

Characterization of Aroma Profiles of Traminette Grape Grown in Different Climates

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Introduction

- Traminette is an American hybrid (Joannes Seyve 23.416 X Gewürztraminer)
- One of the most promising cultivar among hybrids in Ohio, Midwestern and eastern states



Introduction *(cont'd)*

Strengths

- Good yields
- Excellent fruit quality
- Better cold hardiness
- Better disease resistance

Weaknesses

- Difficult to establish young vine
- Vigorous vine
- Trunk injury from low temperature

Justification

- Traminette aroma profile is unknown when compared to other white varieties
- Traminette can be grown in different viticultural regions, but regional effect (Terroir) on fruit quality is unknown

Objectives

- 1) To characterize (profile) aroma compounds of Traminette fruit and compare to benchmark white cultivars commonly grown in Ohio
- 2) To determine whether regional climatic differences influence its aromatic profile

Climatic Description of Research Sites

Region	Location	GDD (50°F)	Growing Season	FFD (32°F)
North (Lake Erie)	Kingsville	2500	Cool	175
North (Continental)	Wooster	2700	Warm	160
South (Ohio River Valley)	Ripley	3300	Warm-Hot	178

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Materials and Methods

1) Locations (2005)

- Kingsville
- Wooster

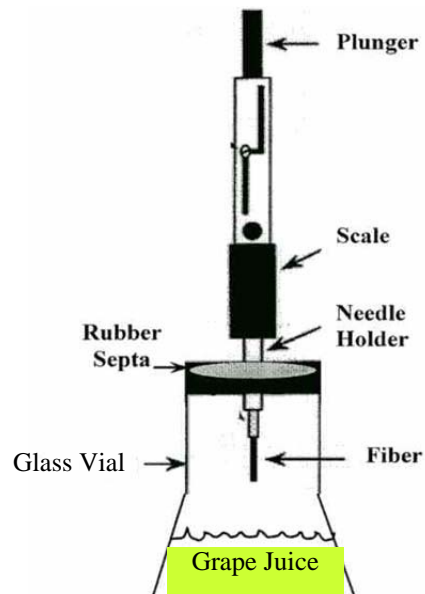
2) Varieties (2006)

