

# Life NaturalAgro



## The Essential from Nature

Two target specific formulations for Downy Mildew (DM) and Grapevine Trunk Diseases (GTD), by using **Carbonated hydroxyapatite** and **natural oil blends** with very low or no Copper.

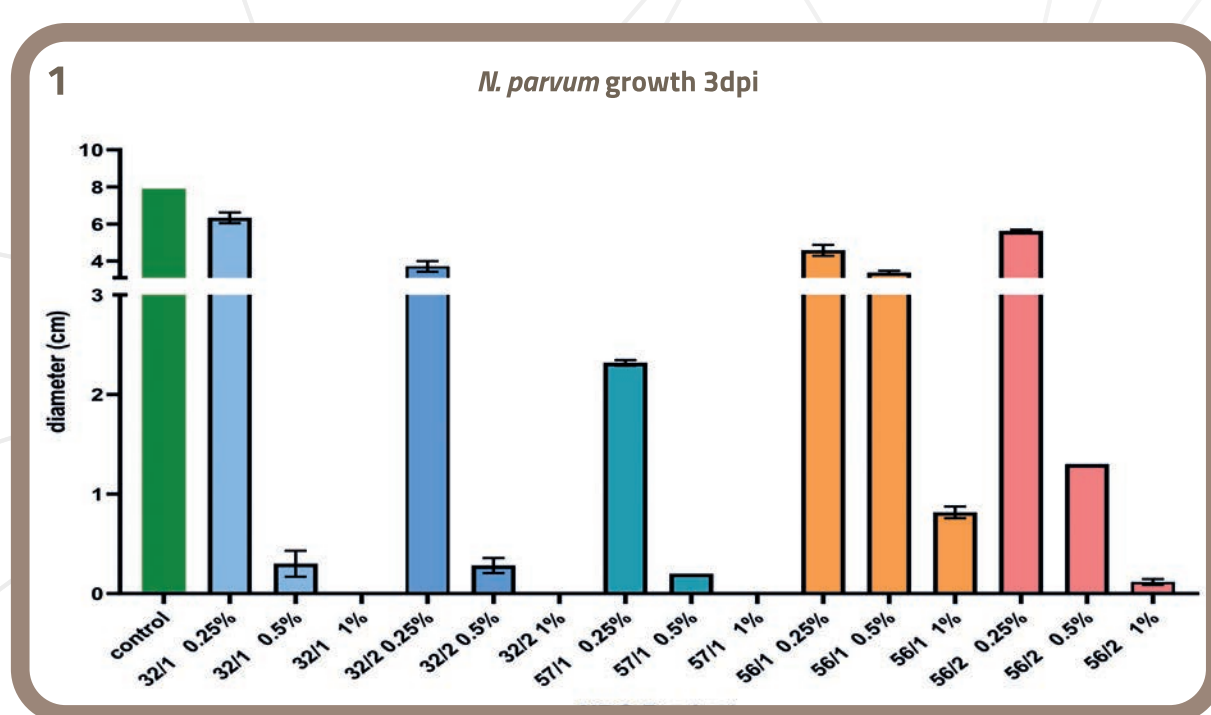


One of the main objectives is to develop and evaluate two target specific formulations (for DM and GTD) by using carbonated hydroxyapatite and natural oil blends with very low or no Copper. The target is to achieve Cu reduced formulations with concentrations

decreased from current levels of 3.5% to 0% (completely copper free). Consequently, the partners will also demonstrate the efficacy of these PPPs at a wider scale by conducting a multi-locational trial across living labs and vineyards in Italy, France, and Portugal.

