^2\end{aligned}$$

$$\text{Luas lahan 1 hektar} = 10.000 \text{ m}^2$$

#### 1. Perhitungan jumlah populasi tanaman/hektar

$$\begin{aligned}\text{Jumlah tanaman/hektar} &= \frac{\text{Luas lahan}}{\text{Jarak tanam}} \times 0,8 \\ &= \frac{10.000 \text{ m}^2}{0,04 \text{ m}^2} \times 0,8 \\ &= 200.000 \text{ tanaman/hektar}\end{aligned}$$

#### 2. perhitungan dosis pupuk kandang ayam 10 ton/ha (10.000.000 gr )

$$\begin{aligned}\text{Kebutuhan pupuk kandang/polybag} &= \frac{\text{Dosis pupuk}}{\text{Jumlah tanaman}} \\ &= \frac{10.000.000}{200.000} \\ &= 50 \text{ gr/polybag}\end{aligned}$$

#### 3. Perhitugan dosis pupuk kandang ayam 20 ton/ha ( 20.000.000 gr )

$$\begin{aligned}\text{Kebutuhan pupuk kandang/polybag} &= \frac{\text{Dosis pupuk}}{\text{Jumlah tanaman}} \\ &= \frac{20.000.000}{200.000} \\ &= 100 \text{ gr/polybag}\end{aligned}$$

**Lampiran. 2 Lokasi lahan Penelitian**



<https://maps.app.goo.gl/8yW4RvrSwg3YGGPN9>



### Lampiran. 3 Dokumentasi Pelaksanaan Penelitian



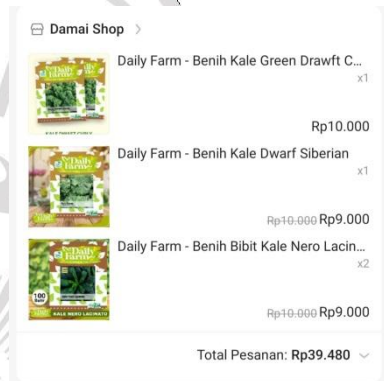
Gambar 1. Persiapan lahan



Gambar 2. Persiapan Media tanam



Gambar 3. Persiapan Media Semai



Gambar 4. Persiapan Benih Varietas



Gambar 5. Penanaman



Gambar 6. Penyiraman



Gambar 7. Penyiangan



Gambar 8. Pemupukan



Gambar 9. Pemanenan



Gambar 10. Penimbangan



Gambar 11. Pengeringan

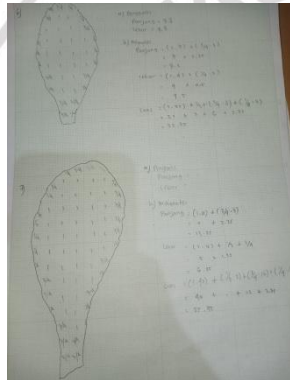
Lampiran. 4 Dokumentasi Variabel Pengamatan



