

# Alcohol content in Wine



In this article, we want to show you how accurately the EasyDens & SmartRef Combo determines the alcohol content of wine compared to FTIR spectroscopy.

## EASYDENS & SMARTREF COMBO IN TEST WITH FTIR SPECTROSCOPY

When producing high-quality wine, everything must be under control - from harvest to the finished product. To ensure that the alcohol content measurement method of the EasyDens & SmartRef Combo can be fully relied upon, we have put its accuracy to the test.

### BACKGROUND

EasyDens and SmartRef help you in monitoring the entire winemaking process. While you can quickly determine the harvest time of grapes with **SmartRef**, **EasyDens** can track the entire fermentation process. **Together**, these two devices allow you to determine the alcohol concentration and total extract of wine, during and after fermentation, as well as of unknown or

finished wine. Feel free to read this blog article if you're interested in more details: [Determine the alcohol content of wine with EasyDens and SmartRef Combo](#)

## BENEFITS AT ONE GLANCE

- Simple functionality at a reasonable price
- Fermentation tracking during the complete winemaking process
- ABV determination of unknown/finished wine samples
- Quick measurements allow rapid intervention in the ongoing process
- Direct storage on your mobile phone for having results accessible anytime, anywhere
- More accurate prediction of lab results

## ALCOHOL CONTENT IN WINE: MEASUREMENT PERFORMANCE TEST

To demonstrate the measurement performance of the EasyDens & SmartRef Combo, the measurement results were compared with those of an FTIR spectrometer. Fourier Transformation Infrared Spectroscopy, or FTIR for short, is an important analytical method used in the food, chemical, pharmaceutical, and polymer sectors to determine a molecule's structure.

This analytical method makes use of the characteristic absorption frequencies that covalent bonds with different functional groups (C=O, C-H, O-H, etc.) have. Such compounds are found in wine as well. For that reason, FTIR analysis is used as an accurate, convenient, and reliable measurement method to quantify the alcohol content, sugar content, acid content, and many more. These days, FTIR spectroscopy is used in the most accreditive laboratories for wine analysis.

However, an FTIR spectrometer might not be affordable for most hobby winemakers. Therefore, it is our passion to make **precise alcohol determination in wine** accessible for everybody and reveal the performance of our EasyDens & SmartRef Combo to you.

### **Alcohol content measurement results in comparison to FTIR**

White wines, red wines, and sparkling wines were tested with the EasyDens & SmartRef Combo in comparison to an FTIR spectrometer ( $\pm 0.2$  %v/v) in collaboration with FS Silberberg (educational centre for viticulture and fruit growing).

*Table 1: Measurement results for different wine samples with EasyDens & SmartRef Combo in comparison to FTIR analysis*

SAMPLE	ABV EASYDENS & SMARTREF	ABV FTIR	DEVIATION
WELSCHRIESLING	11.6 %v/v	11.8 %v/v	-0.2 %v/v
ROSÉ	11.2 %v/v	11.6 %v/v	-0.4 %v/v
SAUVIGNON BLANC	12.1 %v/v	12.6 %v/v	-0.5 %v/v
SAUVIGNON BLANC KITZECK	13.5 %v/v	13.9 %v/v	-0.4 %v/v
GRAUBURGUNDER LEUTSCHACH	12.9 %v/v	13.3 %v/v	-0.4 %v/v
RIESLING KITZECK SAUSAL	11.9 %v/v	12.2 %v/v	-0.3 %v/v
WEISSBURGUNDER ANNABERG	13.2 %v/v	13.4 %v/v	-0.2 %v/v
ZWEIGELT	12.7 %v/v	12.8 %v/v	-0.1 %v/v
ZWEIGELT RESERVE	13.6 %v/v	13.4 %v/v	0.2 %v/v
CABERNET SAUVIGNON	13.6 %v/v	13.4 %v/v	-0.2 %v/v
PROSECCO	11.1 %v/v	11.2 %v/v	0.1 %v/v

Before the measurement, the samples were [degassed](#) and [filtered](#). The measurement procedure was performed according to this video:

When we take a closer look at the obtained results we can see that the EasyDens and SmartRef Combo results fit with the results from the FTIR spectrometer very well. No result exceeds the limit of  $\pm 0.5$  %v/v.

With this revealed proof of accuracy, we want to show you that exact and reliable measurement results for alcohol content in wine can be also performed by yourself. This not only helps you to prepare well for your laboratory report but also allows you to quickly intervene during the winemaking process to avoid loss of valuable product.

Start now to improve your winemaking process with EasyDens and SmartRef!