



# ***NDG NATURAL DEVELOPMENT GROUP***

*INTER LIFE PT 2025*

*20th MARCH 2025*

*Vila Real*



# PROJECT INFO



## DURATION

START: 01/07/2023  
END: 30/06/2028



## BUDGET INFO

Total amount: 5.486.811 €  
% EC Co-funding: 60



## LOCATION

- ITALY
- FRANCE
- PORTUGAL



## SCOPE

- To lead European viticulture towards a more efficient, sustainable and low-residue plant protection through the use of natural and/or low-copper products.
- Investigate the effectiveness of these products for the defense of the vine on a large scale - from the laboratory, to the greenhouse, to the vineyard - in the main European wine-growing countries.





# PROJECT PARTNERS





# PROJECT GOAL

Develop innovative natural formulations (**PPPs**) for Downy Mildew (**DM**) and Grapevine Trunk Disease (**GTD**), which have a particular impact on the production and quality of grapes, also using the circular economy approach.

We developed, tested and perfected 2 products against DM and GTD that contain:

 **Hydroxyapatite carbonate**

 **Natural oils**

 **Copper content**

Formulated with low content  
Formulated without copper





# PROJECT PROCESS

**2 PRODUCTS TESTED**

**PRODUCT A:** Cu absent

**PRODUCT B:** Cu 3,5% (tribasic sulphate)

Common components:

- **Microsap<sup>®</sup>**  
(hydroxyapatite carbonate)
- Mixture of Natural oils
  - Zn (EDTA)

## ***Microcrystal of HYDROXYAPATITE CARBONATE***

- Aqueous suspension of **completely bio-compatible** micro crystals of carbonated hydroxyapatite of micrometric size and that perform the function of "**Carrier**" in formulations
- It presents in its surface positive + and negative electric charges –
- It has a high specific surface , on which biologically active molecules can bind