- Traminette
- Gewürztraminer
- Riesling
- Chardonnay

3) Data Collection at Harvest

- Yield
- Fruit Composition: Brix, pH, TA

SPME – Method for Volatile Compounds



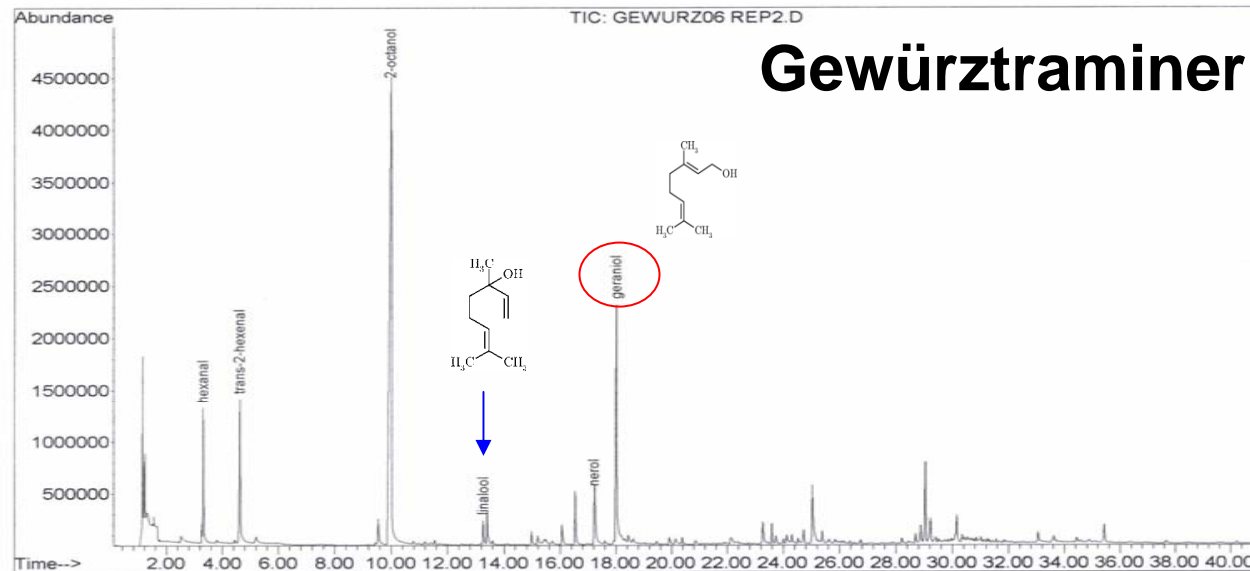
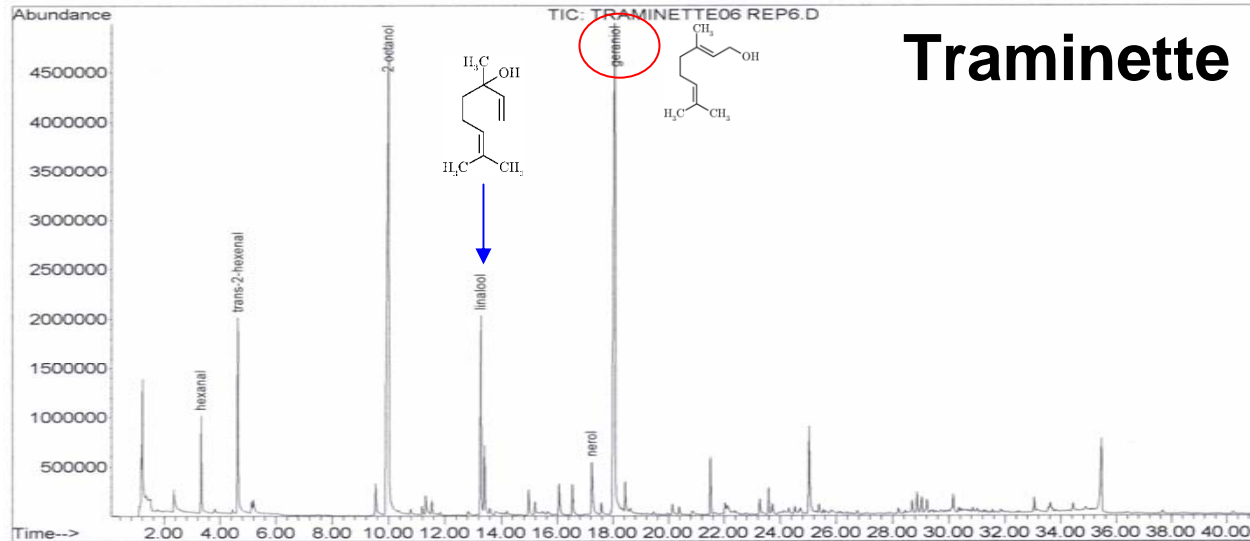
Preliminary Results