Gambar 1. Tinggi Tanaman



Gambar 2. Jumlah Daun



Gambar 3. Luas Daun



Gambar 4. Bobot Segar Tanaman



Gambar 5. Bobot Kering Tanaman



Gambar 6. Bobot Segar Akar



Gambar 6. Bobot Kering Akar



Gambar 7. Tanaman kale kering



## Lampiran. 5 Analysis of Variance (Anova)

Tabel 5. 1 Hasil Anova Tinggi Tanaman Kale (Cm) 2 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.38	0.19	0.45	3.63	6.23	
<b>Perlakuan</b>	8	28.82	3.60	8.46	2.59	3.89	
<b>K</b>	2	24.92	12.46	29.28	3.63	6.23	**
<b>V</b>	2	2.45	1.23	2.88	3.63	6.23	tn
<b>KV</b>	4	1.44	0.36	0.85	3.01	4.77	tn
<b>Galat</b>	16	6.81	0.43				
<b>Total</b>	26	36.00					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 2 Hasil Anova Tinggi Tanaman Kale (Cm) 3 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	8.62	4.31	1.64	3.63	6.23	
<b>Perlakuan</b>	8	37.44	4.68	1.78	2.59	3.89	
<b>K</b>	2	33.72	16.86	6.41	3.63	6.23	**
<b>V</b>	2	0.90	0.45	0.17	3.63	6.23	tn
<b>KV</b>	4	2.82	0.70	0.27	3.01	4.77	tn
<b>Galat</b>	16	42.08	2.63				
<b>Total</b>	26	88.14					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 3 Hasil Anova Tinggi Tanaman Kale (Cm) 4 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	25.89	12.94	8.49	3.63	6.23	
<b>Perlakuan</b>	8	46.06	5.76	3.78	2.59	3.89	
<b>K</b>	2	43.50	21.75	14.27	3.63	6.23	**
<b>V</b>	2	0.14	0.07	0.05	3.63	6.23	tn
<b>KV</b>	4	2.41	0.60	0.40	3.01	4.77	tn
<b>Galat</b>	16	24.38	1.52				
<b>Total</b>	26	96.33					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 4 Hasil Anova Tinggi Tanaman Kale (Cm) 5 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	4.48	2.24	2.80	3.63	6.23	
<b>Perlakuan</b>	8	43.20	5.40	6.75	2.59	3.89	
<b>K</b>	2	34.13	17.07	21.33	3.63	6.23	**
<b>V</b>	2	1.91	0.96	1.20	3.63	6.23	tn
<b>KV</b>	4	7.15	1.79	2.23	3.01	4.77	tn
<b>Galat</b>	16	12.80	0.80				
<b>Total</b>	26	60.48					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 5 Hasil Anova Jumlah daun Tanaman Kale (Helai) 2 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	1.62	0.81	0.46	3.63	6.23	
<b>Perlakuan</b>	8	4.15	0.52	1.12	2.59	3.89	
<b>K</b>	2	2.50	1.25	2.71	3.63	6.23	tn
<b>V</b>	2	0.70	0.35	0.76	6.94	6.23	tn
<b>KV</b>	4	0.94	0.24	0.51	3.01	4.77	tn
<b>Galat</b>	16	7.40	0.46				
<b>Total</b>	26	13.17					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 6 Hasil Anova Jumlah daun Tanaman Kale (Helai) 3 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	3.41	1.70	5.39	3.63	6.23	
<b>Perlakuan</b>	8	13.89	1.74	5.49	2.59	3.89	
<b>K</b>	2	11.75	5.87	18.59	3.63	6.23	**
<b>V</b>	2	1.12	0.56	1.78	3.63	6.23	tn
<b>KV</b>	4	1.02	0.25	0.80	3.01	4.77	tn
<b>Galat</b>	16	5.06	0.32				
<b>Total</b>	26	22.35					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 7 Hasil Anova Jumlah daun Tanaman Kale (Helai) 4 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.13	0.07	0.41	3.63	6.23	
<b>Perlakuan</b>	8	8.10	1.01	6.31	2.59	3.89	
<b>K</b>	2	4.38	2.19	13.64	3.63	6.23	**
<b>V</b>	2	2.60	1.30	8.10	3.63	6.23	tn
<b>KV</b>	4	1.12	0.28	1.74	3.01	4.77	tn
<b>Galat</b>	16	2.57	0.16				
<b>Total</b>	26	10.80					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 8 Hasil Anova Jumlah daun Tanaman Kale (Helai) 5 Mst

SK	DB	JK	KT	F Hit	F Tab		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.11	0.06	0.04	3.63	6.23	
<b>Perlakuan</b>	8	5.45	0.68	0.53	2.59	3.89	
<b>K</b>	2	3.76	1.88	1.47	3.63	6.23	tn
<b>V</b>	2	0.29	0.14	0.11	3.63	6.23	tn
<b>KV</b>	4	1.40	0.35	0.27	3.01	4.77	tn
<b>Galat</b>	16	20.46	1.28				
<b>Total</b>	26	26.02					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 9 Hasil Anova Luas daun Tanaman Kale (Helai) 2 Mst

