

The Beer and Wine Flavor Wheels

If the first step to training your palate is learning to identify individual flavors, the second step is describing them. Unfortunately, not only are flavor and aroma descriptions inherently based on shared cultural references, there is no simple physical principle on which they can be organized. Without a means to objectively describe scents and tastes, novice judges fall back on useless adjectives like “good,” “nice,” “poor,” or “bad.” Fortunately, there are several “flavor wheels” which aid judges in describing their perceptions.

The flavor wheel for beer was developed by Martin Meilgaard in 1971. It is an actual wheel, with numerical categories for each of the Flavor, Aroma and Mouthfeel categories and arrows showing the way that those three categories overlap. I have converted it into a table, as shown below.

The Beer Flavor/Aroma/Mouthfeel Wheel

Category	Description (Synonyms)	Odor	Taste	Feel
Aromatic, Fragrant, Fruity, Floral	Alcoholic	*	*	*
	Solvent-like (plastic, can-liner, lacquer)	*	*	
	Estery (banana, apple, fruity)	*	*	
	Fruity (citrus, berry, melon, . . .)	*	*	
	Acetaldehyde (fresh cut green apples)	*	*	
	Floral (roses, geranium, perfume)	*	*	
	Hoppy	*	*	
Resinous, Nutty, Green, Grassy	Resinous (sawdust, resin, cedar, pine, spruce)	*	*	
	Nutty (sherry-like: walnut, coconut, beans, almond)	*	*	
	Grassy (fresh-cut grass, straw)	*	*	
Cereal	Grainy (raw grain, husk-like, corn grits, flour)	*	*	
	Malty	*	*	
	Worty (fresh-wort aroma)	*	*	
Caramelized, Roasted	Caramel (burnt-sugar: toffee, molasses, licorice)	*	*	
	Burnt (burnt-bread)	*	*	*
Phenolic	Phenolic (tarry, bakelite, carbolic, pharmaceutical)	*	*	
Soapy, Fatty, Diacetyl, Oily, Rancid	Fatty Acid (tallowy, goaty, cheesy, rancid butter)	*	*	
	Diacetyl (buttermilk, butterscotch)	*	*	
	Rancid (rancid oil)	*	*	
	Oily (vegetable oil, gasoline, machine oil)	*	*	*
Sulfury	Sulfury (rotten egg)	*		
	Sulfitic (burnt-match, choking, burnt rubber)	*		
	Sulfidic (sewage, natural gas)	*		
	Cooked Vegetable (overcooked greens, cooked corn)	*	*	
	Yeasty (fresh yeast, meaty)	*	*	
Oxidized, Stale, Musty	Stale (old beer)	*	*	*
	Catty (skunky beer)	*	*	
	Papery (cardboard)	*	*	
	Leathery	*	*	
	Moldy (earthy, musty)	*	*	
Sour, Acidic	Acidic (pungent, sharp)	*	*	
	Acetic (vinegar)	*	*	
	Sour (lactic, sour milk)	*	*	
Sweet	Sweet (syrupy)	*	*	
Salty	Salty		*	
Bitter	Bitter (harsh, dry)		*	*
Mouthfeel	Alkaline		*	*

	Mouthcoating (creamy)		*	*
	Metallic (coins, iron, rusty water, tinny)	*	*	*
	Astringent (mouth-puckering, tannin-like, tart)		*	*
	Powdery (dusty, chalky, particulate)	*	*	*
	Carbonation (flat/undercarbonated, gassy/overcarbonated)		*	*
	Warming (alcoholic)		*	*
Fullness	Body (watery, characterless, satiating, thick)	*	*	*

An even more complex version of this table is given below:

Recommended Descriptors of Beer Flavor

Class	Term	Odor	Taste	Mouthfeel	Relevance, Comments/synonyms/definitions
01	Aromatic, Fragrant, Fruity, Floral			W: Warming Af: Aftertaste	
0110	Alcoholic	*	*	*	The general effect of ethanol and higher alcohols
0111	Spicy	*	*	*	Allspice, nutmeg, peppery, eugenol. See also 1003 Vanilla
0112	Vinous	*	*	*	Bouquet, fusel alcohols, wine-like (White wine)
0120	Solvent-like	*	*		Like chemical solvents
0121	Plastics	*	*		Plasticizers
0122	Can-liner	*	*		Lacquer-like, Trash Bag
0123	Acetone	*	*		
0130	Estery	*	*		Like aliphatic esters
0131	Isoamyl acetate	*	*		Banana, peardrop
0132	Ethyl hexanoate	*	*		Apple-like with note of aniseed. See 0142 Apple
0133	Ethyl acetate	*	*		Light fruity, solvent-like. See also 0120 Solvent like
0140	Fruity	*	*		Of specific fruits or mixtures of fruits
0141	Citrus	*	*		Citral, grapefruit, lemony, orange-rind
0142	Apple				
0143	Banana				
0144	Blackcurrant	*	*		Blackcurrant fruit. For Blackcurrant leaves use 0810 Catty
0145	Melony	*	*		
0146	Pear	*	*		
0147	Raspberry	*	*		
0148	Strawberry	*	*		
0150	Acetaldehyde	*	*		Green apples, raw apple skin, bruised apples
0160	Floral	*	*		Like flowers, fragrant
0161	Phenylethanol	*	*		Rose-like
0162	Geraniol	*	*		Rose-like, different from 0161. Taster should compare the pure chemicals
0163	Perfumy	*	*		Scented
0170	Hoppy	*	*		Fresh hop aroma. Use with other terms to describe stale hop aroma. Does not include hop bitterness (See 1200 Bitter)
0171	Kettle-hop	*	*		Flavor imparted by aroma hops boiled in the kettle.
0172	Dry-hop	*	*		Flavor imparted by dry hops added in tank or cask.

