Mycorrcin & Digester Vineyard Trial

Marlborough 2013 – 2016

BioStart's soil programme for premium-quality red wine

BioStart Ltd conducted a three year trial on a Pinot Noir block in the Fairhall Vineyard of Pernod Ricard Winemakers in Marlborough from 2013 to 2016 which has demonstrated a clear link between the application of soil microbial stimulators, BioStart Mycorrcin and Digester, and improved red wine quality.

Trial design

The trials were conducted on a block of Pinot Noir (clone 777 grafted on to rootstock 3309) planted on Brancott silt loam. When the trial started in the 2013/14 season the block was being converted from organic into conventional viticulture management as there had been issues with fruit yield and quality.

- The trial consisted of two treatments, Control and the Premium BioStart Mycorrcin & Digester applied to 5 replicates of 4 rows each. Both treatment areas received the standard Pernod Ricard Winemakers' spray and nutrition programme.
- The Mycorrcin & Digester Premium Programme consisted of three applications; early spring 6 L Mycorrcin/ha, summer prior to veraison 4 L Mycorrcin/ha and a post-harvest clean-up spray of 4 L Digester/ha.
- Flowering leaf and petiole test and veraison leaf tests were collected in December 2015 and February 2016, respectively. In March 2016 the grapes were harvested and Kirsten Creasy, Oenologist, for Hill Laboratories made Microvins and analysed the wine.

Results

- **Increased nutrient uptake**
  At flowering Mycorrcin and Digester increased leaf and petiole P by 14% and 16%, and K by 13% and 10%, respectively (Figure 1 and 2), and increased the level of leaf N by 17% (Figure 3) over the control.
- Soil microbes helped make nutrients available while Mycorrhizae enhanced soil nutrient uptake by the vine.

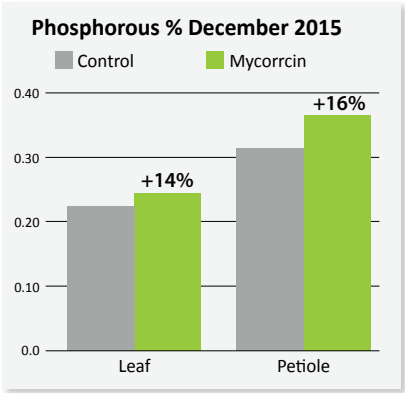

Figure 1

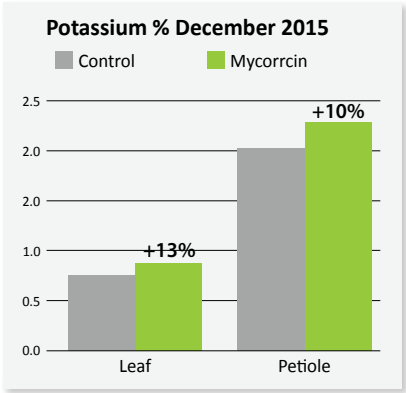

Figure 2

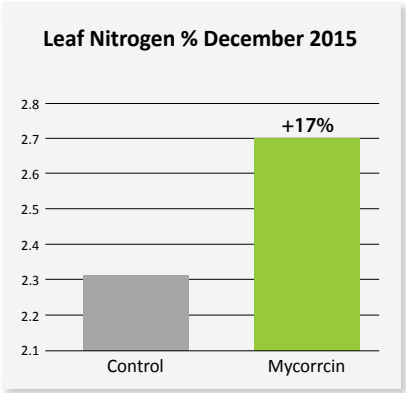

Figure 3

- **Increased leaf calcium and magnesium at veraison**
  The Mycorrcin and Digester treatment increased calcium and magnesium uptake by 16% and 12% over the control, respectively (Figure 4 & 5). These increased levels of calcium and magnesium improves juice quality and berry skin strength.

