

## MONITORING GRAPE PHENOLICS: CATECHIN/TANNIN “RIPENESS” INDEX

### THE ETS PHENOLIC PANEL

The ETS grape phenolic extraction and rapid phenolic panel can be used to follow changes in grape phenolics during ripening and to characterize grapes at the point of harvest.

The grape phenolic panel was used in a University of California Cooperative Extension Service project to study the effects of hang time in Napa Valley Cabernet Sauvignon. The trial was established by Ed Webber, and was designed to evaluate changes in yield components and grape composition during a six to seven week period in five Napa Valley Cabernet Sauvignon vineyards.

### THE CATECHIN/TANNIN RATIO

The catechin/tannin ratio has been a reliable indicator of tannin development in past studies. In this trial, the ratio index clearly showed the effects of grape development, without the influences of dehydration, dilution, or sugar accumulation.

As grapes ripen, the tannin in seeds becomes less extractable and extractable skin tannin increases. This process can be seen in the ratio of catechin to tannin (the catechin/tannin index). The ratio decreases as grapes ripen, when extractable tannin shifts toward skin tannin.

### GRAPHING “RIPENESS”

The 2007 trial ran from September 1st through October 15th. All five vineyards were harvested on the same day each week. The catechin/tannin ratio from Vineyard “C” is displayed in Graph 1 with the corresponding °Brix. The data from all five vineyards is shown in Graph 2. All data confirm a decrease in the catechin/tannin ratio over the given time period (indicating grape ripening).

### HARVEST TOOLS

The catechin/tannin index is a useful tool for making harvest decisions and allows growers to follow the effects of vineyard practices on seed ripening. It provides unique information on the potential “seediness” of fermentation lots, and can be used to develop fermentation or maceration programs tailored to specific grape lots.

**ETS will include the catechin/tannin index in all ‘Rapid Phenolic Panel’ analyses for berry and cluster samples during the 2009 Harvest season.**

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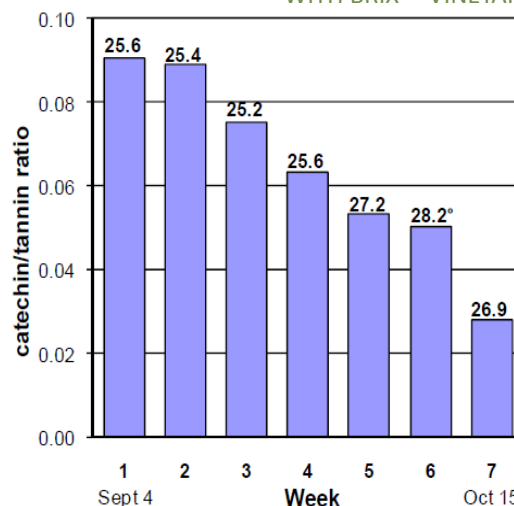
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GRAPH 1

CATECHIN/TANNIN RATIO BY WEEK  
WITH BRIX° - VINEYARD C



GRAPH 2

CATECHIN/TANNIN RATIO BY WEEK  
HARVEST 2007 - ALL FIVE VINEYARDS