Traminette vs. White varieties

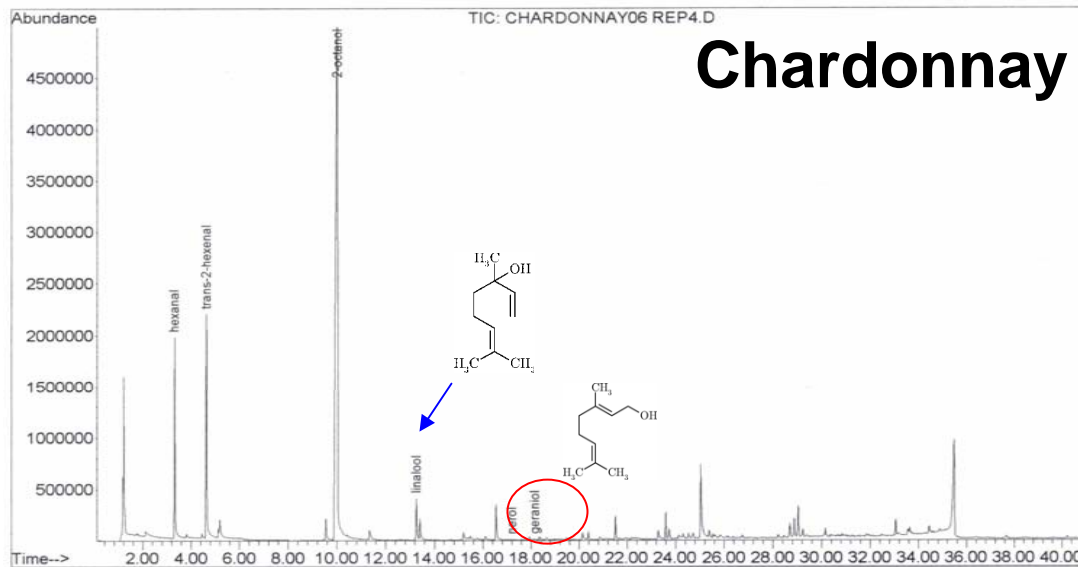
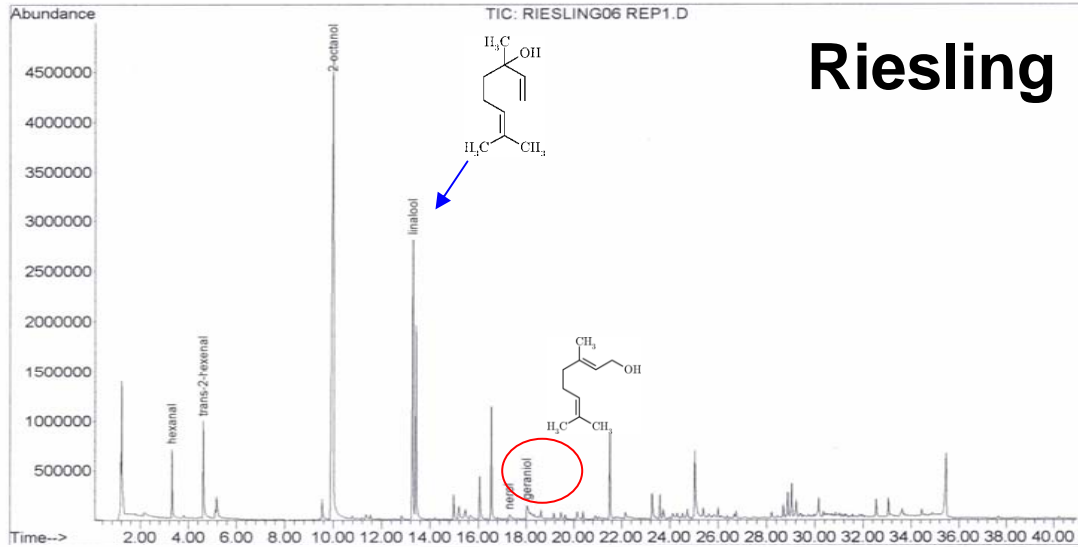
Yield and Fruit Composition

Kingsville (2006)	Cluster No.	Crop Wt. (lb)	100-Berry Wt. (g)	Brix	pH	TA % (g/100 mL)
Traminette	33.5	7.7	200.7	20.5	3.0	1.0
Chardonnay	20.3	4.7	186.6	19.3	3.3	1.2
Riesling	61.6	12.3	180.5	19.1	3.0	1.1
Gewürztraminer	74.4	14.7	150.2	19.3	3.4	0.7

Traminette and Gewürztraminer



Riesling and Chardonnay



Free Volatile Compounds

Standards (aroma threshold, $\mu\text{g/L}$)

