

Supplemental Data for:

Danner L, Crump AM, Croker A, Gambetta JM, Johnson TE and Bastian SEP. 2018.

Comparison of rate-all-that-apply and descriptive analysis for the sensory profiling of wine.

Am J Enol Vitic 69:12-21. doi: 10.5344/ajev.2017.17052.

Supplemental Table 1 Attribute list for the descriptive analysis (DA) and Rate-All-That-Apply assessments for Study 1, including description and reference standards. The reference standards were used only for the DA.

Attribute	Description	Reference
Aroma/Flavor		
Tropical	Passionfruit, guava, pineapple, melon	5 g John West passionfruit pulp, 2 x 2 cm ² pineapple pieces, 10 mL Golden Circle Guava Nectar
Lychee	Fresh or canned lychee	2 lychees (Coles brand canned pitted lychees in syrup)
Citrus	Lemon, grapefruit	3 cm ² piece ruby grapefruit with skin
Red berry	Strawberry, raspberry	1 fresh strawberry
Cherry	Cherry or sour cherry	Sandhurst Amarena cherries in syrup
Dark berry	Blackcurrant, blackberry, mulberry, plum, blueberry	
Dried fruit	Quince paste, dried fig, fruit cake, sultana, and dried apricot	1 Tbsp Beerenberg quince paste, 2 cm ² piece Black & Gold dark fruit cake
Jammy	Preserved or cooked fruit	1 Tbsp Cottee's Fruits of the Forest jam
Confectionary	Strawberries and cream or red lollies	2 Allen's red raspberries
Floral	Violet, rose, hibiscus, and orange blossom	Alwadi Al Akhdar Sal orange blossom water
Honey	Honey, floral	2 Tbsp Buzz Honey Orange Blossom
Herbaceous	Grassy, tomato leaf, and capsicum	2 tomato stalks, 1 cm ² green capsicum
Oak	Oak, woody, saw dust	French oak chips (medium toast)
Sweet oak	Vanilla, chocolate, coffee, caramel, and nutty	1 square Lindt 85% dark chocolate, 20 mL 1% vanillin solution
Leather	Leather	3 cm x 1 cm piece tanned leather
Tobacco	Tobacco, cigar	Jose L. Piedra Petit Cazadores Cuba cigar, 5 g Erinmore Mixture pipe tobacco
Spice	Clove, cinnamon, nutmeg, mixed spice, mulled wine	5 g Masterfoods mixed spice, 3 cloves
Pepper	Black pepper	5 g black peppercorns
Earthy	Mushroom, dusty, beetroot	1 mushroom
Savory	Savory, meaty, soy sauce, black olive	10 mL Kikkoman soy sauce, 10 g Always Fresh sliced Kalamata olives
Taste		
Sweetness	Level of sweetness perceived	Low = 10 g/L sucrose in water, high = 25 g/L sucrose in water
Acidity	Level of acid perceived	Low = 0.5 g/L tartaric acid in water, high = 1.4 g/L tartaric acid in water
Bitterness	Level of bitterness perceived	Low = 6 mg/L quinine in water, high = 12 mg/L quinine in water
Mouthfeel		
Astringent	Sensation of drying or mouth puckering	Low = 0.5 g/L tannin in water, high = 1.5 g/L tannin in water (Laffort Nadine)
Alcohol/heat	Level of heat perceived due to ethanol content	High (14.5%) = 20.8 g/L ethanol (Tarac 96%) in red wine (Berri Estates Traditional Dry Red)
Body	Perceived weight of wine in the mouth	
Tannins	Tannin structure, e.g., coarse = fine-grade sand paper	

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Supplemental Table 2 Attribute list for the descriptive analysis in Study 2, including description and reference standards.

Attribute	Description	Reference
Appearance		
Green to yellow	Green to yellow	
Color intensity	Low to high	
Aroma	Perception when smelling the sample	
Tropical fruit	Any combination of tropical fruit	10 mL canned passionfruit (John West, Mentone, Australia) plus one slice of fresh pineapple
Passionfruit	Passionfruit aroma	10 mL canned passionfruit
Dried apricot	Dried apricot	2 slices of dried apricot
Citrus	Any combination of citrus fruit including lemon and lime	1 slice of lemon and lime
Floral/perfume	Any combination of flowers	1 mL/L rose water (Queen Fine Foods Pty. Ltd.) diluted in Yalumba Classic Dry White Cask wine
Grassy/green	Fresh cut grass	Fresh cut grass
Vanilla	Any of combination vanilla, coconut, caramel, brown sugar	0.5 mL/L vanilla essence (Queen Fine Foods Pty. Ltd.) diluted in Yalumba Classic Dry White Cask wine
Woody	Any of combination woody and oak flavors	Light toast oak chips in white wine
Butterscotch	Butterscotch, caramel	One crushed butterscotch
Honey	Honey	3 mL honey
Medicinal	Medicinal, Band-Aid	2 cm piece of Band-Aid
Kerosene/burned rubber	Any combination of kerosene, petrol, and burned rubber	Small piece of burned rubber
Flavor: taste and retro-nasal perception when tasting a sip of the sample		
Tropical fruit	Any combination of tropical fruit	
Passionfruit	Passionfruit	
Dried apricot	Dried apricot	
Citrus	Any combination of citrus fruit including banana	
Floral/perfume	Any combination of flowers	
Green/grassy	Fresh cut grass	
Vanilla	Any of combination vanilla, coconut, caramel, brown sugar	
Woody	Any of combination woody and oak flavors	
Butterscotch	Butterscotch, caramel	
Honey	Honey	
Medicinal	Medicinal, Band-Aid	
Kerosene/burned rubber	Any combination of kerosene, petrol, and burned rubber	
Sour	How sour is the wine?	
Sweet	How sweet is the wine?	
Bitter	How bitter is the wine?	
Overall flavor length	Duration of flavor perception after expectoration	
Mouthfeel: perception when tasting the wine		
Heat	How hot in terms of alcohol perception do you perceive this wine?	
Body	How would you describe the wine body in your mouth?	