# PROJECT PROCESS

**Laboratory  
experimentation**



**Field trials  
(registration)**



**Farm trials in the  
vineyard  
(demonstration)**





# PROJECT PROCESS

**Localization of  
Field trials (registration)**

**SCOPE:** Testing and dosing innovative products



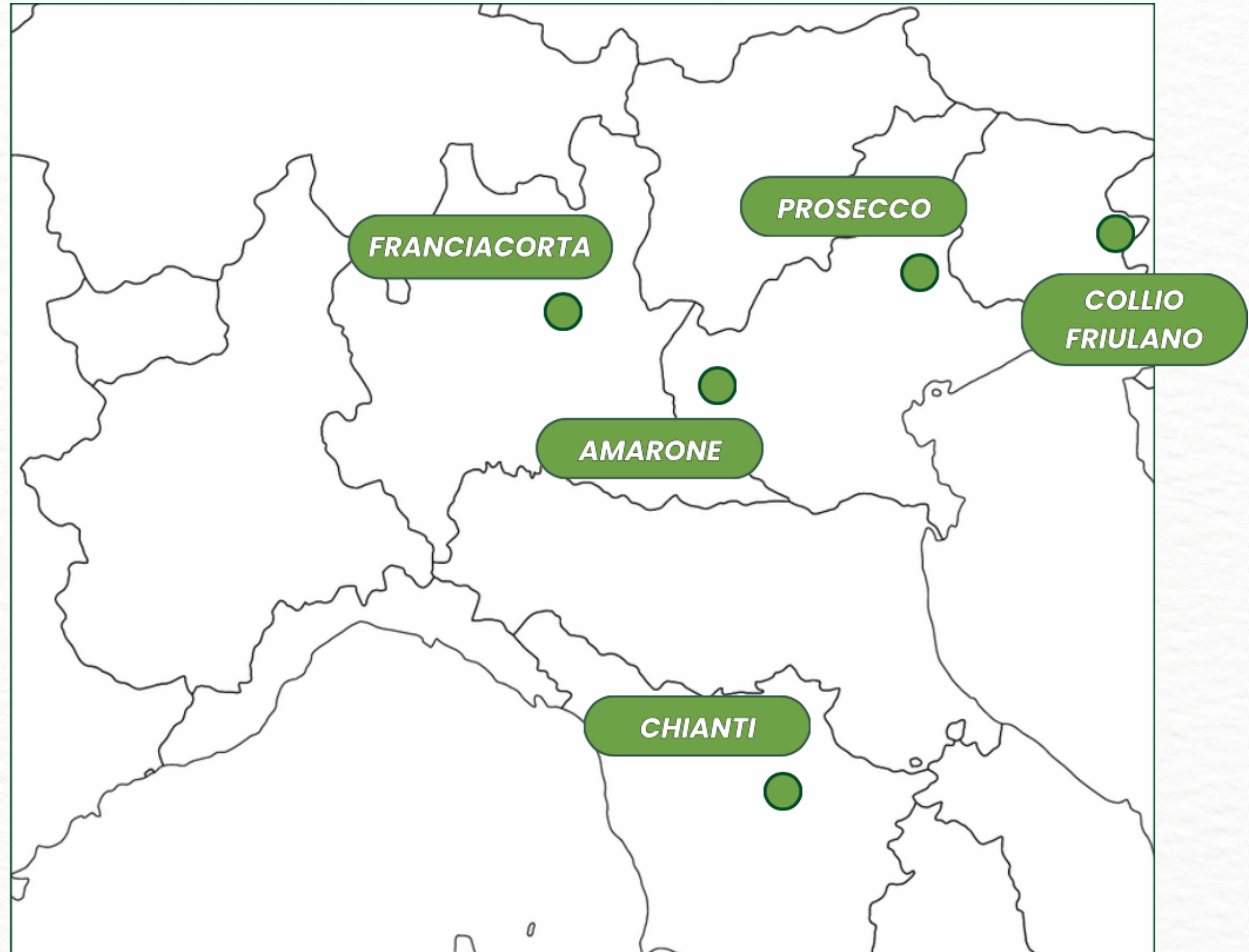
# PROJECT PROCESS

**Localization of farm trials  
in vineyard**

**SCOPE:** Test and dose the innovative products directly in the vineyard by applying them with the farm vehicles, in field conditions.

**Holistic approach to experimentation:**

- Climatic variables
- Varietal susceptibility to pathogens
- Soil characteristics peculiar to each company
- Distribution of products with different machines
- Specific agronomic management