SK	DB	JK	KT	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.05	0.02	0.03	3.63	6.23	
<b>Perlakuan</b>	8	129.44	16.18	17.11	2.59	3.89	
<b>K</b>	2	1.39	0.69	0.73	3.63	6.23	tn
<b>V</b>	2	121.66	60.83	64.33	3.63	6.23	**
<b>KV</b>	4	6.39	1.60	1.69	3.01	4.77	tn
<b>Galat</b>	16	15.13	0.95				
<b>Total</b>	26	144.62					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 10 Hasil Anova Luas daun Tanaman Kale (Helai) 3 Mst

SK	DB	JK	KK	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	5.14	2.57	2.66	3.63	6.23	
<b>Perlakuan</b>	8	97.35	12.17	12.58	2.59	3.89	
<b>K</b>	2	18.12	9.06	9.37	3.63	6.23	**
<b>V</b>	2	41.03	20.52	21.21	3.63	6.23	**
<b>KV</b>	4	38.20	9.55	9.88	3.01	4.77	**
<b>Galat</b>	16	15.47	0.97				
<b>Total</b>	26	117.96					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 11 Hasil Anova Luas daun Tanaman Kale (Helai) 4 Mst

SK	DB	JK	KK	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	4.42	2.21	0.46	3.63	6.23	
<b>Perlakuan</b>	8	55.80	6.98	1.44	2.59	3.89	
<b>K</b>	2	24.10	12.05	2.49	3.63	6.23	tn
<b>V</b>	2	12.98	6.49	1.34	3.63	6.23	tn
<b>KV</b>	4	18.72	4.68	0.97	3.01	4.77	tn
<b>Galat</b>	16	77.49	4.84				
<b>Total</b>	26	137.71					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 12 Hasil Anova Luas daun Tanaman Kale (Helai) 5 Mst

SK	DB	JK	KK	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.79	0.40	0.28	3.63	6.23	
<b>Perlakuan</b>	8	32.31	4.04	2.80	2.59	3.89	
<b>K</b>	2	22.23	11.11	7.71	3.63	6.23	**
<b>V</b>	2	5.12	2.56	1.77	3.63	6.23	tn
<b>KV</b>	4	4.97	1.24	0.86	3.01	4.77	tn
<b>Galat</b>	16	23.07	1.44				
<b>Total</b>	26	56.18					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 13 Hasil Anova Bobot Basah Tanaman Kale (Gram)

SK	DB	JK	KT	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	2.09	1.044353	1.55	3.63	6.23	
<b>Perlakuan</b>	8	29.44	3.67947	5.48	2.59	3.89	
<b>K</b>	2	14.95	7.47508	11.12	3.63	6.23	**
<b>V</b>	2	4.74	2.372199	3.53	3.63	6.23	tn
<b>KV</b>	4	9.74	2.435299	3.62	3.01	4.77	*
<b>Galat</b>	16.00	10.75	0.671925				
<b>Total</b>	26.00	42.28					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 14 Hasil Anova Bobot Kering Tanaman Kale (Gram)

SK	DB	JK	KK	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.00	0.00	1.00	3.63	6.23	
<b>Perlakuan</b>	8	2.60	0.33	562.00	2.59	3.89	
<b>K</b>	2	1.33	0.66	1147.00	3.63	6.23	**
<b>V</b>	2	0.91	0.46	787.00	3.63	6.23	**
<b>KV</b>	4	4.00	1.00	1728.00	3.01	4.77	**
<b>Galat</b>	16.00	0.01	0.00				
<b>Total</b>	26.00	2.61					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata

Tabel 5. 15 Hasil Anova Bobot Basah Akar Tanaman Kale (Gram)