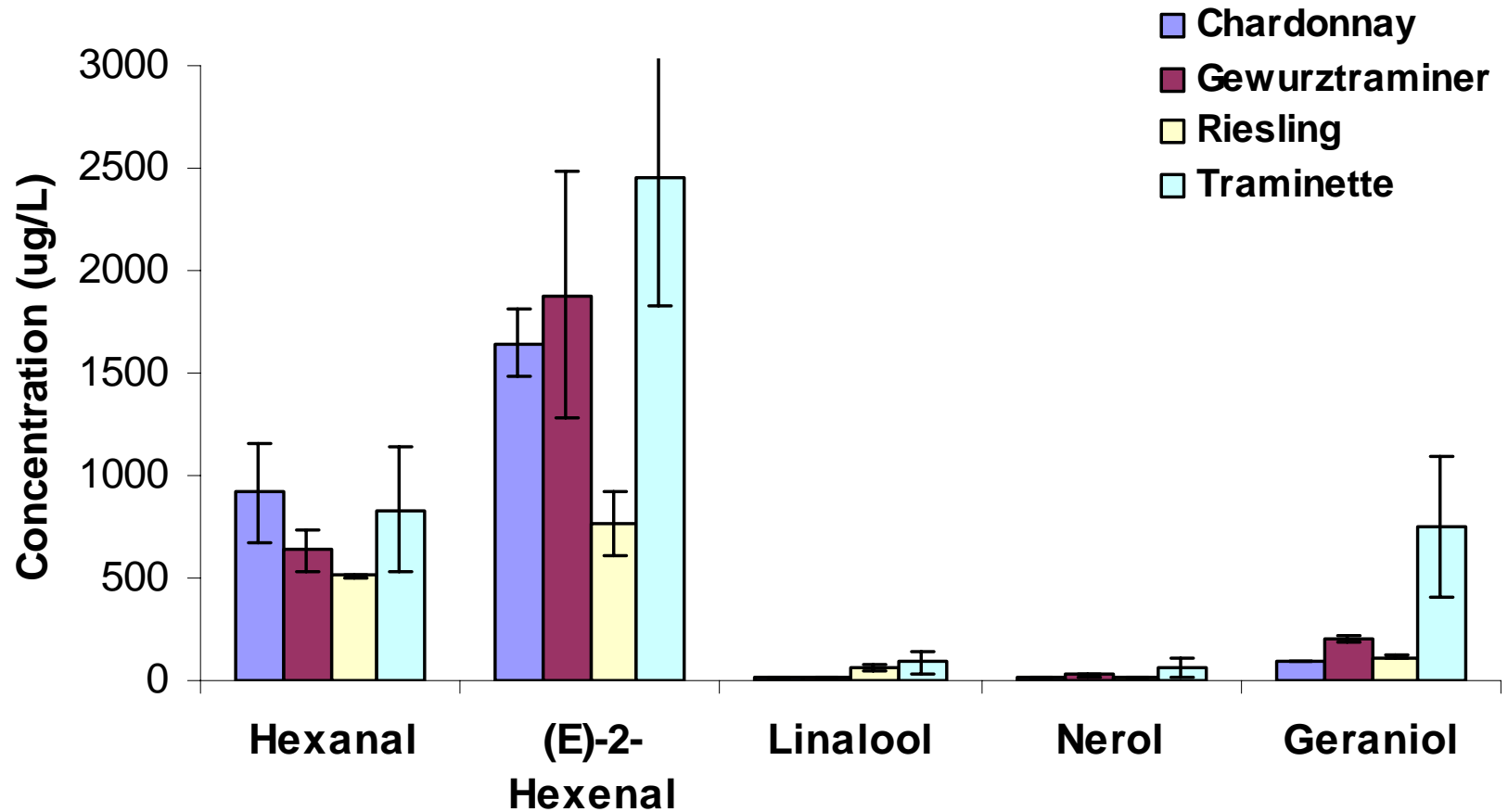
- Hexanal
- (E)-2-Hexenal
- 2-Octanol
- Linalool (100)
- Nerol (400-500)
- Geraniol (130)

Primary Odor*

Cut grass
Herbaceous
Internal Standard
Floral/muscat, Coriander
Floral, Rose-like
Floral, Rose-like

*Sources: *Am. J. Enol. Vitic.* 56:4:394-399 (2005); *S. Afr. J. Enol. Vitic.*, 4:2:49-58 (1983)

Volatile Compounds in Grapes (2006)