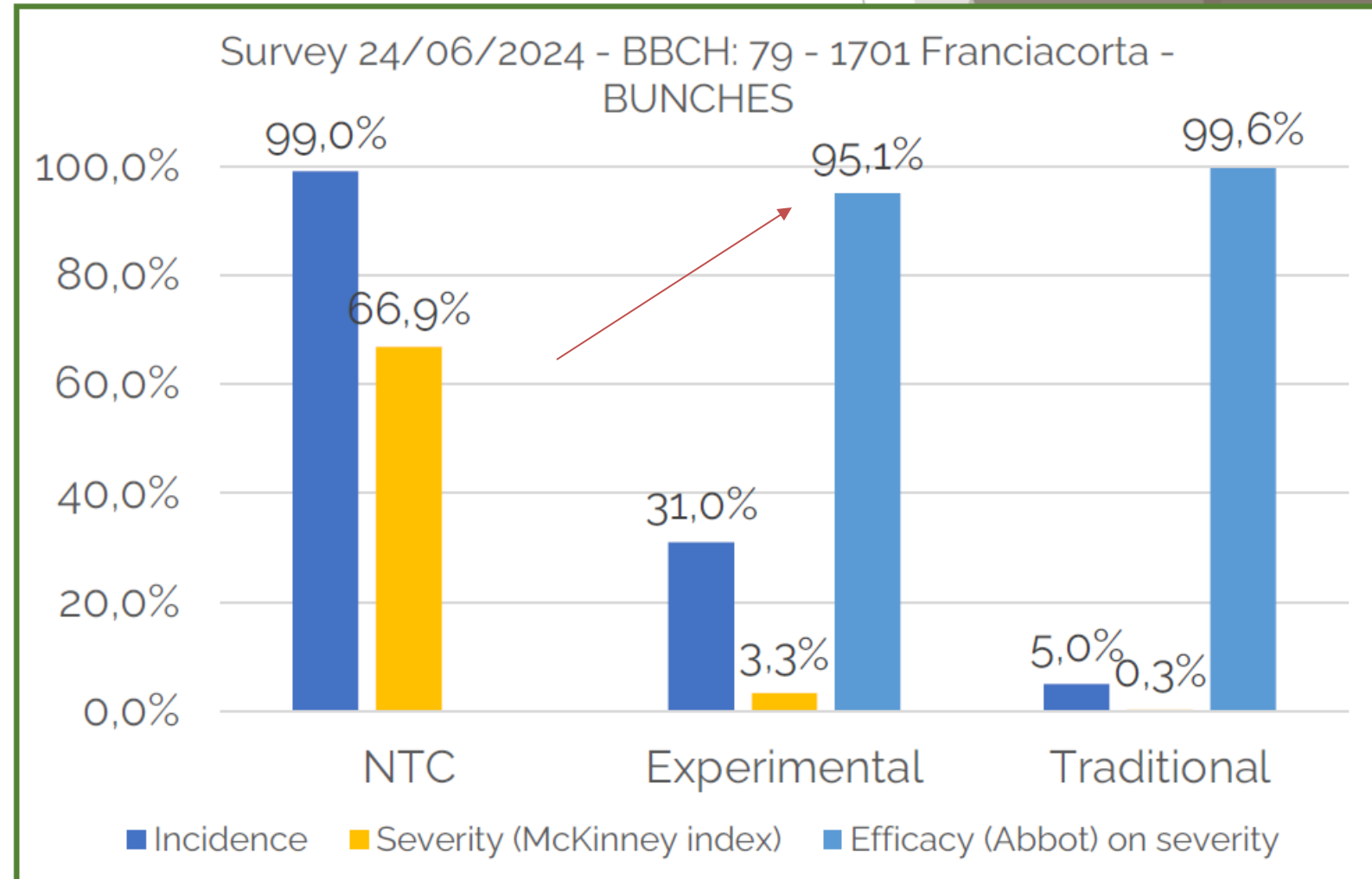
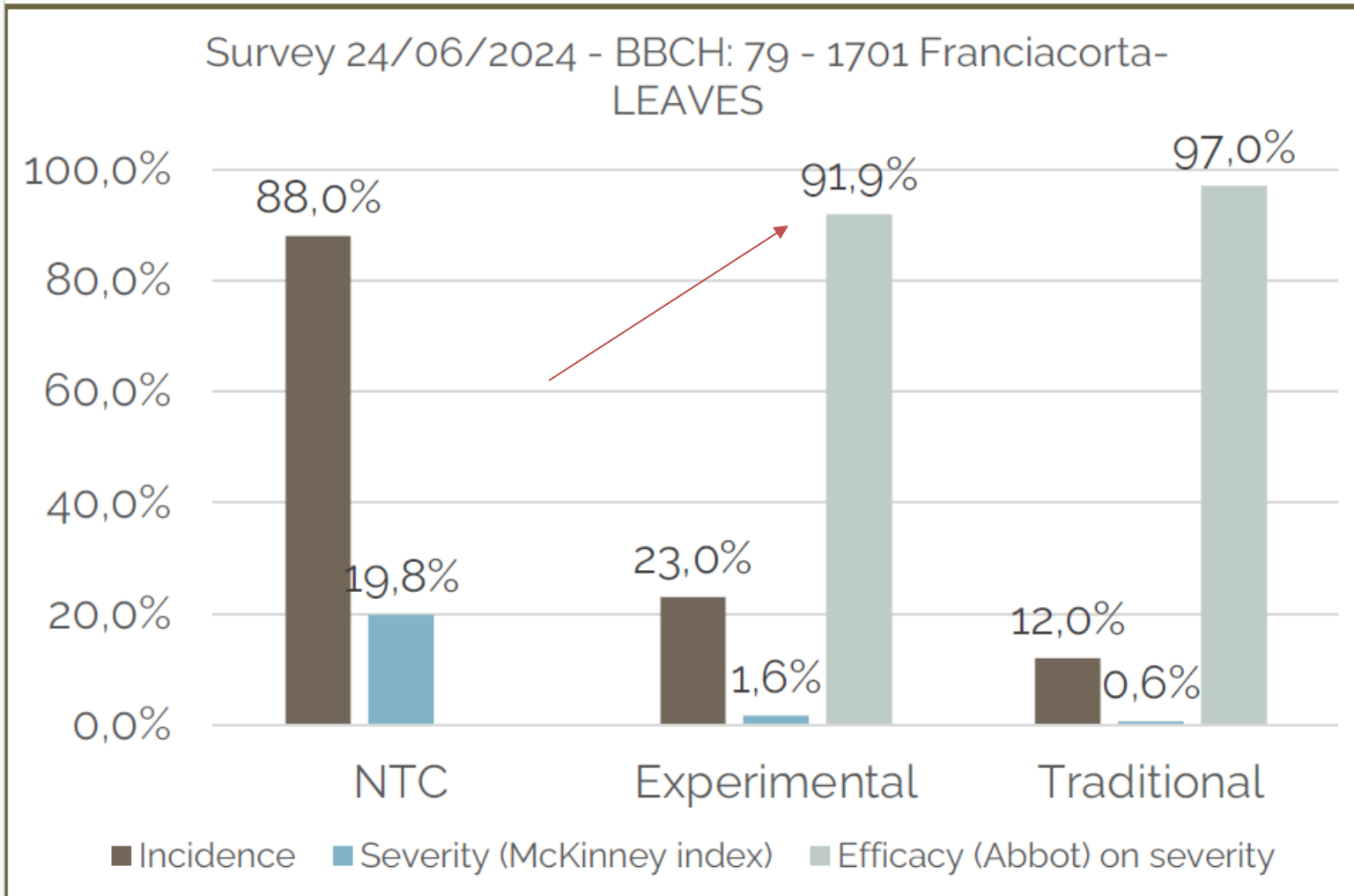