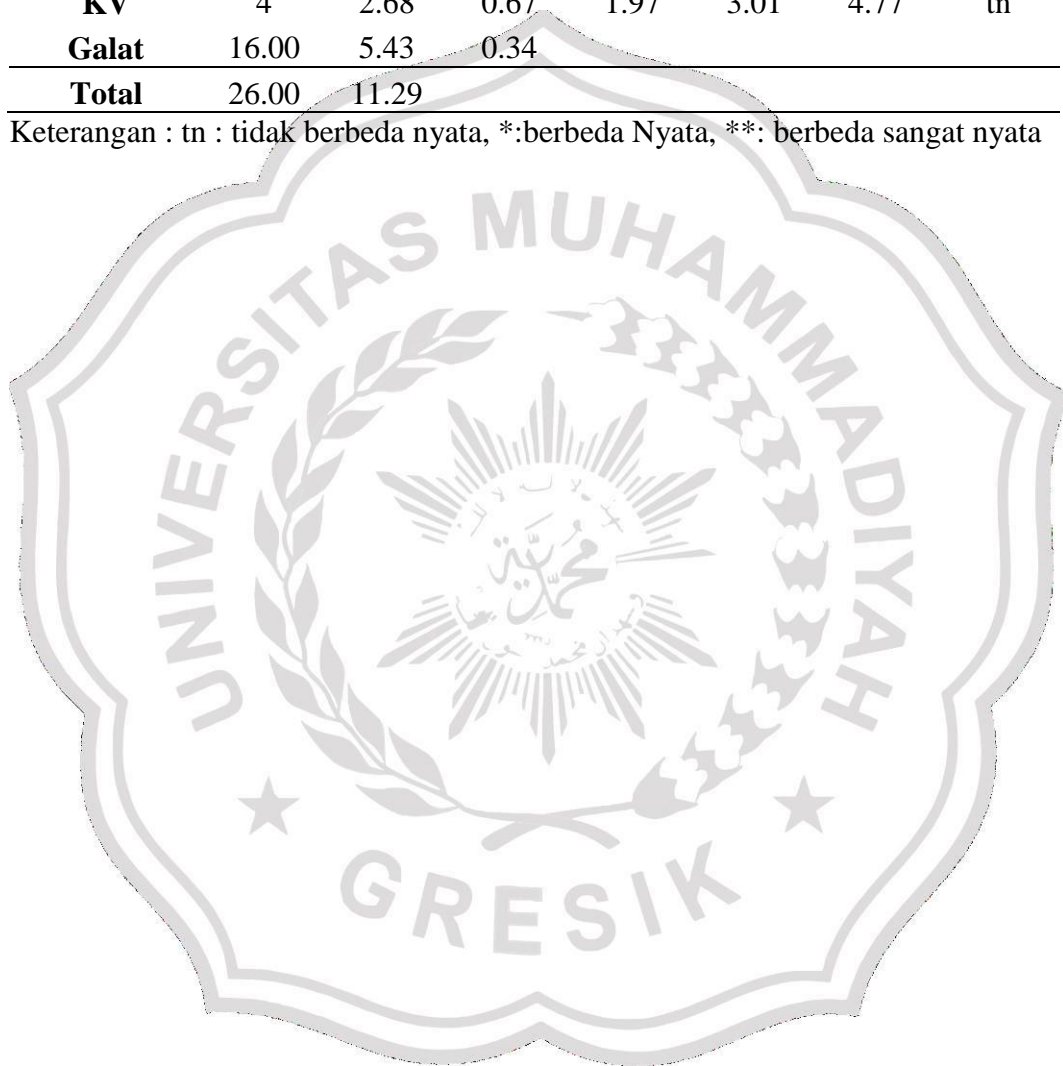
SK	DB	JK	KT	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	2.21	1.10	4.63	3.63	6.23	
<b>Perlakuan</b>	8	20.58	2.57	10.79	2.59	3.89	
<b>K</b>	2	16.75	8.37	35.12	3.63	6.23	**
<b>V</b>	2	1.21	0.61	2.54	3.63	6.23	tn
<b>KV</b>	4	2.62	0.65	2.75	3.01	4.77	tn
<b>Galat</b>	16.00	3.82	0.24				
<b>Total</b>	26.00	26.60					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata


Tabel 5. 16 Hasil Anova Bobot Kering Akar Tanaman Kale (Gram)


