

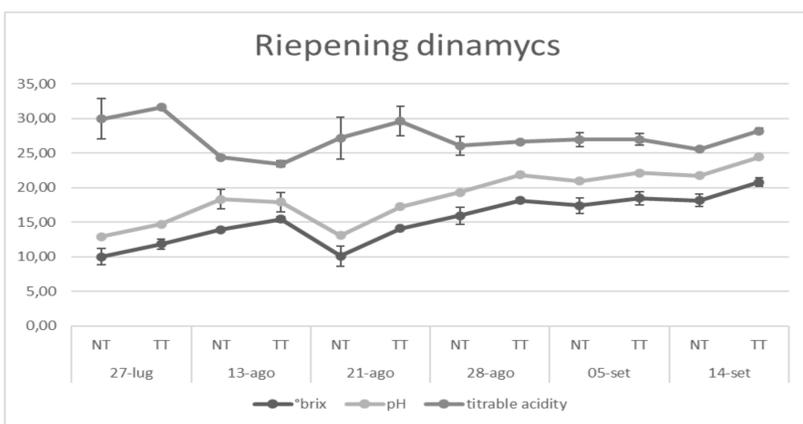
# Effect of a new biostimulant made by *Fabaceae* tissues on ripening dynamics and must technological main parameters in *Vitis vinifera* cv. Ribolla Gialla

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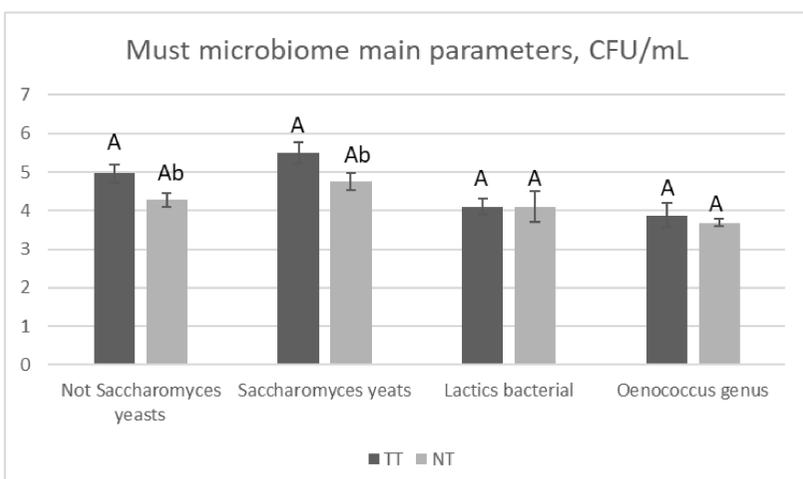
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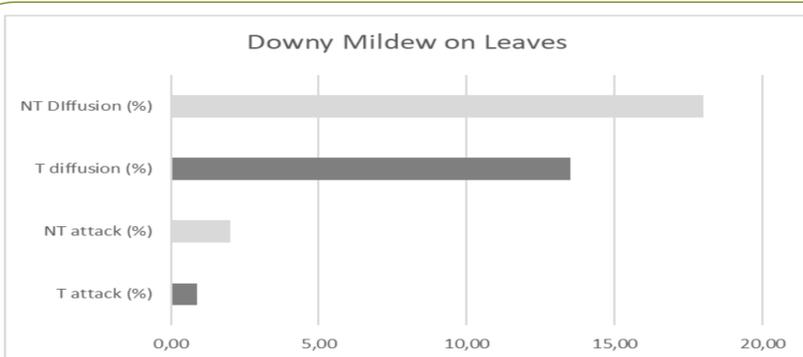
Biostimulants are organic compounds that influence biochemical activity within the treated plant, increasing the efficiency of the whole plant or any of its parts, yet can increase the uptake of necessary nutrients. Specifically, the application of biostimulants to soil or canopy can affect chemical changes in living cells. Furthermore, they serve in order to improve plant growth, flowering, fruit setting, total yield and yield components. In this context, such innovative and sustainable tools may play a key-role in the development of environment-friendly viticultural strategies to improve yield and wine quality. Hence, the aim of this work was to investigate the foliar application of a biostimulant developed by Ilsa SPA, rich in amino acids and peptides along with the presence of natural triacontanol, saponins and various polyphenolic compounds. This was performed in order to study its effect on the yield components, technological maturity trend, and on some must parameters interesting for winemaking. As experimental set up, the treatment with the biostimulant (TT) was compared to a check not treated (NT). For this purpose, Ribolla Gialla cv. was chosen, since in Friuli-Venezia Giulia Region (Italy, NE) it tends to reach the full oenological maturity too much later than others one widely cultivated, then it would be of great interest anticipating the ripeness without compromising any important parameters for winemaking.



Six different timing of grape sampling were performed, from veraison to harvest. It is possible to note how TT treatment had always higher parameters at every time, reaching the harvest time with more °brix degree (total soluble sugars), and more titrable acidity. As consequence pH was higher in TT than NT.



The tested biostimulant not only promoted the ripening, but had an influence on some important microbiological parameters for winemaking. Specifically, we report how at harvest time there were an higher content of Saccharomyces and not saccharomyces yeasts in TT than NT, whilst no significant differences were found on Lactic bacterial nor on Oenococcus genus



As last consideration, the biostimulant might have influenced the tissues composition since we found the lowest level of downy mildew (*Plasmopara viticola*) attack in TT treatment compared to NT. On grapes, these percentage did not vary too much

## Conclusions

This study was conducted during seasons 2020 in a private vineyard of Ribolla Gialla grapevine (*Vitis vinifera*, L.) grafted onto rootstock SO<sub>4</sub>, in the north-east of Italy, Friuli Venezia Giulia region. For farmers and winemakers would be of great interest anticipating harvest time, to avoid phytoiatric problems, especially for those variety, as Ribolla Gialla, that tend to reach the technological maturity later than other variety. For this purpose, biostimulants made by organic protein hydrolysates are good tools. Hence, the aim of this investigation was to study the effect of spraying a natural organic fertilizer (a biostimulant rich in proteins), derived from *Fabaceae* genus, on must ripening dynamics and its technological parameters. Moreover, the effect of the biostimulant on some must microbe components interesting for vinification was investigated as well. After the first tested year, the natural biostimulant had a positive action. In fact, data showed that ripening was anticipated in TT, having had higher parameters at every stage. In addition, we report how the TT treatment reached a full maturity for local standards one week earlier than NT. Finally, there also was a good effect on must microbiome main components, since the Yeasts present in the must was higher in TT, meaning that the proteins in the biostimulant promoted the growth of the microbial community of berry skin.