# 2024 Results



**1701 Franciacorta**

Tested formulation		ND23_56
Spraying volume		200 l/ha
Concentration		2,5% - 4%
N° of treatments		20
Cumulative rainfall (1/3 - 24/6)		750 mm
Cu <sup>2+</sup> /ha	Traditional	3,39 kg
	Experimental	0 kg



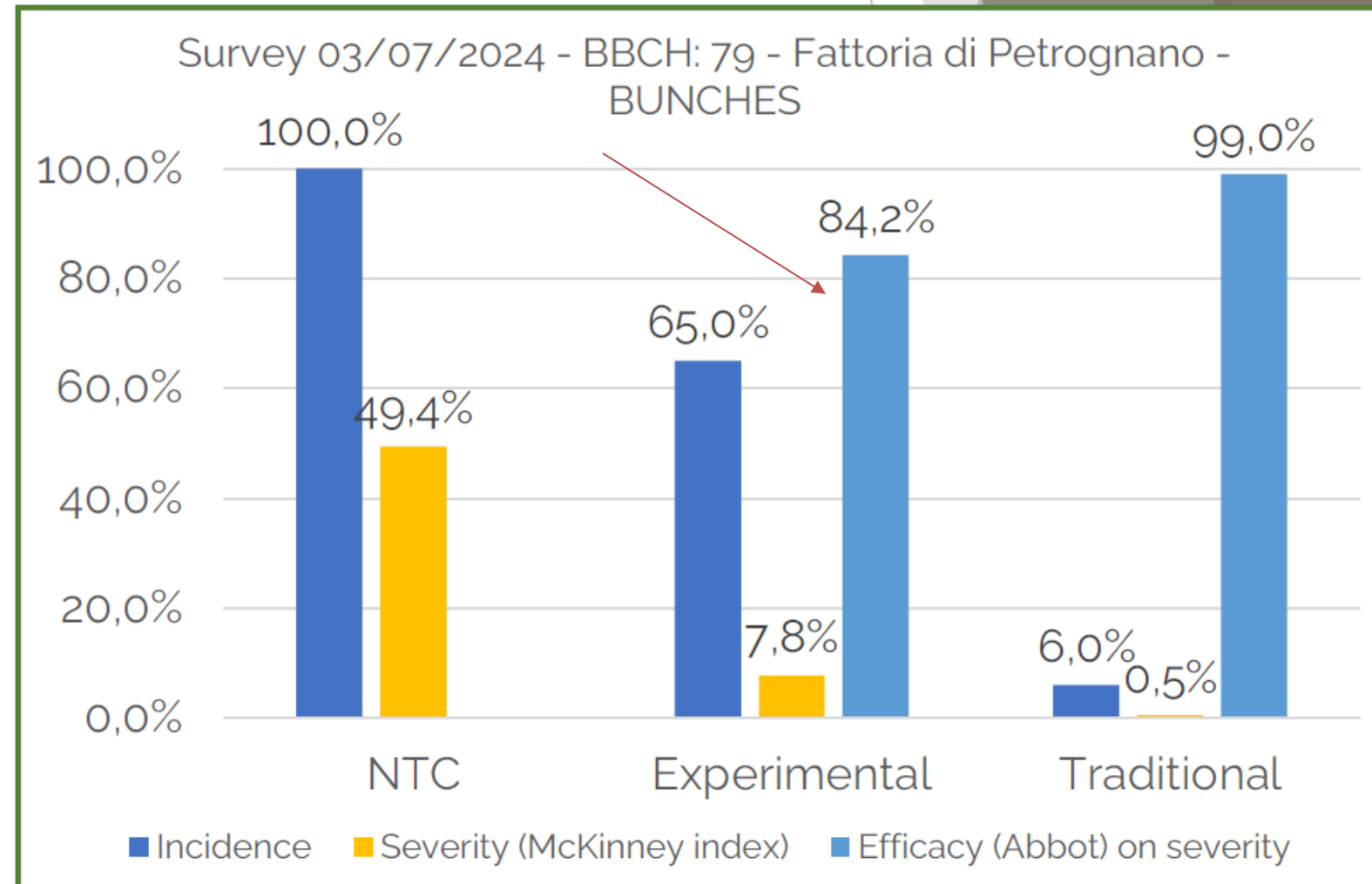
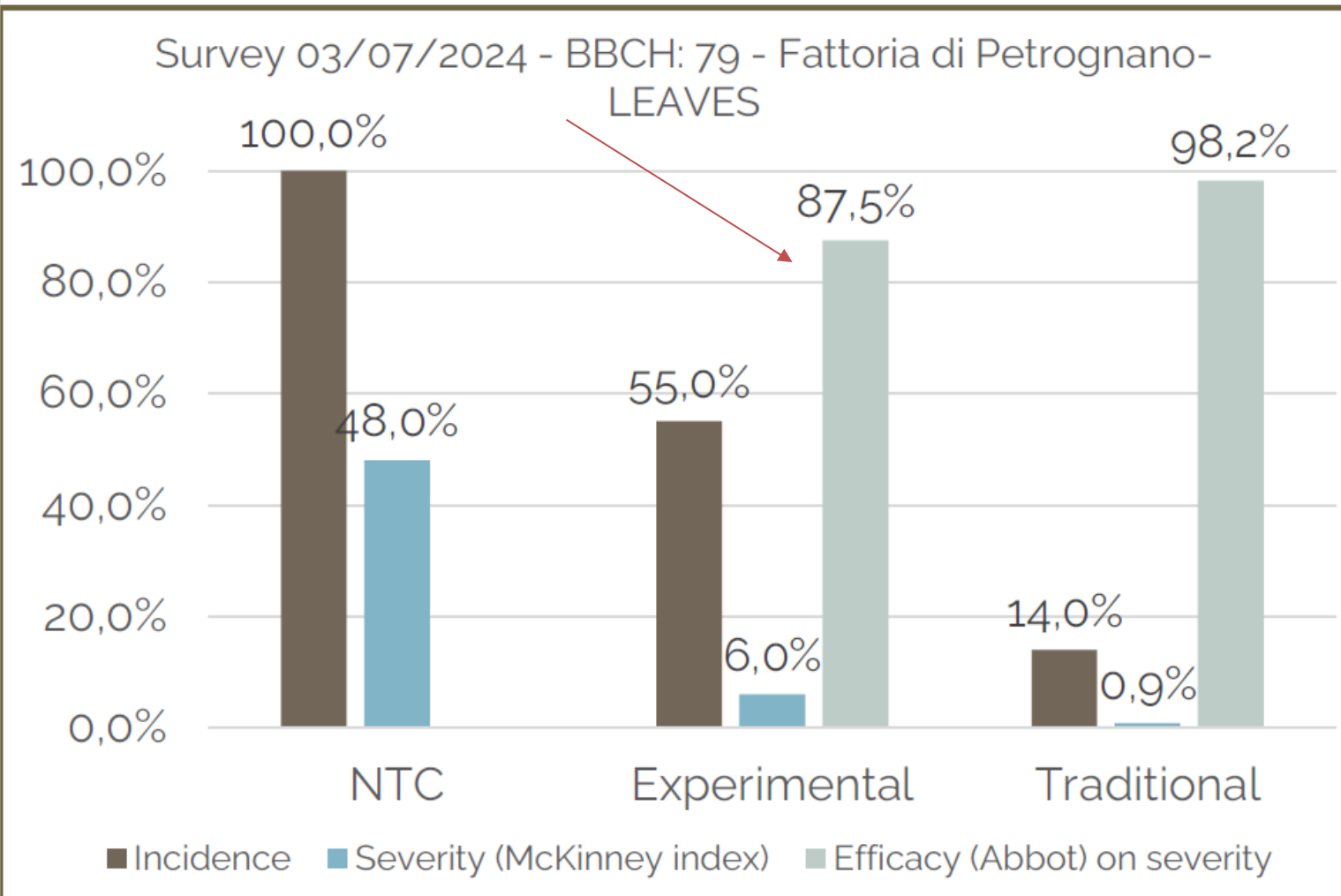


