

A21-016-890FE

Efficacy of ozone applied alone and in mix, against Botrytis spp. on Blackberry. Morocco 2021

Trial ID: A21-016-890FE Location: Marocco Trial Year: 2021
Protocol ID: 890A21FE7 Investigator (Creator): Matteo Freddi
Project ID: Study Director: Antonio Russo
Official Trial ID: A21-016-890FE Sponsor Contact: Federico Ponti
Trial Origin: C contracted trial

TREATMENT LIST

Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Other Rate	Other Rate Unit	Appl Code	Comment	
									1	2
1	CHK	Untreated Check								
2	FUNG	Ozone			SN	3ppm pr		ABCDE	500-1500 L/ha	Spray application with water
3	FUNG	Serenade ASO	14,1g/L		SC	8l/ha		ABCDE	500-1500 L/ha	Spray application

OBJECTIVES

Objectives:

- Do the Ozone used alone have efficacy comparable to the standard Serenade ASO Sector?
- Are all treatments safe for the crop?

SITE DESCRIPTION

Trial Location

City: Agadir **Country:** MAR Morocco
Climate Zone: EPOMED EPPO Mediterranean
 MAR 35,9223411 - 27,6672694
 -0,99697578 - -13,1722970

Crop Description

Crop 1: C FRAAN Fragaria x ananassa **Garden strawberry** **BBCH Scale:** BSTR
Entry Date: Dec-14-2020 **Stage Scale:** BBCH
Variety: Nabila **Planting Density:** 33333 P/ha
Rows per Plot: 1
Row Spacing: 1 m
Spacing within Row: 0,3 m
Harvest Date: Mar-26-2021

Pest Description

Pest 1 Type: D **Code:** BOTRSP Botrytis sp.
Common Name: Botrytis sp.

Stage Scale: BBCH

Site and Design

Treated Plot Width: 1 m **Total Plot Width:** 1 m **Site Type:** GREENH greenhouse
Treated Plot Length: 6 m **Total Plot Length:** 6 m **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 6,0 m² **Treatments:** 3 **Tillage Type:** CONTIL conventional-till
Replications: 7 **Study Design:** RACOBL Randomized Complete Block (RCB)
% Slope: 0
Untreated Arrangement: INCLUDED single control randomized in each block
Block Arrangement: BSSPUP all blocks side by side, plots lying upon each other

Application Description

	A	B	C	D	E
Application Date	Feb-10-2021	Feb-19-2021	Mar-12-2021	Mar-20-2021	Mar-25-2021
Appl. Start Time	9:00	10:00	10:00	9:00	9:00
Appl. Stop Time	10:00	11:00	11:00	10:00	10:00
Interval to Prev. Appl.		9 DAYS	21 DAYS	8 DAYS	5 DAYS
Application Method	BROADC	BROADC	BROADC	BROADC	BROADC
Application Timing	ACCRST	FIINSP	FIINSP	FIINSP	FIINSP
Application Placement	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR
Appl. Entry Date	Oct-22-2021	Oct-22-2021	Oct-22-2021	Oct-22-2021	Oct-22-2021
Air Temperature Start, Stop	24; - C	23; - C	26; - C	25; - C	26; - C
% Relative Humidity Start, Stop	73; 72	45; 48	41; 46	41; 45	48; 50
Wet Leaves (Y/N)	N; no	N; no	N; no	N; no	N; no
Soil Moisture	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
Soil Surface Condition	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM
% Cloud Cover	10	0	0	0	10
Weather Source	WSLOCAL	WSLOCAL	WSLOCAL	WSLOCAL	WSLOCAL

Protocol Application Directions:

Time and frequency of application

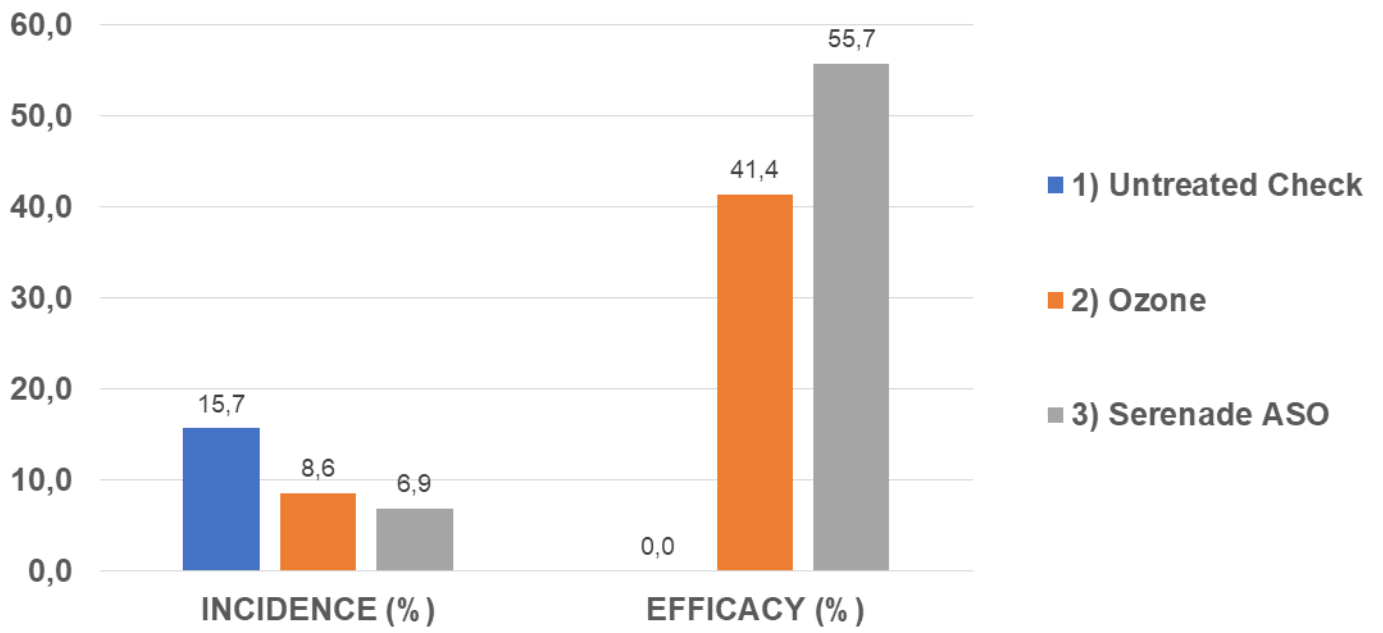
- A: BBCH 61
- B: BBCH 65
- C: 14 days before harvest
- D: 6 days before harvest
- E: 1 day before harvest
- Minimum spray interval: 5 days.

Doses and volumes

- Use water volume variable following crop growth: 500-1500 L/ha

RESULTS

Incidence on fruits – 8 days after last application



COMMENTS

English version: At the end of the experimental program for the control of *Botrytis sp.* on strawberry, during which 5 applications were carried out based on susceptibility moments of the crop, the untreated check provided an incidence of fruits equal to 15.7% (7.9 attacked fruits on 50 fruits) with a consequent serious damage to the yield. . All the products tested in field showed significant results if compared to the untreated check. The best result is showed by the standard Serenade ASO with 6.9% of incidence (3.4 attacked fruits) corresponding to 55.7% of disease control, comparable to Ozone with an incidence value equal to 8.6% (4.3 attacked fruits) and 41.4% of efficacy.

Versione italiana: Alla termine del programma sperimentale per il controllo di *Botrytis sp.* su fragola, durante il quale sono state eseguite 5 applicazioni basate sui periodi di suscettibilità della coltura, il testimone non trattato ha mostrato un'incidenza sui frutti pari a 15.7% (7.9 frutti attaccati su 50) con un conseguente danno alla produzione. Tutti i prodotti testati in campo hanno mostrato risultati significativi rispetto al non trattato. Il miglior risultato è stato mostrato dallo standard Serenade ASO con 6.9% di incidenza (3.5 frutti attaccati) corrispondente al 55.7% di controllo della malattia, comparabile a Ozono con una incidenza pari a 8.6% (4.3 frutti attaccati) e il 41.4% di efficacia.

CONCLUSION

Conclusions:

English version: Within the test aimed at controlling *Botrytis sp.* on strawberry with the use of organic products, Ozone alone showed efficacy in reducing the disease incidence on fruits compared to the untreated check. Ozone applications showed comparable results to that of the standard Serenade ASO. No symptoms of phytotoxicity were observed.

Versione italiana: All'interno della prova volta al controllo di *Botrytis sp.* su fragola con utilizzo di prodotti biologici, l'Ozono da solo ha mostrato efficacia nel ridurre l'incidenza della malattia sui frutti rispetto al non trattato. Le applicazioni di Ozono hanno mostrato risultati comparabili a quelli dello standard Serenade ASO. Non si sono osservati sintomi di fitotossicità.

CONTACTS

Renzo Bucchi

Scientific Responsible

Agri 2000 Net Srl

www.agri2000net.com

bucchi@agri2000.it