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Supplemental Table 3 List of attributes and description for Study 2, presented to the consumer during the Rate-All-That-Apply study.

Attribute	Description
Appearance	
Brown	The color from that of pale cardboard through to intense dark chocolate
Clarity	The ability to see through the wine
Green	From a pale grass to an intense leafy green
Yellow	From a pale straw to a rich gold
Aroma: perception when smelling the sample	
Apple/pear	The scent of fresh cut apples and pears
Bubblegum	A sweet aroma like candies/lollies
Buttery	Rich dairy product from cows
Chemical	Cleaning products used in the home
Citrus	Lemon, orange, lime, grapefruit, and any other citrus fruits, or any combination of these
Dried fruit	Prune, date, sultana, and any other dried fruits, or any combination of these
Floral	Rose, jasmine, honeysuckle, and any other perfumed flowers, or any combination of these
Green/grassy	Freshly mowed/cut grass, green pepper/capsicum or any combination of these
Herbaceous	Basil, thyme, oregano, mint, and any other fresh garden herbs, or any combination of these
Honey	Honey
Milky	Odor of cow-based dairy products
Nutty	Almond, cashew, hazelnut, walnut, chestnut, any other nut, or any combination of these
Petroleum	Kerosene, gas station, petrol pump, or any combination of these
Spice	Licorice, star anise, fennel, cardamom, or any other spice used in cooking, or any combination of spices
Stone fruits	Peach and nectarine, or any combination of these
Sulfidic	Rubber, onion, egg, cabbage, or any combination of these
Toasted	Like fresh toast, grilled/hot bread, or a rich woody aroma
Tropical	Pineapple, passionfruit, mango, or any combination of these
Wood	Flavor of oak in wine, e.g., vanilla
Flavor: flavor perception when tasting the wine	
Apple/pear	Freshly cut apples and pears
Bitter	A harsh feeling like that given by flat tonic water or strong coffee
Butter	Rich dairy product from cows
Chemical	Cleaning products used in the home
Citrus	Lemon, orange, lime, grapefruit, and any other citrus fruits, or any combination of these
Dried fruits	Prune, date, sultana, and any other dried fruits, or any combination of these
Floral	Rose, jasmine, honeysuckle, and any other perfumed flowers, or any combination of these
Green/grassy	Freshly mowed/cut grass, green pepper/capsicum, or any combination of these
Herbaceous	Basil, thyme, oregano, mint, and any other fresh garden herbs, or any combination of these
Milky	Odor of cow-based dairy products
Mineral	Stoney, chalky feeling in wines without strong tannin/astringency
Nutty	Almond, cashew, hazelnut, walnut, chestnut, any other nut, or any combination of these
Salt	Basic taste of salt
Savory	Preserved meats like pastrami, salami, sausage or any combination of these
Sour	Basic taste of sour
Spice	Licorice, star anise, fennel, cardamom, or any other spice used in cooking, or any combination of spices
Stone fruits	Peach and nectarine, or any combination of these
Sulfidic	Rubber, onion, egg, cabbage, or any combination of these
Sweet	Presence of sugar
Toasted	Like fresh toast, grilled/hot bread, or a rich woody aroma
Tropical	Pineapple, passionfruit, mango, or any combination of these
Woody	Vanilla or the flavor of oak in wine
Length	The time which the flavor/feeling of the wine persists in the mouth
Mouthfeel: perception of the wine. How does the wine feel in your mouth?	
Body	The weight or thickness of the wine in the mouth
Creamy	A feeling of smoothness, like cream
Crisp	A quick finish like a fresh apple
Dry	The presence of astringency
Spritz	The feeling of bubbles or sparkle in the mouth
Watery	The absence of weight or thickness of the wine in the mouth