# 2024 Results



## Fattoria di Petrognano

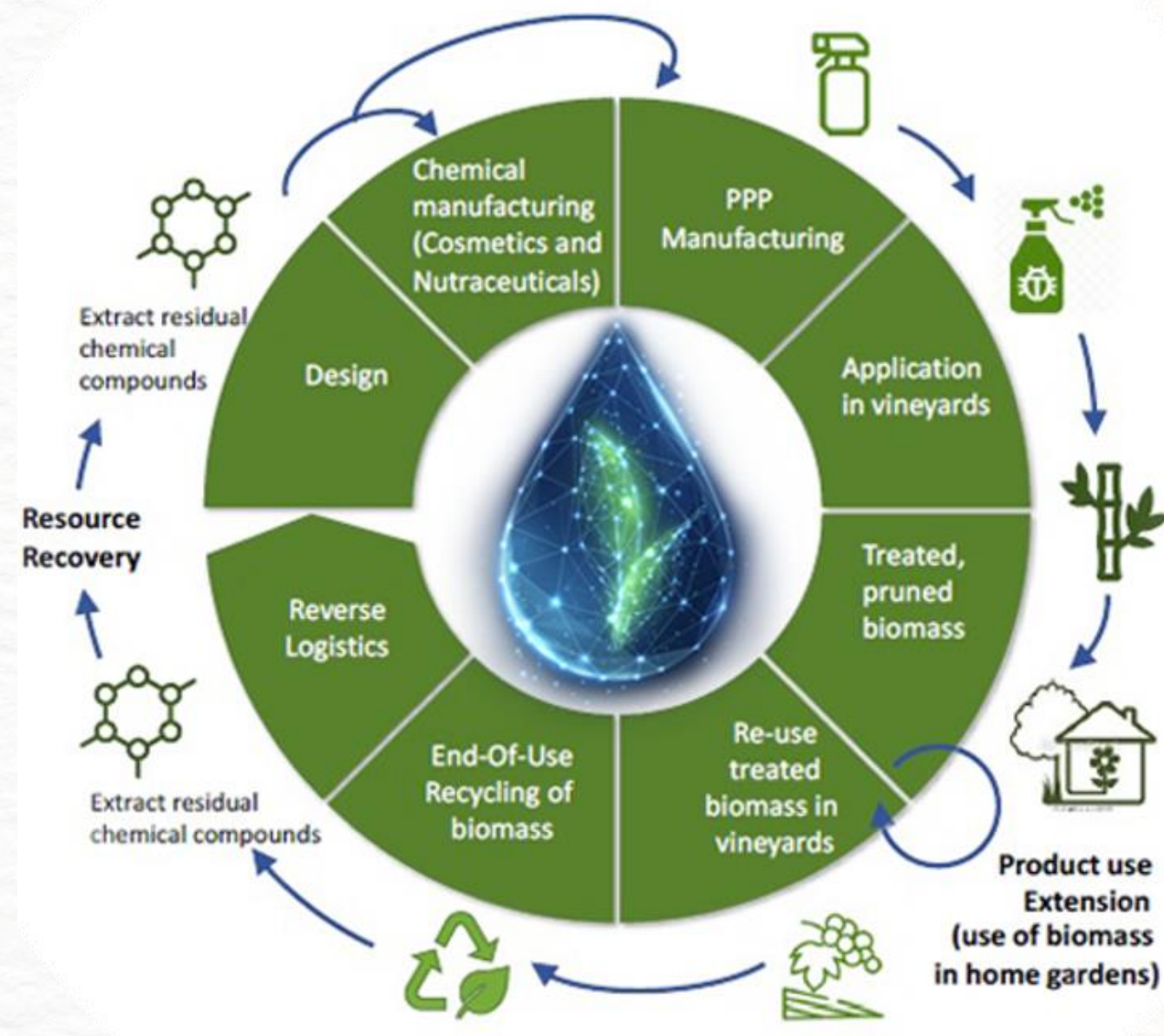
Tested formulation		ND23_56
Spraying volume		250 l/ha
Concentration		2,5% - 5%
N° of treatments		12
Cumulative rainfall (1/3 - 03/07)		254 mm
Cu <sup>2+</sup> /ha	Traditional	2,78 kg
	Experimental	0 kg