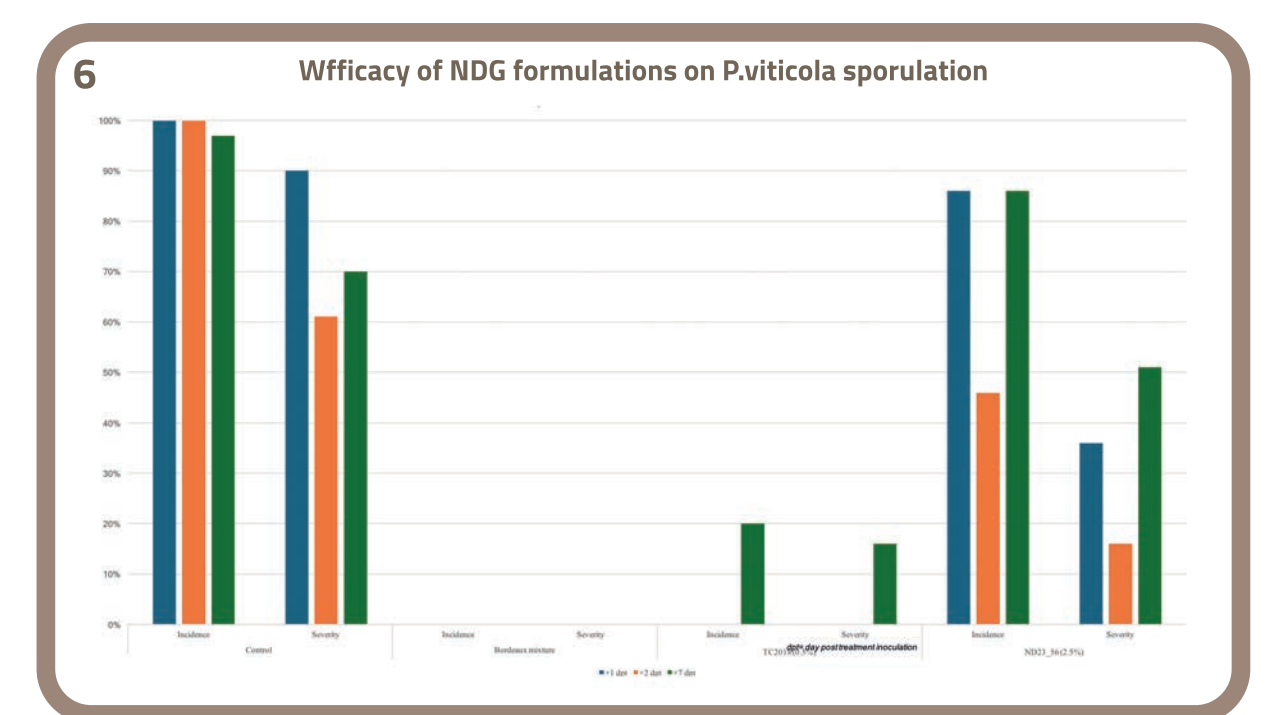
### NDG –URCA LIFE PROJECT

In vitro test of ND23\_32/1, ND23\_32/2, ND23\_56/1, ND23\_56/2, and ND23\_57/1