SK	DB	JK	KT	F HIT	F TAB		KET
					0.05	0.01	
<b>Kelompok</b>	2	0.10	0.05	0.15	3.63	6.23	
<b>Perlakuan</b>	8	5.76	0.72	2.12	2.59	3.89	
<b>K</b>	2	0.41	0.20	0.60	3.63	6.23	tn
<b>V</b>	2	2.68	1.34	3.94	3.63	6.23	*
<b>KV</b>	4	2.68	0.67	1.97	3.01	4.77	tn
<b>Galat</b>	16.00	5.43	0.34				
<b>Total</b>	26.00	11.29					

Keterangan : tn : tidak berbeda nyata, \*:berbeda Nyata, \*\*: berbeda sangat nyata



## Lampiran. 6 Hasil Uji Laboratorium Pupuk Kandang Ayam


**PRODI AGROTEKNOLOGI**  
 FAKULTAS PERTANIAN  
 UNIVERSITAS MUHAMMADIYAH GRESIK



**BERITA ACARA HASIL  
UJI TANAH**

**1. HASIL UJI TANAH SAWAH**

Jenis Tanah	Jenis Uji Unsur	Hasil Uji	Rekomendasi
K1 Dosis 10 t/ha Pupuk kandang	<b>Unsur N</b>	Rendah	Berpasir 300 kg/ha
		Rendah	Berliat 250 kg/ha
		Sedang	Berpasir 250 kg/ha
		Rendah	Berpasir 300 kg/ha
K2 Dosis 20 t/ha Kontrol	<b>Unsur P</b>	Tinggi	50 kg sp-36/ha
		Sedang	75 kg sp-36/ha
		Tinggi	50 kg sp-36/ha
		Rendah	100 kg sp-36/ha
K1 Dosis 10 t/ha Pupuk kandang	<b>Unsur K</b>	Rendah	Kcl 100 kg/ha / 50 kg/ha + 5 ton jerami
		Rendah	Kcl 100 kg/ha / 50 kg/ha + 5 ton jerami
		Rendah	Kcl 100 kg/ha / 50 kg/ha + 5 ton jerami
		Rendah	Kcl 100 kg/ha / 50 kg/ha + 5 ton jerami
K2 Dosis 20 t/ha Kontrol	<b>pH</b>	Agam masam (5-6)	
		Netral (6-7)	
		Agam masam (5-6)	
		Agam masam (5-6)	

**2. HASIL UJI TANAH KERING**

Jenis Tanah	Jenis Uji Unsur	Hasil Uji	Rekomendasi
K1 Dosis 10 t/ha Pupuk kandang	<b>Unsur P</b>	Sedang	- Jagung 175 kg sp 36/ha - Kedelai 150 kg sp 36/ha - Padi gogo 150 kg sp 36/ha
		Sedang	- Jagung 175 kg sp 36/ha - Kedelai 150 kg sp 36/ha - Padi gogo 150 kg sp 36/ha
K2 Dosis 20 t/ha Kontrol	<b>Unsur K</b>	Sedang	- Jagung 175 kg sp 36/ha - Kedelai 150 kg sp 36/ha - Padi gogo 150 kg sp 36/ha
		Rendah	- Jagung 200 kg sp 36/ha - Kedelai 200 kg sp 36/ha - Padi gogo 200 kg sp 36/ha

**REDITASI BAN-PT**  
 PT/Ak-PJJ/S/IV/2020  
 11 April 2025

*The Power of Islamic Entrepreneurship*  
 Jl. Sumatera 101 Gresik Kota Baru (GKB) Gresik, 61121 Telp: (031) 3951414, Fax: (031) 3952585 Website: <http://www.umg.ac.id>, Email:

K1 Dosis 10 t/ha Pupuk kandang	<b>Unsur K</b>	Tinggi	- Jagung 50 kcl kg/ha - Kedelai 50 kcl kg/ha - Padi gogo 50 kcl kg/ha
		Tinggi	- Jagung 50 kcl kg/ha - Kedelai 50 kcl kg/ha - Padi gogo 50 kcl kg/ha
		Tinggi	- Jagung 50 kcl kg/ha - Kedelai 50 kcl kg/ha - Padi gogo 50 kcl kg/ha
		Sedang	- Jagung 75 kcl kg/ha - Kedelai 75 kcl kg/ha - Padi gogo 75 kcl kg/ha
K2 Dosis 20 t/ha Kontrol	<b>pH</b>	Agam masam (5-6)	
		Netral (6-7)	
		Agam masam (5-6)	
		Agam masam (5-6)	
K1 Dosis 10 t/ha Pupuk kandang	<b>C. Organik</b>	Rendah (2 ton/ha)	
		Rendah (2 ton/ha)	
		Rendah (2 ton/ha)	
		Rendah (2 ton/ha)	
K2 Dosis 20 t/ha Kontrol	<b>pH</b>	Agam masam (5-6)	
		Netral (6-7)	
		Agam masam (5-6)	
		Agam masam (5-6)	

## Lampiran. 7 Surat Sertifikat Varietas Tanaman Kale



# Certification Documents

N° 90108/202406192007

Ecocert SAS hereby confirms that:

**WALTERS SEED COMPANY LLC.**

65 Veterans Drive, HOLLAND MICHIGAN 49423-UNITED STATES OF AMERICA

Has been audited and certified to the USDA organic regulations, 7 CFR Part 205

**National Organic Program**



For operation categories:  
**HANDLING/PROCESSING**

For the following product groups:  
**OTHER NON-PERENNIAL CROPS  
PROCESSES**

Document issued on 19 June 2024

Operation Identification Number:7889010800

The general certificates of NOP clients are available on the **Organic Integrity Database**

You may verify the certification of this operation online at:

<https://organic.ams.usda.gov/integrity/CP/OPP?cid=24&nopid=7889010800>



**Ecocert SAS**

BP 47 Lieudit Lamothe Ouest  
32600 L'Isle Jourdain France  
(+33) 5 62 07 51 09 - [www.ecocert.com](http://www.ecocert.com)  
Capital 300 000 € - SIREN 897 812 137 – RCS AUCH

Contact office: **Ecocert USA**

PO Box 158 Plainfield, Indiana 46168 USA  
+1 888 337 8246 - [info.ecocertusa@ecocert.com](mailto:info.ecocertusa@ecocert.com)



**Anniversary date: 1st February**

when the certified operation must submit its annual update - this is not an expiration date

Effective date / date of 1st certification: 5 February 2021



# Addenda to the certificate

N° 90108/202406192007

## WALTERS SEED COMPANY LLC.

USDA organic regulations, 7 CFR Part 205 – National Organic Program

### Products certified :

PRODUCT	LABELLING CATEGORY
> Dill, Mammoth	Organic
> Echinacea, Purple Coneflower	Organic
> Eggplant, Black Beauty	Organic
> Eggplant, Snowy	Organic
> Fava Beans	Organic
> Fennel	Organic
> Green Leaf Lettuce, Black Seeded Simpson	Organic
> Herb Garden Starter Kit	Organic
> Herb Seed Collection	Organic
> Hot Pepper- Red Habanero	Organic
> Kale Sprout Seed, Light Green	Organic
> Kale, Blue Curled Scotch	Organic
> Kale, Lacinato	Organic
> Kale, Microgreens	Organic
> Kale, Red Russian	Organic
> Kale, Red Ursa	Organic
> Kale, Scarlet	Organic
> Kale, Vates	Organic
> Kale, White Russian	Organic
> Kohlrabi, Purple Vienna	Organic
> Lavender	Organic
> Lavender, Flower	Organic
> Lavender, Vera	Organic
> Lemon Balm	Organic
> Lettuce Batavian, Arianna	Organic
> Lettuce Leaf, Lolla Rossa	Organic
> Lettuce Red Leaf, Salad Bowl	Organic

F61 (NOP)v01 en

Page 6/12

Once certified, a production or handling operation's organic certification continues in effect until surrendered, suspended or revoked.



SCAN ME

Access this up-to-date official certificate