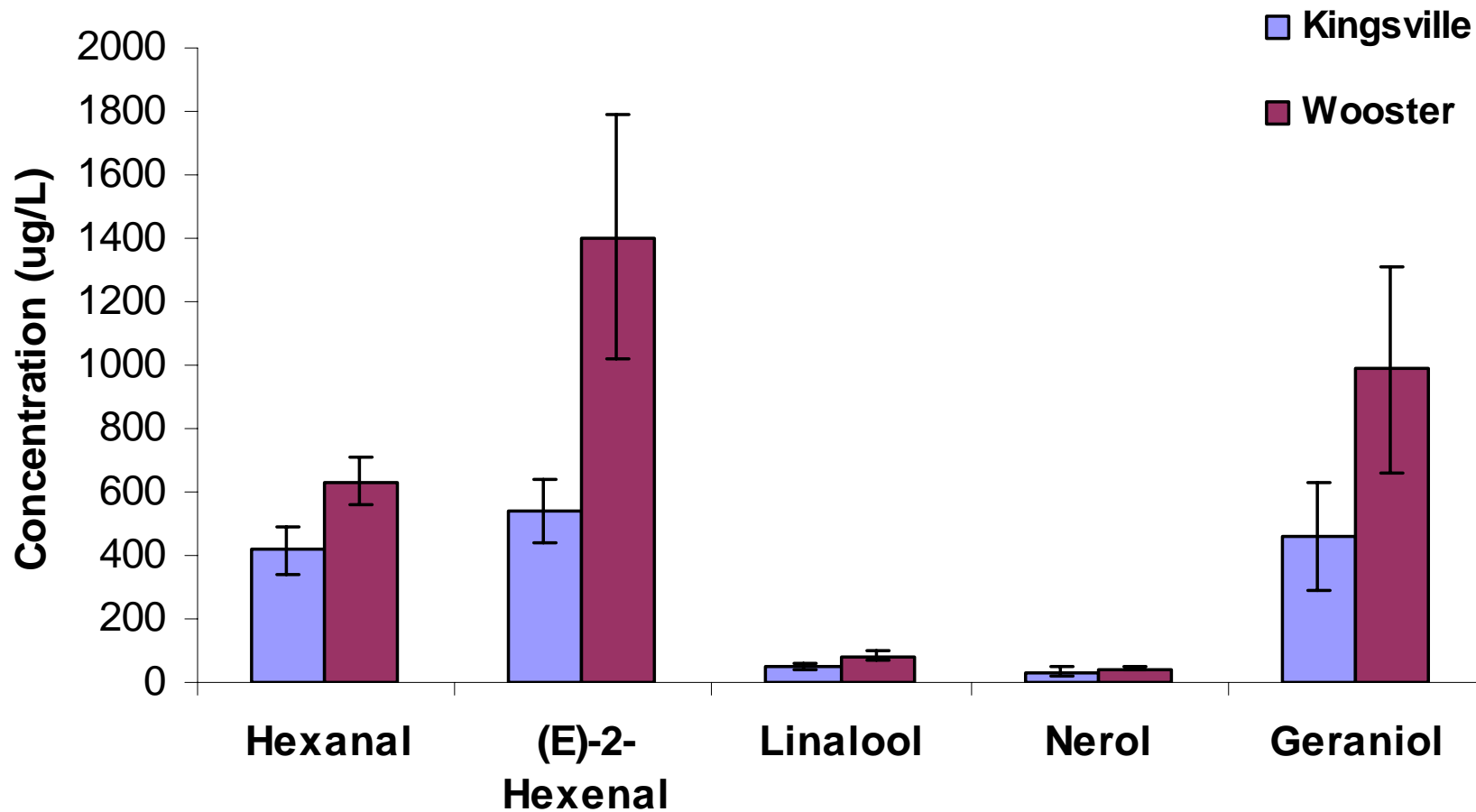


Traminette in Different Region

Yield and Fruit Compositions

Traminette (2005)	Cluster No.	Crop Wt. (lb)	100-Berry Wt. (g)	Brix	pH	TA %
Kingsville	72.0	18.4	197.2	20.2	3.3	0.7
Wooster	55.8	15.2	212.1	20.6	2.9	1.0

Free Volatiles in Traminette (2005)



Conclusions

- **Geraniol** is the most characteristic aroma compound in Traminette and was more abundant in a warmer site
- Aroma compounds presented can be used to characterize Traminette profile
- Study will be continued in 2007 from three different locations in Ohio with collaborating vineyards
- Ultimately, analysis of wine will be compared

Questions ?