

Grape

Vineyard Programme Trial Results | Wine Quality



The aim of the trial was to assess the effect of BioStart’s biostimulant programme for vineyards on yield and flavour.

Trial Description

The 3-year trial was undertaken on a premium Pinot noir block (Abel clone) at Mud House Vineyard, Accolade Wines, Marlborough. The Year 3 season was cold over flowering which resulted in poor fruit set and smaller than usual bunch size. As a result, no bunch thinning was carried out and yields in the region were 20-30% below normal.

Trial Programme

The following biostimulants were applied:

Mycorrcin – a soil biostimulant that activates beneficial soil microbes to make more nutrients available for plant growth and fast crop establishment.

Foliacin – a foliar biostimulant that improves leaf retention and photosynthesis levels and improves vine resilience.

Digester – a soil biostimulant that activates the soil microbes that breakdown organic matter from cover crops residues which recycles nutrients faster and improves soil structure.

Starting in the 2018/19 season, the trial continued for three years with Mycorrcin applied at bud break and with all weed sprays (2–3 per year), Foliacin applied regularly with all cover sprays throughout the season from bud break (7-9 application/season) and Digester was applied in autumn.

The grapes were harvested in March 2021 and independent microvins were made by Dr Tanya Rutan at the Bragato Research Institute, Blenheim.



Trial Results

1. Yield: The yield in the BioStart treated vines was 24% greater than the untreated vines, indicating that the programme reduced the yield loss. This was achieved through the BioStart vines carrying 8.5 more bunches per vine than the untreated vines with the bunches remaining a similar weight.

2. Juice Analysis: The juice of the treated and untreated grapes was similar, despite the increased yield in the treated vines.

Treatment	Brix	pH	TA (g/L)	Malic Acid (g/L)	YAN (mgN/L)
Untreated	20.4	2.9	8.8	3.3	145
Treated	20.0	3.0	9.5	3.3	177



3. Fermentation: The fermentation process showed that Juice from BioStart-treated vines had a steadier ferment.

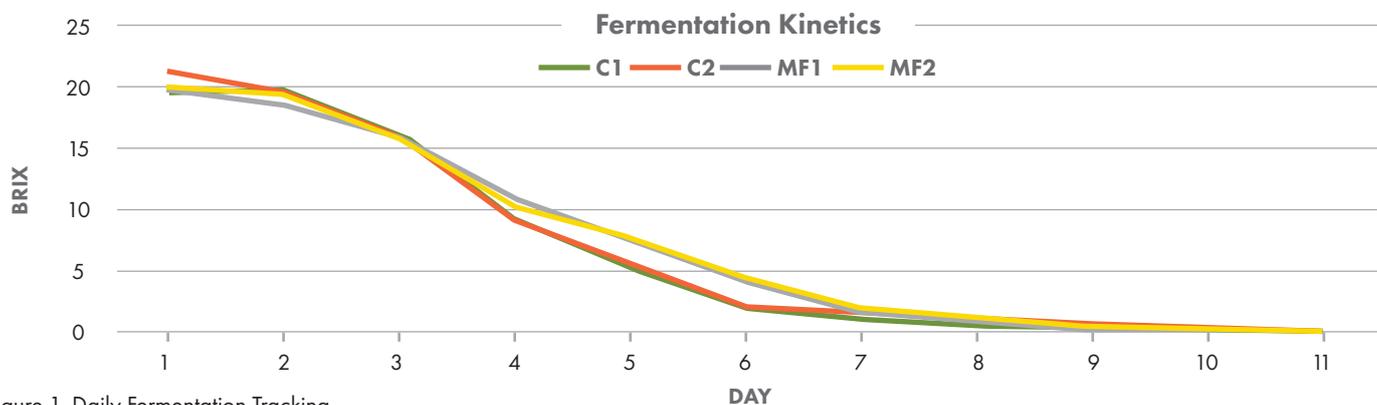
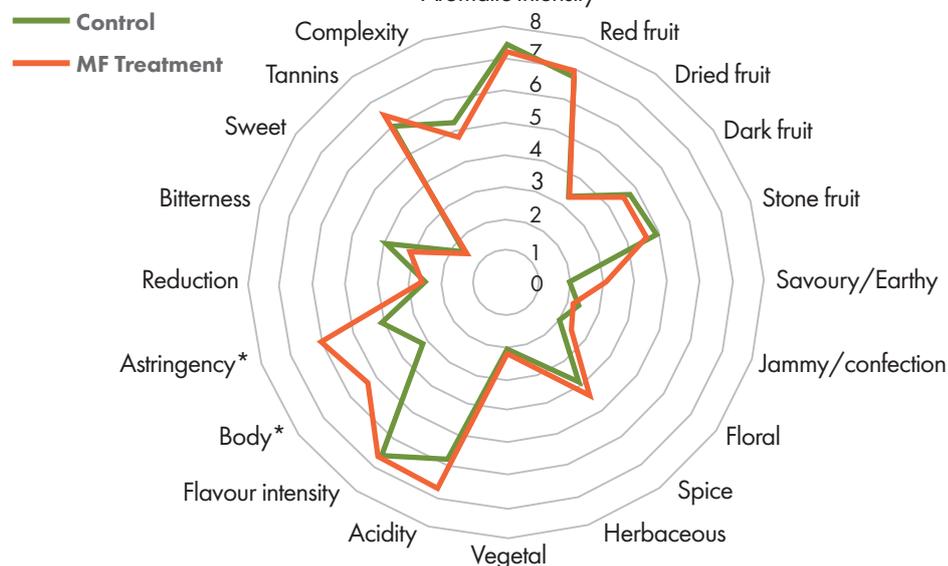


Figure 1. Daily Fermentation Tracking

4. Wine Flavour Analysis: The resulting microvins were tasted blind by a panel of 16 experienced Marlborough Pinot noir winemakers who judged the treated wines as having a statistically significant better mouth feel (astringency and body).



Sensory Profile



Compound	Difference
Total Flavonoids	18%
Quercetin-3-glucoside	17%
Total flavanols	22%
Tannin (epicatechin)	6%
Tannin (catechin)	4%

5. Phenolic Analysis: The chemical analysis of the microvins showed that the BioStart treated wines had greater levels of flavanols and flavonoids which explains the improved mouth feel.

Conclusion

The long-term use of the BioStart biostimulant programme in a commercial Pinot noir vineyard improved grape yield in a difficult year and improved wine quality of Pinot noir.