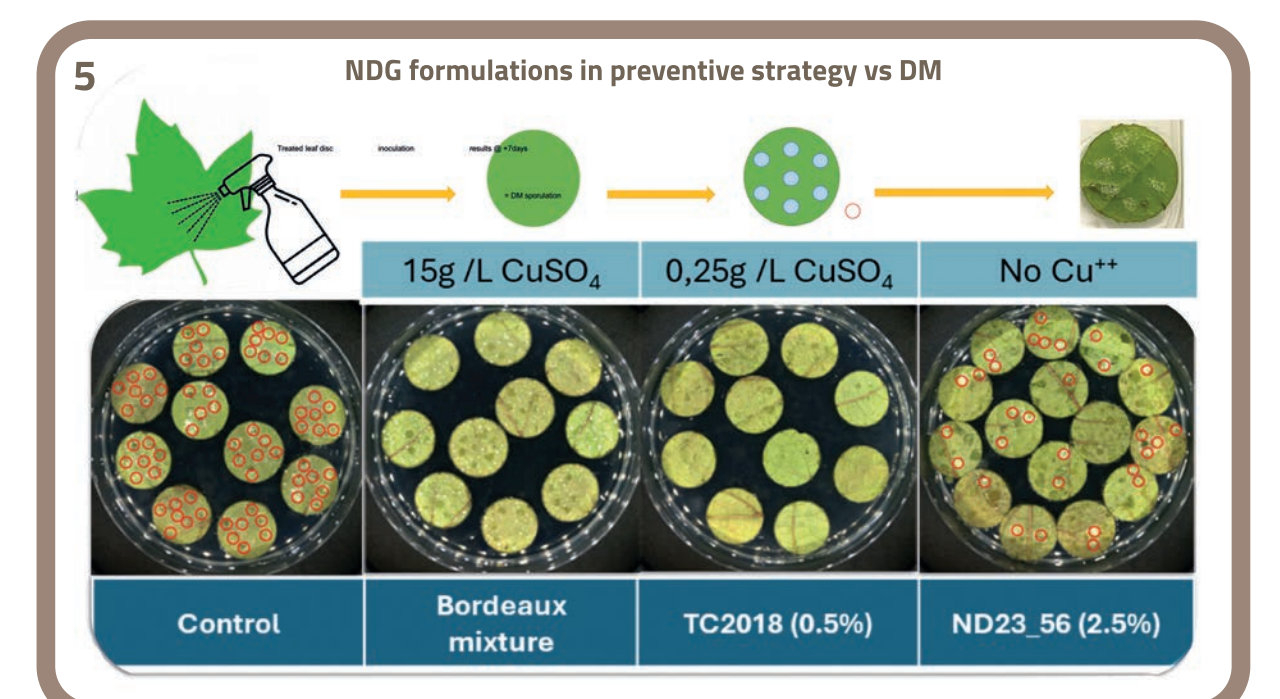
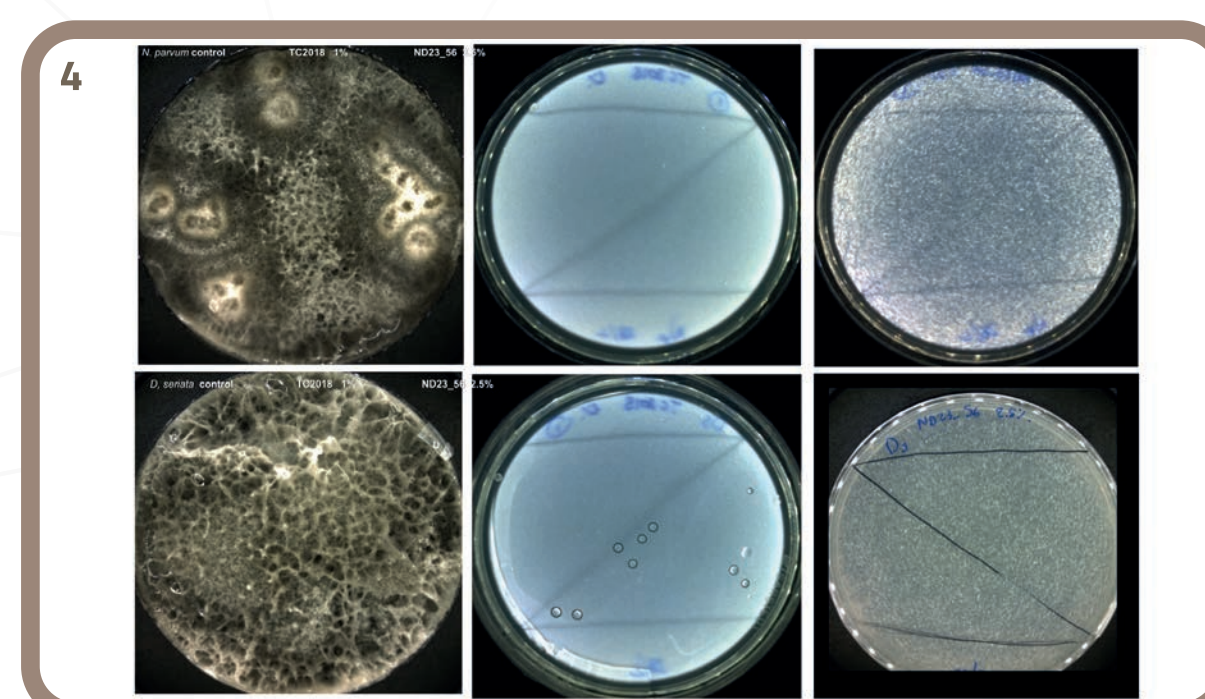
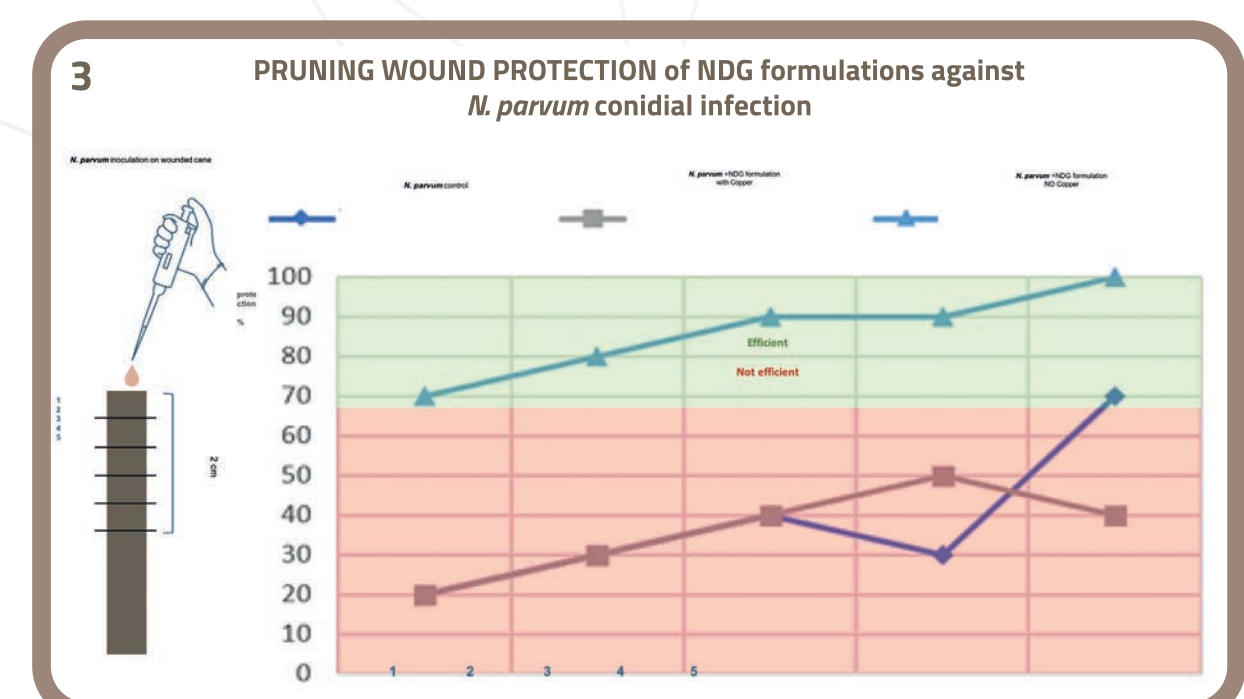


