ETS LABORATORIES

TECHNICAL BULLETIN

MONITORING GREEN BELL PEPPER CHARACTERISTICS IN GRAPES

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ETS Laboratories offers winemakers the ability to measure IBMP (2-Isobutyl-3-methoxypyrazine) in grapes. IBMP is the main compound responsible for a "green bell pepper" aroma in wine. It is an extremely potent flavor compound, with reported sensory thresholds ranging from 6 to 15 ng/L (ppt) in wine-like solutions and wine. The ETS method utilizes GC/MS analysis with an IBMP isotopic analog as internal standard.

IBMP may be desirable in some wine varieties such as Sauvignon Blanc, favorably contributing its herbal/grassy character, but is often unpopular in red wines. Excessive IBMP can lead to disappointing ratings and affect success in the marketplace.

IBMP concentration in fruit is closely related to the sensory intensity of finished wine. IBMP can decrease quickly during maturation, but once grapes are picked, levels cannot be easily altered by standard winemaking techniques.

APPLICATIONS

Vineyard comparisons and trials

Climate and terroir can affect IBMP levels in grapes. Vineyard management decisions such as soil drainage, varieties and clones, row orientation, trellis system, irrigation, fertilization, vigor, grape thinning and leaf removal may impact grape IBMP levels.

Harvest decisions

Changes in grape IBMP during maturation will directly influence final levels in wine and may be crucial in making picking decisions.

GRAPE SAMPLING

The harvest grape sample can be taken in the vineyard or directly from harvest containers. IBMP levels can vary between clusters and even between sun-exposed and shaded berries on same clusters. A good sampling program is essential to insure that the sample is representative. ETS studies indicated that 200-berries samples, as typically submitted for evaluation of grape maturity, should provide reliable results.

ANALYTICAL DETAILS			
SAMPLE SIZE REQUIRED	JUICE	BERRIES	CLUSTERS
	60 mL	200	20
TARGET RESPONSE TIME	2 days	2 days	2 days

ETS Laboratories | 899 Adams Street | St. Helena CA 94574 | Tel 707.963.4806 | Fax 707.963.1054 | info@etslabs.com | www.etslabs.com
Satellite Laboratories | Healdsburg, CA | McMinnville, OR | Roseburg, OR | Walla Walla, WA