

A comparison of Sentia and Vinmetrica for determining free SO₂ in wine

Rich Sportsman, Vinmetrica.

Summary: The Sentia analyzer and the Vinmetrica SC-300 were used to assay SO₂ levels in wine. Samples of wine from Little Oaks Winery, Vinmetrica's sister company, were analyzed by each system before and after adding known amounts of free SO₂. Overall the results correlated well. I conclude that the Sentia Analyzer gives comparable results in the range of most interest, i.e. 3 to 30 ppm free SO₂.

Method: The Sentia analyzer and the Vinmetrica SC-300 were used according to provided instructions. Both methods take about 1 minute to complete. The Vinmetrica SC-300 determines the endpoint of a Ripper (iodometric) titration, done in standard manner but without starch indicator. Aliquots of 25. mL wine samples are mixed with acid and developer and titrated to the amperometric endpoint detected as first appearance of free iodine.

Results: Wine samples were tested by both methods. The samples and results are listed in Table 1. In most cases, wine samples were spiked with known amounts of free SO₂ derived from sodium sulfite concentrate. This data is shown graphically in Figure 1. A good correlation exists between the two methods ($R^2 = 0.9727$).

Table 1. SO₂ mg/L values on samples compared between Sentia and Vinmetrica

mg/L values	Sentia		Vinmetrica		+spike amount
	unspiked	+ spike	unspiked	+ spike	
20 Viognier	13.0		14.4 13.6		
20 Sangiovese	12.5		14.0		
19 Viognier	<3	16.4	4.8	15.4	22
17 Malbec	9.1	23.0		18.8	22
13 Red Wine	<3	8.7		10.0	22
13 Sangiovese	<3	17.9		15.0	22
19 Rose of Sangiovese	<3	14.3	4.0	17.0	22
3.7 g/L tartaric pH 3.8	<3	8.2		11.2	22
20 Sangiovese		48.2		35.0	27

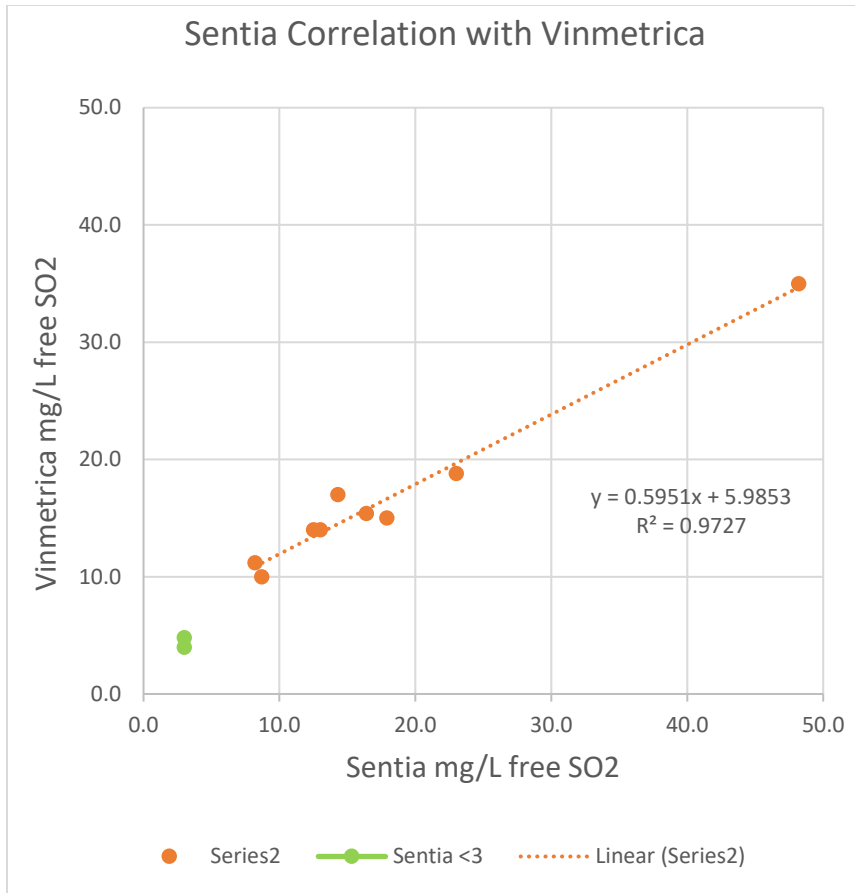


Figure 1. Correlation of Sentia and Vinmetrica results on the wines listed in Table 1.

Discussion:

The results of Figure 1 demonstrate that Sentia’s and Vinmetrica’s analyzers produce data on wines that are strongly correlated (0.9727). The slope of the correlation, 0.5951, could be taken to infer that the Sentia determines values that are higher. However that correlation does not include data for which Sentia reported <3 mg/L, and the data for the spiked 20 Sangiovese are extreme. Adjusting for these extremes (the Sentia values <3 are set to 0 and values above 30 mg/L excluded) gives an estimated correlation of 0.9329 and a slope of 0.6441; this is a slightly weaker correlation but a slope that indicates better agreement in the range 0 to 25 mg/L free SO₂.

Conclusion:

The Sentia analyzer is fast and easy to use and produces data that can guide the winemaker in controlling free SO₂ levels.