0173	Hop oil	*	*		Flavor imparted by addition of distilled hop oil.
02	Resinous, Nutty, Green, Grassy				
0210	Resinous	*	*		Fresh sawdust, resin, cedar wood, pine wood, spruce, terpenoid.
0211	Woody	*	*		Seasoned wood (uncut)
0220	Nutty	*	*		As in Brazil-nut, hazelnut, sherry-like
0221	Walnut	*	*		Fresh (not rancid) walnut
0222	Coconut				
0223	Beany	*	*		Bean soup
0224	Almond	*	*		Marzipan
0230	Grassy				
0231	Freshly-cut grass	*	*		Green, crushed green leaves, leafy, alfalfa.
0232	Straw-like	*	*		Hay-like
03	Cereal				
0310	Grainy	*	*		Raw grain flavor
0311	Husky	*	*		Husk-like, chaff, "Glattwasser"
0312	Corn grits	*	*		Maize grits, adjuncty
0313	Mealy	*	*		Like flour
0320	Malty	*	*		
0330	Worty	*	*		Fresh wort aroma. Use with other terms to describe infected wort, e.g. 0731 Parsnip
04	Caramelized, Roasted				
0410	Caramel	*	*		Burnt sugar, toffee-like
0411	Molasses	*	*		Black treacle, treacly
0412	Licorice				
0420	Burnt	*	*	*	Scorched aroma, dry mouthfeel and sharp acrid taste.
0421	Bread-crust	*	*	*	Charred toast
0422	Roast-barley	*	*	*	Chocolate malt
0423	Smoky	*	*		
05	Phenolic				
0500	Phenolic	*	*		<i>scorched</i>
0501	Tarry	*	*		Pitch, faulty pitching of containers
0502	Bakelite				
0503	Carbolic	*	*		Phenol
0504	Chlorophenol	*	*		Trichlorophenol (TCP), hospital-like
0505	Iodoform	*	*		Iodophors, hospital-like, pharmaceutical
0610	Fatty acid				
0611	Caprylic	*	*		Soapy, fatty, goaty, tallowy
0612	Cheesy	*	*		Dry, stale cheese, old hops. Hydrolytic rancidity
0613	Isovaleric	*	*		Dry, stale cheese, old hops. Hydrolytic rancidity
0614	Butyric	*	*		Rancid butter
0620	Diacetyl	*	*		Butterscotch, buttermilk
0630	Rancid	*	*		Oxidative rancidity
0631	Rancid oil	*	*	*	Oxidative rancidity
6	Soapy, Diacetyl, Rancid Fatty, Oily,				

0640	Oily				
0641	Vegetable oil	*	*	*	As in refined vegetable oil
0642	Mineral oil	*	*	*	Gasoline (petrol), kerosene (paraffin), machine oil
7	Sulphury				
0700	Sulphury	*	*		
0710	Sulphitic	*	*		Sulfur dioxide, striking-match, choking, sulfurous, sulfur dioxide (SO ₂), burnt rubber
0720	Sulphidic	*	*		Rotten egg, sulfury-reduced, sulphurous-RSH, <i>sewage, natural gas</i>
0721	H ₂ S (Hydrogen Sulfide)	*	*		Rotten egg
0722	Mercaptan	*	*		Lower mercaptans, drains, stench
0723	Garlic	*	*		
0724	Lightstruck	*	*		Skunky, sunstruck
0725	Autolysed	*	*		Rotting yeast (see also 0740 Yeasty)
0727	Shrimp-like	*	*		Water in which shrimp have been cooked
0730	Cooked vegetable	*	*		Mainly dialkyl sulphides, sulphurous-RSR
0731	Parsnip/celery	*	*		An effect of wort infection, <i>overcooked greens</i>
0732	DMS	*	*		Dimethyl sulphide, <i>cooked corn</i>)
0733	Cooked tomato	*	*		Tomato juice (processed), tomato ketchup
0736	Cooked onion	*	*		
0740	Yeasty	*	*		Fresh yeast, flavor of heated thiamine (see also 0725 Autolysed)
0741	Meaty	*	*		Brothy, cooked meat, meat extract, peptone, yeast broth
08	Oxidized, Stale, Musty				
0800	Stale	*	*	*	Old beer, overaged, overpasteurized
0810	Catty	*	*		Blackcurrant leaves, ribes, tomato plants, oxidized beer, skunky
0820	Papery	*	*		An initial stage of staling, bready (stale bread crumb), cardboard, old beer, oxidized
0830	Leathery	*	*		A later stage of staling, then often used in conjunction with 0211 Woody
0840	Moldy	*	*		Cellar-like, leaf-mold, woody
0841	Earthy	*	*		Actinomycetes, damp soil, freshly dug soil, diatomaceous earth
0842	Musty	*	*		Fusty
09	Sour, Acidic				
0900	Acidic	*	*		Pungent aroma, sharpness of taste, mineral acid
0910	Acetic	*	*		Vinegar
0920	Sour	*	*		Lactic, sour milk, Use with 0141 for citrus-sour
10	Sweet				
1000	Sweet	*	*		
1001	Honey	*	*		Can occur as an effect of beer staling, e.g. the odor of stale beer in a glass, oxidized (stale) honey
1002	Jam-like	*	*		May be qualified by sub-classes of 0140 Fruity
1003	Vanilla	*	*		Custard powder, vanillin
1004	Primings				
1005	Syrupy	*	*	*	Clear (golden) syrup

