

Integrated use of ozonized water for a sustainable vine protection

Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

OZOPLUSGRAPE

Tematica

Difesa da malattie e infestazioni

Information

Time frame

2019 - 2021

Durata

24 months

Partners (no.)

5

Regione

Veneto

Comparto

Viticultura

Localizzazione

ITH34 - Treviso

ITH35 - Venezia

ITH36 - Padova

Costo totale

€219.000,00

Fonte di finanziamento principale

Programma di sviluppo rurale

Programma di sviluppo rurale

2014IT06RDRP014: Italy - Rural Development

Programme (Regional) - Veneto

Parole chiave

Pest /disease control

Farming equipment and machinery

Food quality / processing and nutrition

Sito web

<https://www.prosecco.wine/it/news/progetto-ozo-plus-grape>

Project status

completed



Objectives

In the cultivation of vines we want to reduce the use of pesticides, in compliance with the directive 2009/128 / EC. The project aims to replace synthetic products with the use of ozonated water, to exploit the broad spectrum ozone germicidal activity without leaving residues. The ability to evaporate quickly is perhaps the reason for the short duration. The protective effect of ozone and chitosan (admitted in organic viticulture) will be studied for a direct action against fungi by means of equipment (prototype), to also constitute a physical barrier against their recolonization. The results will be evaluated against two vine pathogens, namely *B. cinerea* and *P. viticola*.

Activities

Before the field activities, the vineyards identified by LP, of which all the PPs will participate, will be checked to evaluate the parcels insured for the treatments. In time, any corrective strategies to be applied. The DAFNAE shares the results and news during the meetings with the PPs. After the first year, following the first results of the vineyard and cellar activity in the other, it will be possible to start with the dissemination activities. Towards the end of the second year there will be a specific event to disseminate the results open to the public.

Partenariato

Role	Azienda	Address	Telephone	E-mail
Leader	Viticoltori Veneto Orientale Aziende Agricole Srl	Via Arzeri, 35 31040 Salgareda TV Italy	0422 804129	claudio.sartor@vivoagricola.it
Partner	Università degli Studi di Padova - Dipartimento di Agronomia Animali Alimenti Risorse Naturali e Ambiente (DAFNAE)	Viale dell'Università 16 35020 Legnaro PD Italy	049 8272664	ricerca.dafnae@unipd.it
Partner	Consorzio di tutela della denominazione di Origine Prosecco	Via Filodrammatici, 3 31100 Treviso TV Italy	0422 1572383	ricerca@consorzioprosecco.it
Partner	Consorzio Volontario per la Tutela dei VINI DOC delle VENEZIE	Via Pallone, 20 37121 Verona VR Italy	342 8939588	info@dellevenezie.it
Partner	CREA-VIT - Centro di ricerca per la viticoltura ed enologia di Conegliano	Via XXVIII Aprile, 26 31015 Conegliano TV Italy	0438 456711	ve@crea.gov.it

Pratiche abstract

Description

The expected result of the present project is to achieve a sustainable way to protect grapevine against pathogenic fungi such as *Botrytis cinerea* and *Plasmopara viticola*. This result could be obtained combining treatment of ozonized water with that of chitosan, using a spraying machine specifically modified for this purpose. Ozone is believed to have broad-spectrum germicidal properties and at the same time evaporates rapidly without leaving residues. This latter aspect can be responsible for the short-term protective effect of this kind of treatment. The subsequent application of chitosan, which, in addition to its ability to induce resistance in plants, shows also filming properties able to retard physically the recolonization of fungi, is proposed here as a way to extend the protective effect of ozonized water.

The final result will be a reduction of the total use of pesticides in viticulture.

The companies already involved in the cooperative and in the consortia partner of this project will be the first to take advantage of this innovation, but the possibility to rent the spraying machine and the relative low cost of chitosan will make this technology easily accessible to all the other companies operating in the same sector.

Description

The results of the first year (weekly application of ozonized water and chitosan performed in June and July 2019 on two different vineyards, one of Glera and one of Pinot gris) showed that ozonized water alone, at least in the conditions used in this experiment, is not able to protect leaves and clusters from *Plasmopara viticola*. This is probably due to the high instability and consequent short-term activity of ozone. In fact, the analysis of microorganism population on the surface of

grapes after the treatments revealed only a small reduction of bacteria (when compared with control samples), and this effect was lost 24h after the ozone application. In addition, no effects on yeasts or moulds were noticed.

The combination of ozonized water with chitosan showed a protection ranging from 50 to 80% depending on the attack severity. This effect was comparable to that obtained with chitosan alone, confirming on one hand the ability of this natural polymer to partially protect the plants against the pathogens, and on the other hand the inefficacy of ozonized water.

The level of protection obtained with chitosan alone was considered not high enough to be a solution economically acceptable by producers, for this reason further experiments will be necessary to improve at least the application of the ozonized water.

Link utili

Titolo/Descrizione	Url	Tipologia
Sito web del progetto	https://www.prosecco.wine/it/news/progetto-ozoplus-grape	Sito web
I Risultati del progetto	https://www.prosecco.wine/it/news/progetto-ozoplus-grape-0	Materiali utili
Pagina web sul sito del partner	https://dellevenezie.it/ozoplusgrape-un-progetto-per-vini-piu-sani/	Link ad altri siti che ospitano informazioni del progetto
Articolo su Treviso to Day	https://www.trevisotoday.it/green/valdobbiadene-acqua-ozonizzata-fitofarmaci-20...	Materiali utili
Article - Enolo - Ozoned water in the vineyard in the name of sustainability!	https://www.enolo.it/acqua-ozonizzata-in-vigna-innome- della-sostenibilita/	Materiali utili
Article - Prosecco - OZOPLUSGRAPE, a project for healthier grapes	https://dellevenezie.it/ozoplusgrape-un-progetto-pervini- piu-sani/	Materiali utili