# CIRCULAR ECONOMY

This will take place as part of a circular economy process that involves:



- Development of Plant Protection Products
- Application in vineyards
- Harvesting of biomass after pruning
- Reuse of biomass from vineyards for extraction of active ingredients
- Application of new active substances
- Recycling of biomass
- Alternative use of extracted active ingredients



## EXPECTED RESULTS



Reduction of copper accumulation in soil to 0,25 kg/ha by 2028.



Waste management: reduction of biological waste through the introduction of circular approaches in vineyards through the reuse of biomass as biofungicide. The circular approach will allow a reduction of badly managed biomass to 0.75 tonnes/ha by 2028.



PPPs combined with circular biomass enhancement processes will be able to reduce CO<sub>2</sub>-eq emissions by at least 70% by 2028.



# POLICY IMPLICATIONS

The **NATURAL AGRO project** contributes and aligns with EU environmental policies such as:



**DIRECTIVE ON THE SUSTAINABLE USE OF PESTICIDES**  
2009/128/CE



**PROPOSAL FOR AN EU REGULATION ON THE SUSTAINABLE USE OF PESTICIDES** (22.06.2022)



**EU ACTION PLAN: "Towards Zero Pollution for Air, Water and Soil"** (12.05.2021)



**AGENDA 2030** for Sustainable Development



**GREEN DEAL UE** aiming for climate neutrality by 2050



## 2025



Based on the results from the 2024 season, we have identified and developed a new formulation that will be field-tested starting this year.



The formulation is completely copper-free.



The amount of active ingredient has been increased.



A wetting agent has been added to improve adhesion.



## CONTINUATION



New formulations of plant protection products (PPPs) are expected to be launched in the second half of 2028.

We assume that early sales under emergency use authorization could be anticipated.



The efficacy of the formulations is being evaluated through company and GEP trials. A comprehensive report will be published and shared at the end of the 2025 vineyard season.



A detailed business plan will be further prepared based on the guidance that emerged during the implementation of the EXPLOITATION Work Package (WP6) through contacts with stakeholders, farmers' associations and agricultural policy makers.





# THANK YOU

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For Your Attention

