

A21-022-890FE

Efficacy of ozone applied alone and in mix, against Botrytis sp. and Erysiphe sp. on cannabis. USA 2021

Trial ID: A21-022-890FE Location: CAC oregon city oregon Trial Year: 2021
Protocol ID: 890A21FE1 Investigator (Creator): Gianmarco D'Annunzio
Project ID: Study Director: Antonio Russo
Official Trial ID: A21-022-890FE Sponsor Contact: Federico Ponti
Conducted Under GEP: Yes Trial Origin: C contracted trial

TREATMENT LIST

Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Description	Other Rate	Other Rate Unit	Appl Code	Comment 1	Comment 2
1	CHK	Untreated Check									
2	FUNG	Ozone			SN			3ppm pr	ABCDE	300-1500 L/ha	Spray application with water
3	FUNG	Soyacide	39%		OS	soybean oil		1% v/v	ABCDE	300-1500 L/ha	Spray application
4	FUNG	Ozone			SN			3ppm pr	ABCDE	300-1500 L/ha	
	FUNG	Soyacide	39%		OS	soybean oil		1% v/v	ABCDE	300-1500 L/ha	Apply Biological standard after Ozone on dry leaves

OBJECTIVES

Objectives:

- Do the Ozone used alone have efficacy comparable to the standard Soyacide?
- Does the addition of Ozone to the standard Soyacide increase the efficacy of Soyacide used alone?
- Are all treatments safe for the crop?

SITE DESCRIPTION

Trial Location			
City:	Oregon City	Country:	USA United States
State/Prov.:	Oregon OR		
Postal Code:	97045	Climate Zone:	USMAR US Maritime

Crop Description			
Crop 1:	CNISA Cannabis sativa	Marijuana	BBCH Scale: BDIC
Entry Date:	Jul-13-2021	Stage Scale:	BBCH
Variety:	WB		
Attributes:	CBD Hemp Flower		
Planting Date:	Apr-15-2021	Planting Method:	TRAHAN transplanted - hand
		Plant Shape:	VERTICAL

Pest Description			
Pest 1 Type:	D Code: SPHRMA Podosphaera macularis	Entry Date:	Jul-13-2021
Common Name:	Powdery mildew of hop	Stage Scale:	BBCH
		Artificial Population:	N no

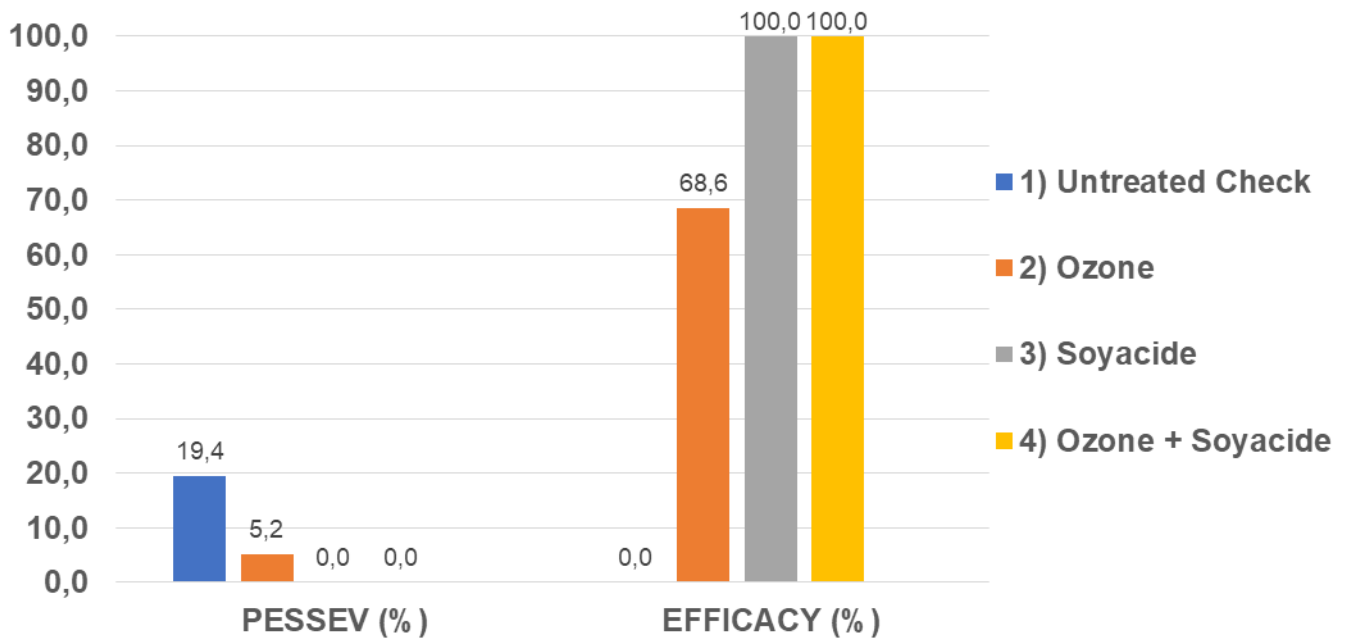
Site and Design			
Treated Plot Width:	1 m	Site Type:	GREENH greenhouse
Treated Plot Length:	1 m	Experimental Unit:	1 PLOT plot
Treated Plot Area:	1,0 m2	Tillage Type:	NOTILL no-till
Replications:	5	Study Design:	LATSQU Latin Square (LS)
% Slope:	0		
Untreated Arrangement:	INCLUDED single control randomized in each block		

