



# Tivano

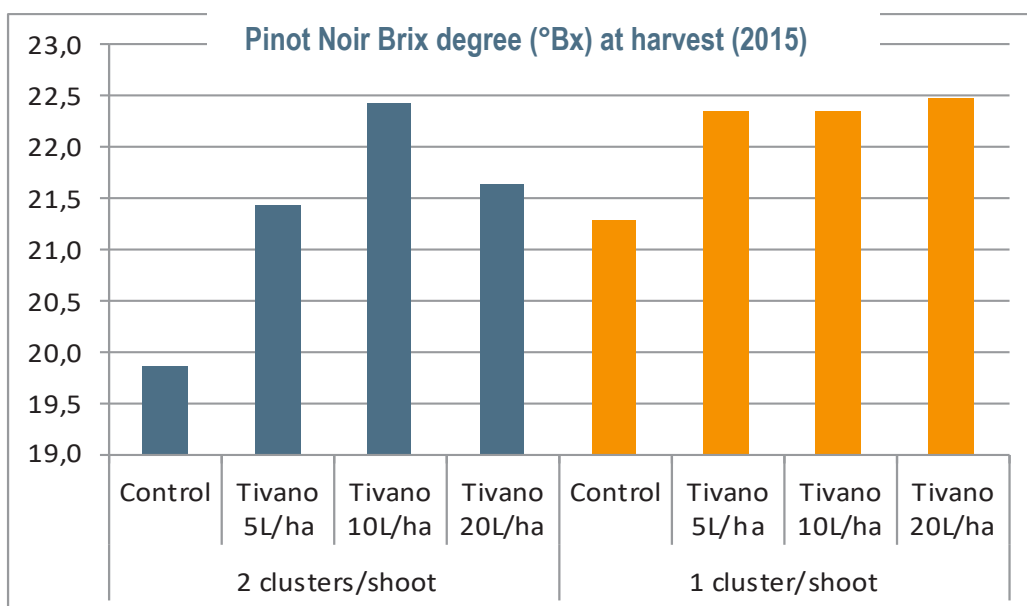
Fungicide & Bactericide

Evaluation of the impact of Tivano on quality parameters of grapes

## Tivano maintains Brix level when crop load is doubled

### RESULTS 2015

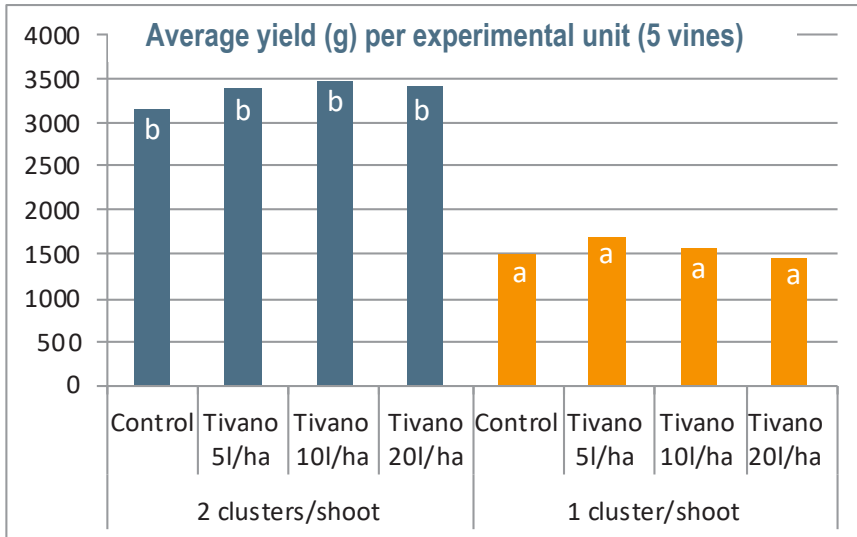
- Variety: Pinot Noir
- Location: Palmyra Vineyards, Niagara region, Ontario
- Comparative treatments: 3 rates of Tivano (5, 10 and 20 L/ha) combined to 2 thinning managements: 1 or 2 clusters per shoot
- Experimental device: randomized complete block design (4 replicates)
- Spray volume: 500L/ha
- Treatments frequency and interval : 4 comparative treatments and 14 days interval which begins 2 weeks after petal fall
- Maintenance: Conventional disease management and complete fertilisation program



Unthinned shoots with Tivano treatments had comparable Brix degree than the thinned shoots without Tivano

Significant difference is observed between control (2 clusters / sprout) and other treatments for Brix level at harvest ( $p = 0.04$ ; 19.9 vs 22.0 °Bx) as well as total acidity ( $p = 0.02$ ; 8.38 vs 7.54 g/L)

The increase of the Brix degree is not caused by a decrease of the yield.

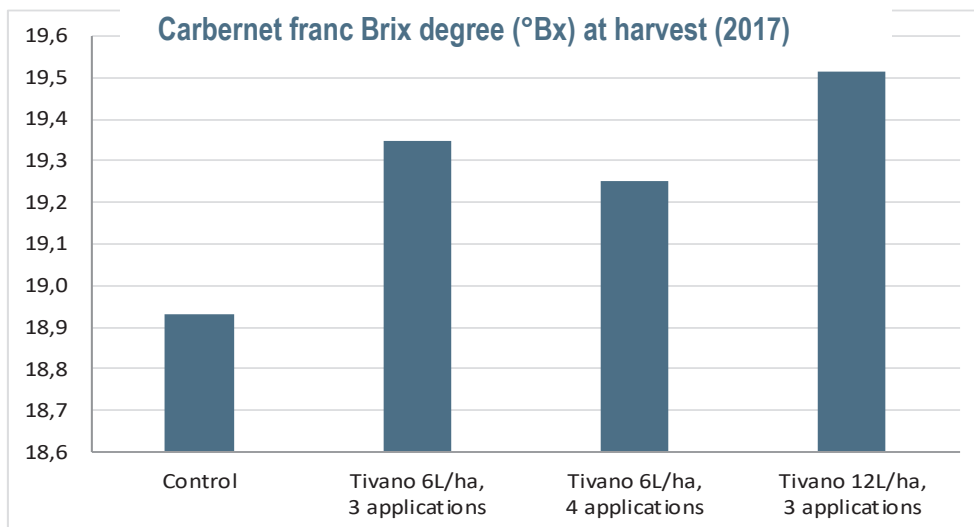


Phenolic compounds analysis of the berries made by ETS Laboratories in California did not show significant difference between the following compounds: Catechin, Quercetin, Glycosides, Tannins, Polymeric anthocyanin, Total anthocyanin, Catechin/Tannins ratio and Polymeric anthocyanin/Tannins ratio.

Means not followed by a common letter are significantly different (P=0.05) as determined by Tukey test.

## RESULTS 2017

- Variety: Cabernet franc
- Location: Niagara region, Ontario
- Comparative treatments: 2 rates of Tivano (6, 12 L/ha) with 3 or 4 applications
- Experimental device: randomized complete block design (8 replicates)
- Spray volume: 500L/ha
- Treatments frequency and interval : 3-4 comparative treatments and 14 days interval which begins 4 weeks after petal fall
- Maintenance: Conventional pest management and complete fertilisation program



The low rate of Tivano applied 3x or 4x had comparable Brix degree at harvest.

Significant difference is observed between control and other treatments for Brix level at harvest (p = 0.0163). No difference for pH (p = 0.4927) and titratable acidity (p = 0.8939)