

# A20-316-890FE

## Efficacy of ozone applied alone and in mix, against Botrytis sp. and Sclerotinia sp. on baby leaf vegetables. Italy 2020-2021

Trial ID: A20-316-890FE Location: Italy Trial Year: 2020  
Protocol ID: 890A20FE7 Investigator (Creator): Antonio Russo  
Project ID: Study Director: Renzo Bucchi - Agri 2000 Net Srl  
Official Trial ID: A20-316-890FE Sponsor Contact: Giulio Senese - MET Srl  
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		ABCD	300-1500 L/ha	
3	FUNG	Serenade ASO	14,1	g/L	SC		8L/ha		ABCD	300-1500 L/ha	
4	FUNG	Ozone			SN		3PPM PR		ABCD	300-1500 L/ha	
	FUNG	Serenade ASO	14,1	g/L	SC		8L/ha		ABCD	300-1500 L/ha	Apply Serenade ASO after Ozone on dry leaves
5	FUNG	Ozone			SN		3PPM PR		ABCD	300-1500 L/ha	
	FUNG	Sunflower oil			EC	Rate 1-5 %V/V	1% V/V		ABCD	300-1500 L/ha	Emulsified Sunflower oil

## OBJECTIVES

- Does the Ozone used alone have efficacy if compared to the standard Serenade ASO?
- Does the addition of Ozone to the standard Serenade ASO increase the efficacy of Serenade ASO used alone?
- Does the addition of Ozone emulsified Sunflower oil increase the efficacy of Ozone used alone?
- Are all treatments safe for the crop?

# SITE DESCRIPTION

Trial Location	
<b>City:</b> Eboli	<b>Country:</b> ITA Italy
<b>State/Prov.:</b> Salerno SA	
<b>Postal Code:</b> 84025	<b>Climate Zone:</b> EPOMED EPO Mediterranean

Crop Description	
<b>Crop 1:</b> C LACSA Lactuca sativa	Lettuce
<b>Entry Date:</b> Sep-26-2020	<b>Stage Scale:</b> BBCH
<b>Variety:</b> Copacabana	
<b>Planting Date:</b> Apr-20-2020	<b>Planting Rate:</b> 7 g/m2
	<b>Planting Method:</b> SEEDED seeded
<b>Emergence Date:</b> Apr-30-2020	

Pest Description	
<b>Pest 1 Type:</b> D	<b>Code:</b> BOTRSP Botrytis sp.
<b>Common Name:</b> Botrytis sp.	<b>Entry Date:</b> Sep-26-2020
	<b>Stage Scale:</b> BBCH
	<b>Artificial Population:</b> N

Site and Design		
<b>Treated Plot Width:</b> 1,5 m	<b>Total Plot Width:</b> 1,5 m	<b>Site Type:</b> GREENH greenhouse
<b>Treated Plot Length:</b> 6 m	<b>Total Plot Length:</b> 6 m	<b>Experimental Unit:</b> 1 PLOT plot
<b>Treated Plot Area:</b> 9 m2	<b>Treatments:</b> 5	<b>Tillage Type:</b> CONTIL conventional-till
<b>Replications:</b> 4		<b>Study Design:</b> RACOBL Randomized Complete Block (RCB)
<b>% Slope:</b> 0	<b>Plots arranged as in field?:</b> X	
<b>Untreated Arrangement:</b> INCLUDED	single control randomized in each block	
<b>Block Arrangement:</b> BUPPSS	all blocks lying upon each other, plots side by side	
<b>Distance between Blocks:</b> 0 m		