The two NaturalAgro formulations, **TC2018** and **ND23\_56**, are the outcomes of the collaboration between NDG and URCA within the scope of the LIFE project. Starting from 2020, various formulations utilizing carbonate hydroxyapatite were subjected to in vitro testing at varying concentrations<sup>(1)</sup> against the primary pathogens causing grapevine trunk diseases (GTD). Through these tests, TC2018 and ND23\_56 emerged as the most effective formulations

within the NaturalAgro project<sup>(2)</sup>. Effectiveness in protecting wounds has been found<sup>(3)</sup>. Therefore, the two formulations will be tested, related to the preliminary in vitro tests to confirm this ability<sup>(4)</sup>. Our challenge is also to use these new formulations against Downy Mildew (DM). The results show the ability of TC2018 and, in a lesser extent, of ND23\_56 in blocking DM sporulation, both with lower and no copper content<sup>(5-6)</sup>.



Fungal pathogen	With Copper 3.5%		No Copper		
	ND23_32/1	ND23_32/2	TC2018	ND23_56/1	ND23_56/2
<i>Neofusicoccum parvum</i>	2.92	2.67	2.47	3.24	3.01
<i>Eutypa lata</i>	3.22	2.62	2.43	2.91	2.73
<i>Phaeoaniella chlamydospora</i>	3.28	3.33	2.23	2.77	2.34
<i>Fomitiporia mediterranea</i>	5.06	5.62	3.04	2.84	3.15



Six Italian wine companies have been identified and selected by Vitepiù and NDG to participate in the LIFE Natural Agro project and test innovative products in their own vineyards to assess their effectiveness against downy mildew. The companies are located in the Central-Northern regions of Italy: Tuscany, Veneto, Lombardy, and Friuli Venezia Giulia. The main objective was to select

companies compatible with the project, given its five-year duration, to directly test and dose innovative products in the vineyard using company resources and following a holistic approach in experimentation. Additionally, the companies have been equipped with state-of-the-art weather stations to collect climatic data and take photos of the vineyards designated for treatment with LIFE

products. Cutting-edge sensors for monitoring vegetative growth and a leaf simulator for measuring microclimate, and runoff following rainfall will collect data, which will be made available to the company through the vite.net software developed by Horta Srl for better vineyard management.



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