

SMOKE ATTRIBUTE CARRYOVER AND FUNCTIONALITY OF RINSE SYSTEMS IN SENSORY ANALYSIS OF WILDFIRE AFFECTED WINES

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OBJECTIVE

Understand the temporality of smoke associated flavor attributes and evaluate the efficacy of different inter-stimulus rinse protocol for sensory evaluation of smoke affected wines

MATERIALS AND METHODS

This research was broken into 3 parts to fully understand the sensorial profiles and temporality of smoke flavor attributes. 3 wines made at the Washington State University Research Winery were used across all studies and were made to be representative of a highly, moderately, and no smoke affected wines

1. Check-all-that-apply (n=43)

- Evaluation of 18 attributes in 3 wines

2. Temporal Check-all-that-apply (n=48)

- Evaluation of 6 attributes in 3 wines over 180s

3. Fixed time point temporal evaluation (n=40)

- Evaluation of 6 attributes in 3 wines over 120s in 30s intervals
- 3 rinse systems used: Water, Pectin, Antibacterial mouthwash

Table 1: Summary of significance of random effects of all attributes according to ANOVA from fixed-time point intensity ratings

	Smoke Attributes			Non-Smoke Attributes		
	Ashy	Burnt	Smokey	Floral	Mixed Berry	Woody
Rinse	**	NS	*	*	***	NS
Time	***	***	***	***	***	***
Wine	***	***	***	***	***	***
Rinse*Time	NS	NS	NS	NS	*	NS
Wine*Time	***	***	***	***	***	NS

(NS) not significant; (*) significance, p<0.05; (**) significance, p<0.01; (***) significance, p<0.001

Rinse*Wine and Rinse*Wine*Time NS for all attributes

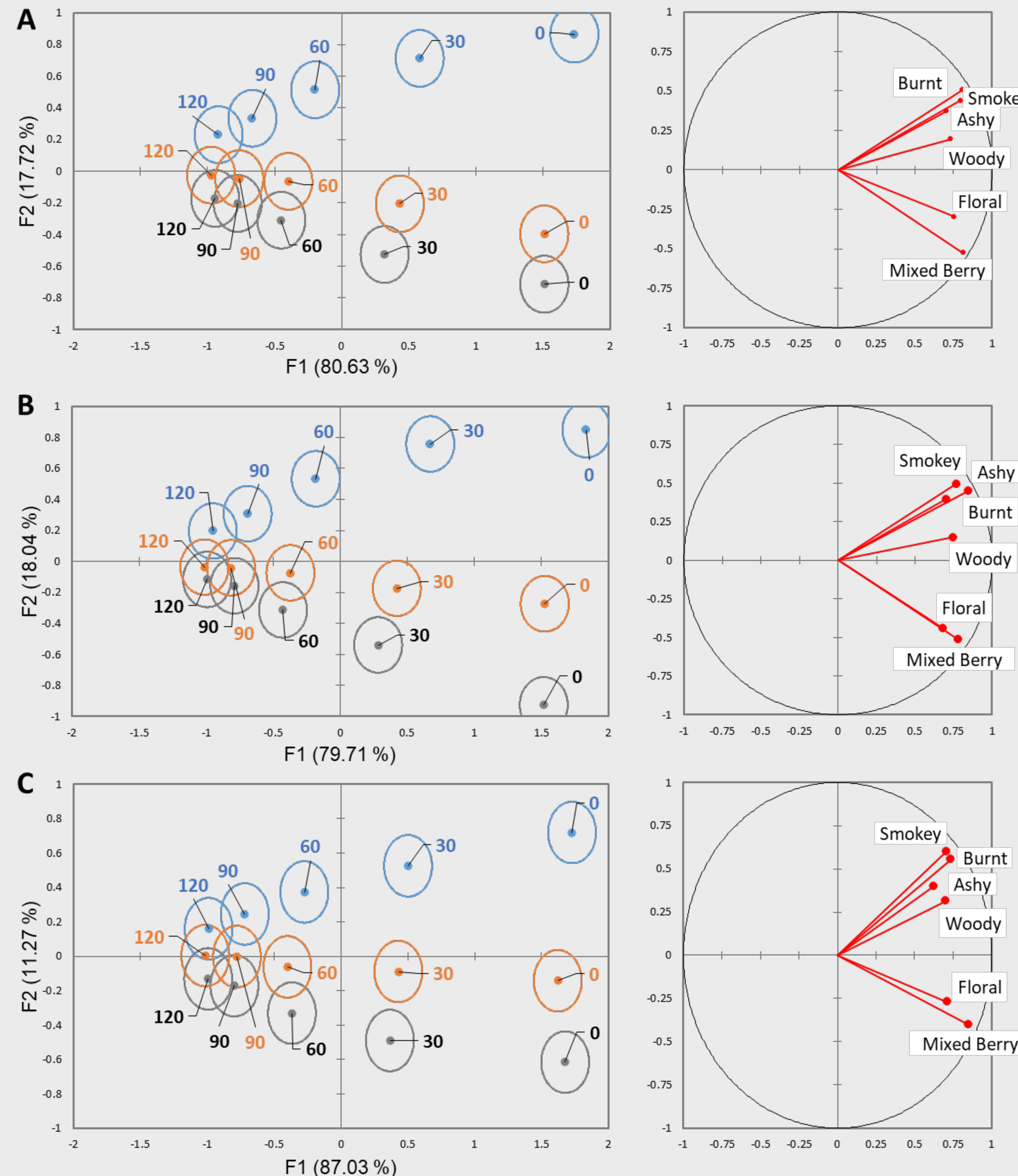


Figure 1: Separation of smoke wines, high (Blue), moderate (Orange), and none (Grey), at each 30 second interval based on discriminant analysis for each rinse system; (A) water, (B) pectin, and (C) mouthwash. Ellipses represent 95% confidence interval, around the means.

RESULTS

- High, moderate, and no smoke wines were differentiable based on the chosen attributes (Ashy, Burnt, Smokey, Floral, Mixed Berry, Woody)
- Rinses showed significant effect when looking at overall average intensities for ashy, smokey, floral, and mixed berry attributes (Table 1)
- Mouthwash showed overall lowering of smoke affected attributes and remedied the masking properties they had over the floral and mixed berry attributes
- With 120 s separation between samples, water was the only rinse to show potential carryover between sample position 1 and 3 within the sample sets
- ★ **Based on these results, it is recommended that a 1g/L pectin rinse followed by water should be used with 120 s separation of samples when evaluating smoke affected wines**

FUTURE WORK

- There may be more effective rinses that can lessen the time separation for more efficient analysis when solubility of smoke compounds are taken into consideration
- Further research into the extent of phenol glycoconjugate breakdown and sensorial impact needs to be conducted

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