

# VDK KITS: GO/NO GO APPLICATION

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## INTRODUCTION

Vicinal Diketones (VDK's) are a natural byproduct of fermentation and it is the yeast's job to take them up and convert them to avoid the off flavors and aromas they are commonly associated with. The best way to check that a fermentation is complete is to test for VDK's, yet the ASBC methods require expensive equipment and sending it to a third party lab could cause days of delay. The VDK test strips combat this problem because you don't need any fancy equipment and can have results in approximately 15 minutes. In order to ensure the strips are just as accurate as the other testing methods, a group of Colorado State University Fermentation Science Majors performed a comparative experiment.

## COMPARATIVE STUDY

To conduct the experiment, four different beer samples were collected at the same time from the Gilded Goat Brewing Company. The test strip results were compared to the gas chromatography method performed by a large production brewery and the distillation method which was performed at a third party university lab. The students noted that the strips compared well to the distillation method and are a good option for a qualitative "go" or "no go" approach.

Beer	Strip Result (ppb)	GC Result (ppb)	Distillation Result (ppb)
Frumpy Moo Moo (Stout)	< 50	97.11	1726
Downpour Petrichor (DIPA)	< 50	62.26	650.9
Cashmere (Cream Ale)	< 50	18.622	241.2
Guten Bock (Bock)	< 50	6.823	146

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## FERMENTATION CURVE

In addition, a seven day fermentation curve was generated on the Frumpy Moo Moo Stout sample using the testing strips. The samples were collected at approximately the same time everyday and then were centrifuged for 1 minute to remove the yeast. The results can be seen in the graph below. The Fermentation Science students concluded that there is a lack of precision when trying to graph a fermentation curve using the strips. However, it does show the strips effectiveness as a “go” or “no go” test and demonstrates the uptake and excretion of VDK’s during fermentation.

VDK Test Strip Curve Generated Over Course of GGBC Stout Fermentation