1006	Oversweet	*	*	*	Sickly sweet, cloying
11	Salty				
1100	Salty		*	*	
12	Bitter				
1200	Bitter		*	Af	
13	Mouthfeel				
1310	Alkaline		*	Af	Flavor imparted by accidental admixture of alkaline detergent
1320	Mouthcoating		*	Af	Creamy, “onctueux”
1330	Metallic	*	*	Af	Iron, rusty water, coins, tinny, inky
1340	Astringent			Af	Mouth puckering, puckery, tannin-like, tart
1341	Drying			Af	Unsweet
1350	Powdery	*	*	*	Chalky, particulate, scratchy, silicate-like, siliceous. Dusty cushion, irritating (with 0310 Grainy) mill room smell.
1360	Carbonation			M	CO2 content
1361	Flat			M	Under carbonated
1362	Gassy			M	Over carbonated
1370	Warming			Af	See also 0110 Alcoholic and 0111 Spicy
14	Fullness				
1410	Body	*	*	*	Fullness of flavor and mouthfeel
1411	Watery		*	*	Thin, seemingly diluted
1412	Characterless	*	*	*	Bland, empty, flavorless
1413	Satiating	*	*	*	Extra-full, filling
1414	Thick		*	*	Viscous, “Epais”

Wine Tasters use the following table. Many of the categories and terms used overlap with beer, making it a handy addition to the standard Beer Flavor Wheel.

The Wine Aroma Wheel

Floral	Floral	Linalool
		Orange blossom
		Rose
		Violet
		Geranium
Spicy	Spicy	Cloves bouquet
		Black pepper
		Licorice, anise
Fruity	Citrus	Grapefruit
		Lemon
	Berry	Blackberry
		Raspberry
		Strawberry
		Black currant/cassis
	Tree Fruit	Cherry
		Apricot
		Peach
		Apple
	Tropical Fruit	Pineapple bouquet
		Melon

	Dried Fruit	Banana
		Strawberry jam
		Raisin
		Prune
		Fig
	Other	Artificial fruit
		Methyl anthranilate
Vegetative	Fresh	Stemmy
		Cut green grass
		Bell pepper
		Eucalyptus
		Mint
	Canned/Cooked	Green beans
		Asparagus
		Green olive
		Black olive
		Artichoke
	Dried	Hay/straw
		Tea
		Tobacco
Nutty	Nutty	Walnut bouquet
		Hazelnut
		Almond
Caramelized	Caramelized	Honey
		Butterscotch
		Butter/diacetyl
		Soy sauce
		Chocolate
Woody	Phenolic	Phenolic
		Vanilla
	Resinous	Cedar
		Oak
	Burned	Smoky
		Burnt toast/charred
		Coffee
Earthy	Earthy	Dusty
		Mushroom
	Moldy	Musty/mildew bad
		Moldy cork
Chemical	Petroleum	Tar
		Plastic
		Kerosene
		Diesel
	Sulfur	Rubbery
		Hydrogen sulfide
		Mercaptan
		Garlic
		Skunk
		Cabbage

		Burnt match
		Sulfur dioxide
		Wet dog
	Papery	Filter pad
		Cardboard
	Pungent	Ethyl acetate
		Acetic acid
		Ethanol
		Sulfur dioxide
	Other	Fishy
	Soapy	
	Sorbate	
	Fusel alcohol	
Pungent	Hot	Alcohol
	Cool	Menthol
Oxidized	Oxidized	Acetylaldehyde/sherry
Microbiological	Yeasty	Flor yeast
		Leesy
	Lactic	Sauerkraut
		Butyric acid
		Sweaty
		Lactic acid
	Other	Horsey
Mousey		

References

Tasting Beer (<http://www.alabev.com/taste.htm>)

Beer Flavor Log (<http://brewery.org/brewery/library/FlavW.html>)

Wine Evaluation Chart (<http://Swww.americanwinesociety.com/web/downloads/Wine%20Evaluation%20Chart.pdf>)

Flavor Wheels of the World (<http://www.eblong.com/zarf/flavorwheel.html>)