Crop & Environmental Quality Lab
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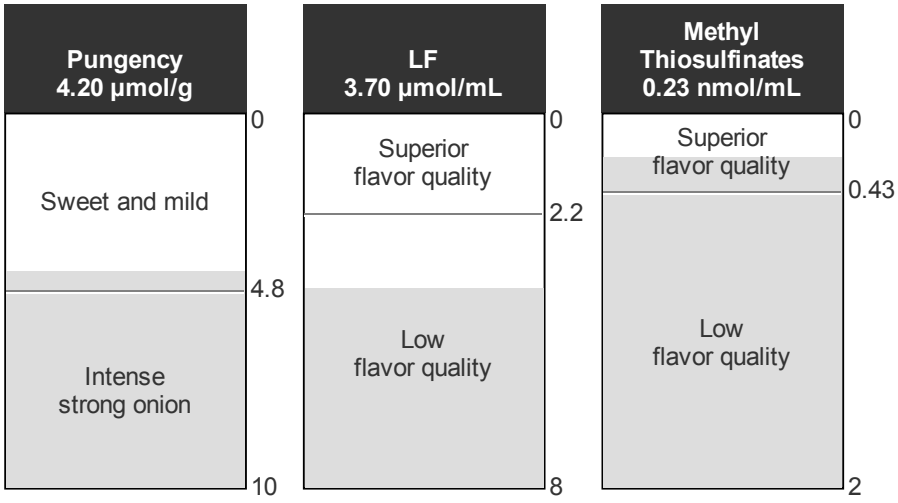
Onion Analysis Report

Client Information	*Lab Information*	*County Information*
John Doe	Lab #9999	**Clarke County**
123 Main Street	Completed: Apr 19, 2016	2152 W. Broad Street
Anywhere GA		Athens GA 30606
Sample: **Example**		phone: 706-613-3640
Onion Variety:		email: uge1059@uga.edu

Results and Interpretation

Microplate	
Pungency	4.20 µmol/g
Gas Chromatography	
LF	3.70 µmol/mL
Methyl Thiosulfinate	0.23 nmol/mL



Onion Flavor Interpretation

Onion flavor quality can be measured in a number of ways. The most essential components include pyruvic acid, LF (lachrymatory factor), and methyl containing thiosulfinates.

Pungency is the measurement of pyruvic acid which is related to the amount of total onion flavor. Some of these flavors are more offensive than others, so pyruvic acid is a broad assessment of the potential for off flavors. The lower the pungency level, the lower the likelihood of experiencing objectionable flavors. Pyruvic acid is a co-product of the lachrymatory factor.

The lachrymatory factor or LF is responsible for tearing of the eyes when cutting onions, but is also a major source of heat and mouth burn. When consumers complain about "hot" onions, LF is usually the culprit.

Methyl containing thiosulfinates are flavor precursors associated with off-flavors described as cabbage-like, sulfur, rotten, metallic, etc. Onions may have high sugars, low pungency, and low LF and still be of inferior flavor quality if they exhibit higher levels of methyl thiosulfinate compounds.

Vidalia onions of superior flavor quality typically a pungency level of below 4.8 µmol/g, and LF below 2.2 µmol/ml. Methyl compounds may over-ride acceptable levels of pungency, sugars and LF. UGA recommendations for total methyl thiosulfinate levels is below 0.43.

The levels of various onion flavor are determined by the variety, cultural and environmental factors such as high temperatures, drought conditions, and sulfur fertility, all of which influence the presence of these compounds.