Soil Description	
Description Name:	Potting mix #4 - Sunshine
Soil Name:	Soiless potting mix media
Analyzed By:	
<<http://www.sungro.com/retail-product/sunshine-mix-4/>>	

Application Description					
	A	B	C	D	E
Application Date	May-17-2021	May-24-2021	Jun-1-2021	Jun-7-2021	Jun-14-2021
Appl. Start Time	1:00	10:00	10:40	10:40	11:40
Appl. Stop Time	1:30	10:30	11:20	11:20	12:20
Interval to Prev. Appl.		7 DAYS	8 DAYS	6 DAYS	7 DAYS
Application Method	BROADC	BROADC	BROADC	BROADC	BROADC
Application Timing	26	26	26	26	26
Application Placement	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR
Appl. Entry Date	Jul-20-2021	Jul-20-2021	Jul-20-2021	Jul-20-2021	Jul-20-2021
Air Temperature Start, Stop	78; 78 F	78; 78 F	79; 79 F	79; 79 F	79; 79 F
% Relative Humidity Start, Stop	70; -	70; -	70; -	70; -	70; -
Wind Velocity+Dir. Start	0 MPH; -	0 MPH; -	0 MPH; -	0 MPH; -	0 MPH; -
Wet Leaves (Y/N)	N; no	N; no	N; no	N; no	N; no
Soil Temperature	70 F	70 F	70 F	70 F	70 F
Soil Moisture	WET	WET	WET	WET	WET
% Cloud Cover	0	0	10	0	0

RESULTS

On leaves – 7 days after last application



COMMENTS

English version: At the end of the experimental program for the control of *Erysiphe necator* on cannabis, during which 5 applications were carried out based on susceptibility moments of the crop, the untreated check showed a severity on leaves equal to 19.4% diseased leaves/plot, with a consequent serious damage to the crop development. All the products tested in field showed significant results if compared to the untreated check. The best result is showed by the reference product Soyacide applied alone and by Ozone applied in strategy with Soyacide that completely controlled the disease with 0% of damaged leaves. Also the Ozone applied alone allowed a control of the disease, albeit lower, showing a pest severity of 5.2% with a control equal to 68.6%.

Versione italiana: Al termine della strategia sperimentale per il controllo di oidio su *Cannabis sativa*, durante la quale sono state realizzate 5 applicazioni, basate sui momenti di suscettibilità della coltura, il testimone non trattato ha mostrato una severità sulle foglie pari al 19.4% di foglie ammalate/plot, con conseguente grave danno alla produzione. Tutti i prodotti applicati in campo hanno fornito risultati significativi rispetto al testimone. Il miglior risultato è stato fornito dal prodotto di riferimento Soyacide applicato da solo e dall'Ozono applicato in strategia con lo standard Soyacide, che hanno controllato completamente la malattia con 0% di foglie danneggiate. Anche l'ozono applicato da solo ha permesso un controllo della malattia, seppur inferiore, mostrando una percentuale di foglie colpite pari al 5.2% con una efficacia del 68.6%.

CONCLUSION

Conclusions:

English version: Within the test aimed at controlling *Erysiphe necator* on cannabis with the use of organic products, Ozone alone showed efficacy on leaves. Ozone in strategy with Soyacide showed a complete control of the disease as well as Soyacide applied alone. No symptoms of phytotoxicity were observed.

Versione italiana: All'interno della prova volta al controllo dell'oidio su *Cannabis sativa* con utilizzo di prodotti biologici, l'Ozono da solo ha mostrato efficacia sulle foglie. L'ozono in strategia con Soyacide ha mostrato un controllo completo della malattia come pure Soyacide applicato da solo. Non si sono osservati sintomi di fitotossicità.

CONTACTS

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