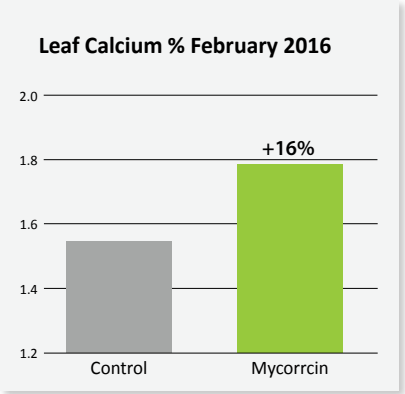

Figure 4

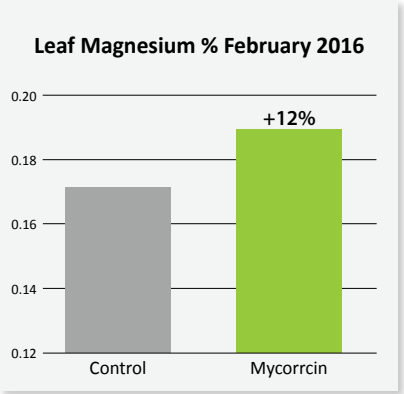

Figure 5

- **Better bunch architecture**
  The Mycorrcin and Digester had fewer bunches per vine (-15%), but a 14% greater bunch weight (Figure 6 & 7). This meant the yield was similar for both treatments but the Premium programme delivered a superior juice.

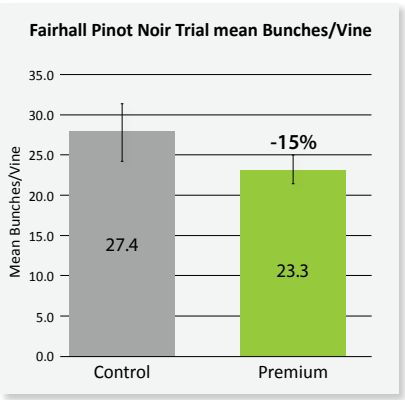

Figure 6

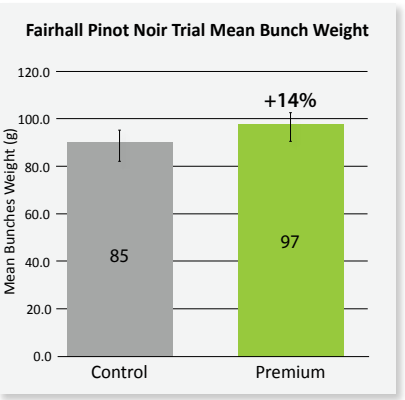

Figure 7

Microvin analysis (Hill Laboratories)

These grapes were used for making sparkling wine and were therefore at a lower Brix than is normal for red table wine. The Mycorrcin and Digester treatment showed;

- **Improved grape quality; less hen and chicken berries, more evenly ripe bunches, less botrytis, and more robust grape skins**
- **Improved juice quality; the Mycorrcin and Digester treatment had increased Brix, reduced malic acid and reduced titratable acid.**
- **Improved sensory evaluation;**

Control – good intensity of colour with bright fruit – strawberry / raspberry. Palate OK balance but lacking phenolics. Sour cherry fruit – pretty.

Premium Mycorrcin/Digester– Good intensity with the good purple hue. Richer, riper raspberry aromatic. Bigger palate with weightier structure. Some phenolic grip – good mid palate. Better balance. Preferred over control.

"There were significant differences in the skin integrity between the untreated and treated as well as the concentration in flavour and palate weight." Kirsten Creasy, Oenologist, Hill Laboratories

Mycorrrin
Mycorrcin is a soil microbial stimulator which activates indigenous beneficial bacteria and mycorrhizal fungi in your soil. Mycorrhizal fungi colonise the roots and, in exchange for carbon, provide phosphorous, nitrogen and micronutrients to the plant which, in turn, improves plant health. Mycorrcin also stimulates new root growth, thereby increasing root mass which supports plant growth and survival during times of stress like drought. Mycorrcin is suitable for all crops and soil types and is generally applied from spring onwards.

Digester
Digester is a soil microbial stimulator which activates the indigenous beneficial bacteria in your soil responsible for decomposition. Digester speeds up the decomposition of leaf litter, prunings and dead roots and converts it to soil organic matter (humus) thereby recycling nutrients back into the soil, improving soil water-holding capacity and reducing soil compaction. By decomposing crop trash quickly the disease inoculum on leaves and branches (e.g. Botrytis) is attacked by soil microbes. Using Digester therefore helps reduce disease inoculum levels in the vineyard for the next growing season.

Compatibility: Mycorrcin and Digester are compatible with commonly-used herbicides, fertigation nutrients and suspension fertilisers.