Field Prep./Maintenance:
No maintenance products were applied during the trial

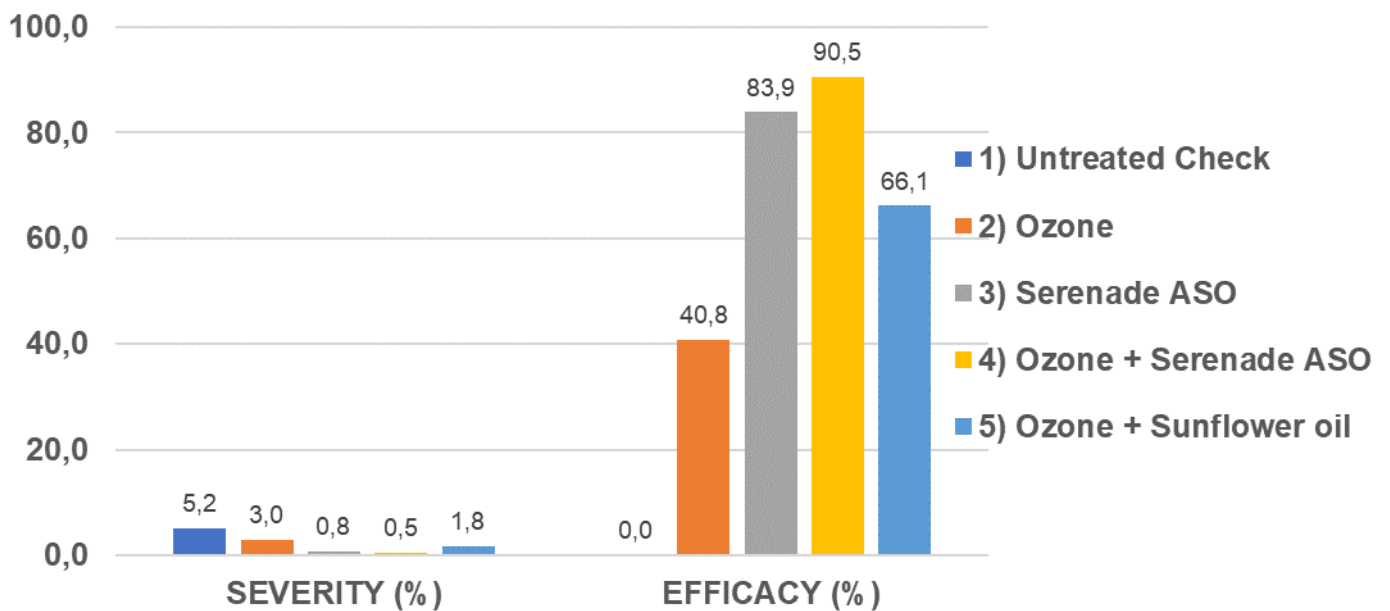
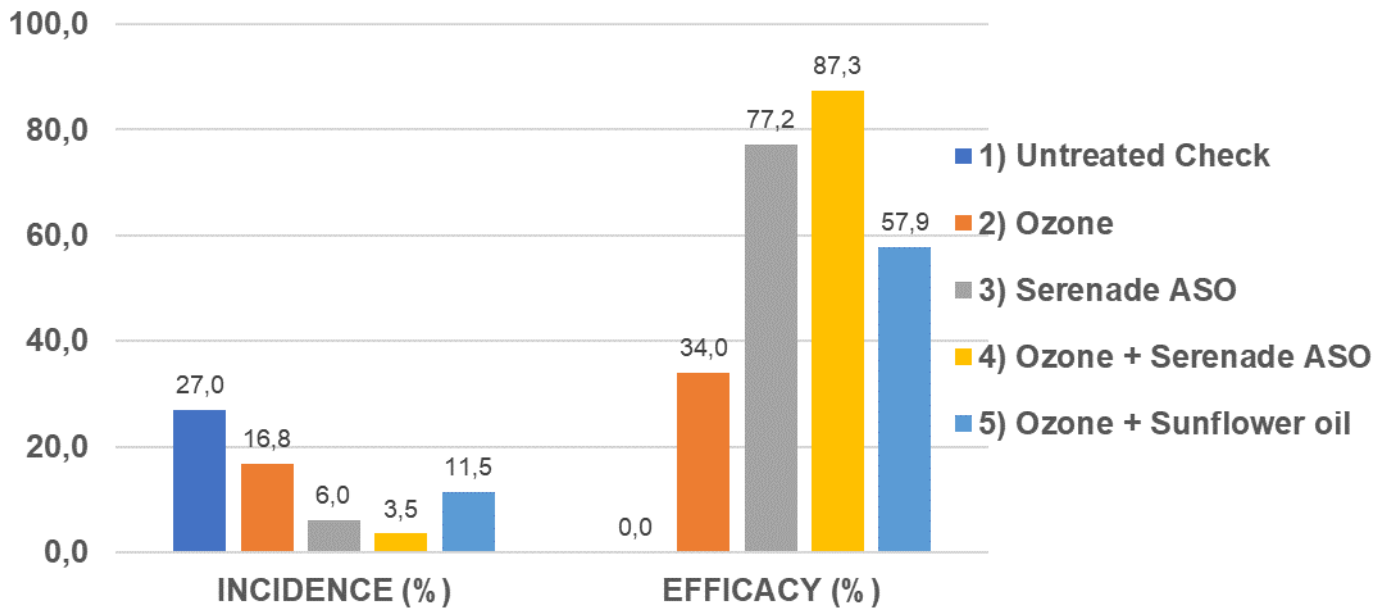
Soil Description		
<b>% Sand:</b> 28,8	<b>% OM:</b> 1,7	<b>Texture:</b> CL clay loam
<b>% Silt:</b> 40	<b>pH:</b> 7,6	
<b>% Clay:</b> 31,6	<b>CEC:</b> 15	<b>Fert. Level:</b> G good
<b>Soil Drainage:</b> G good		

Application Description				
	A	B	C	D
<b>Application Date</b>	May-5-2020	May-11-2020	May-15-2020	May-20-2020

Application Directions	
<b>Time and frequency of application</b>	Application A: pre-infection or at 2-3 leaves Spray interval 5 days.
<b>Doses and volumes</b>	Use water volume variable following crop growth: 300-1500 L/ha

# RESULTS

5 Days after the last application



## COMMENTS

**English version:** At the end of the experimental program for the control of *Botrytis sp* on Lettuce baby leaf, during which 4 applications were carried out based on susceptibility moments of the crop, the untreated check showed an incidence equal to 27.0%, 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 Ozone applied in strategy with the standard Serenade ASO, which reduced the *Botrytis sp.* damage to 3.5%, ensuring a more qualitative production to the crop. Also, the Ozone applied alone and the ozonated sunflower oil allowed a control of the disease, albeit lower, showing an incidence of 16.8% and 6.0% respectively.

**Versione italiana:** Al termine della strategia sperimentale per il controllo di botrite su lattughino, durante la quale sono state realizzate 4 applicazioni, basate su i momenti di suscettibilità della coltura, il testimone non trattato ha mostrato un'incidenza sui frutti pari al 27.0%, 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 dall'Ozono applicato in strategia con lo standard Serenade ASO, che ha ridotto l'attacco da botrite al 3.5%, garantendo una produzione più qualitativa alla coltura. Anche l'ozono applicato da solo e l'olio di girasole ozonato hanno permesso un controllo della malattia, seppur inferiore, mostrando un'incidenza rispettivamente del 16.8% e 6.0%.

## CONCLUSION

**English version:** Within the test aimed at controlling *Botrytis sp.* on lettuce baby leaf with the use of organic products, Ozone alone showed efficacy on crop. Ozone in strategy with Serenade ASO contributes to an improvement of the efficacy of the latter and the use of ozonated sunflower oil showed a higher disease control than ozonated water. No symptoms of phytotoxicity were observed.

**Versione italiana:** All'interno della prova volta al controllo della botrite su lattughino con utilizzo di prodotti biologici, l'Ozono da solo ha mostrato efficacia su frutto. L'ozono in strategia con il Serenade ASO contribuisce ad un miglioramento dell'efficacia di quest'ultimo e l'utilizzo di olio di girasole ozonato ha un maggior controllo della malattia rispetto all'acqua ozonata. Non si sono osservati sintomi di fitotossicità.

## CONTACT

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