

<b>BEER TROUBLESHOOTING GUIDE - Rev.1</b>		<b>by Ron Cooper</b>		
<b>PROBLEM</b>	<b>DESCRIPTION OF FLAVOR/PROBLEM</b>	<b>WORT PREPARATION</b>	<b>FERMENTATION</b>	<b>BOTTLING /STORAGE</b>
Acetaldehyde	Green Apples /Grass /Green Leaves /Acetic-cider	Bacteria	Premature Removal from Yeast	Oxidation /Short Lagering
Alcoholic - Ethanol, low		Low Original Gravity	Incomplete /Yeast problem	
Alcoholic - Ethanol, high	Spicy / Vinous /Warm or Prickly Mouthfeel	High Original Gravity	XS Attenuation /Wild Yeast	
Alcoholic - Fusel Alcohols	Vinous flavor /Harsh, Clinging Bitterness	High Original Gravity /Low Wort Aeration	High Temp. /Under Pitching /Low Aeration /Wild Yeast /Yeast Strain	
Astringent	Primarily Mouth feel Pungent /Alkaline /Metallic	Over-crushed Grain /Over Sparge or too Hot or High pH /Lack of non- fermentable sugars /XS Hops	Bacteria /Wild Yeast /XS Attenuation	Bacteria
Bitterness - excessive	Hoppy + "Edge"	Over Hopping /Roasted Malts /High Mg++ or SO4--	Wild Yeast	
Body - High	Satiating /Thick	High Non-fermentables	Low Aeration	
Body - low	Watery /Characterless	Low Saccharification Temp./Low Malt Rx /XS Protein Rest Time/Temp /XS Adjuncts	High Attenuation	
Carbonation - too much		Excess salts or iron	Bacteria	Bacteria /excess priming
Carbonation - too little	Includes low Retention	Low Malt/Protein content /XS Protein Rest Time/Temp /Low Original Gravity		Surfactants present
Diacetyl	Butterscotch /Toffee /Slick Taste	High Adjunct Levels	High Fermentation Temp. /Air Exposure /Early Cooling /Bacteria (incl. Lactic Acid/Pediococcus)	
Dimethyl Sulfide (DMS)	Cooked Corn /Celery /Shellfish /Oyster	Bacteria /Poor Boil (closed) /Slow Wort Cooling	Bacteria /Low Pitch Rate /Wild Yeast /Lack of Aeration	
Fatty Acids	Soapy /Rancid	High Original Gravity	High Temp. /High Aeration /Type of Yeast /High Pitch Rate	
Fruity - Estery	Banana / Grapefruity /Other Fruit	High Original Gravity	High Temp. /High Aeration /Type of Yeast /High Pitch Rate	
Grassy	Fresh Cut Grass /Green Leaves	Old Malt /Poor Malt Storage (Damp), especially if Ground		
Gushing	Extreme Foam Production	Infection	Infection	Over Priming
Husky - Grainy	Spent Grains /Harsh, Unpleasant	Over Crushing /Mash too long /Over Sparge or too Hot or High pH /Burn during Decoction		
Lightstruck (Skunky)	Skunk Odor			Light exposure /Green or Clear Bottles

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Metallic	Especially Iron /Rusty Nail	Use of Iron Equipment /Poor Raw Materials /High Fe, Zn Ion Concn.		
Methional	Meaty /Broth-like	Malt Variety	Low Temp.	
Moldy	Cellar-like /Damp Earth /Rank Cabbage	Fungi Contamination of Malt	Unsanitary Fermenter /2ndary in Damp Area	Contaminated Bottles /Old Beer
Musty /Oxidation	Stale Aroma /Taste (see Oxidation/Musty)	Hot side Aeration in Mash or Boil /Damp Malt		Air Exposure in Racking or Bottling
Nutty	Brazil or Hazel Nuts /Sherry-like			Aeration in Bottling /Oxidation /High Temp. in Storage
Oxidation /Musty	(1)Cardboard /Wet Paper (Aroma & Taste) (2) Sherry /Winey /Toffee (3)Rotten Pineapple- Garbage (4)Stale/Rancid/Aged	Hot side Aeration in Mash or Boil	High Temp. during Fermentation /Air Exposure	Low Fill /Aeration in Bottling /High Temp. in Storage
Phenols	Medicine Chest /Band Aids /Spicy / Clove	Civic Water Supply /Overcrushing /Contaminated with Cl- Sanitizer /Over Sparge or too Hot or High pH	Yeast Strain /Wild Yeast /Contaminated Yeast /Contaminated Plastic Fermenter	
Polymers - Sugars/Proteins	"Rope" - Jelly-like Strands		Lactic or Acetic Bacteria Infection	
Protein Particles	Haze When Cold only	Not cooled enough before Fermentation	High Temp. during Fermentation	Too cold Storage /Serving Temp
Salty	Rocksalt, Table Salt	Water Supply /XS Salt added		
Sherry - like	See Oxidation / Nutty			
Solvent - Like	Pungent Aroma + Burning on Tongue /Palate	Low Wort Aeration /Bacteria /Non-food Grade Plastic Eq.	Under Pitching /Bacteria /Wild Yeast /Yeast Type /Yeast Autolysis /High Temp /Ferm. on Trub	Warm Storage
Sour - Acidic	Sour /Tart /Vinegar (Aroma & Taste)	Post-Mash Temp not kept > 160 deg. F	Bacteria /Airborne Infection	
Starch Particles	Haze (Stable)	Incomplete Conversion / High Sparge Water Temp		
Sulfery - Yeasty, H2S	Rotten Eggs /"Natural" Gas /Skunky /Rubbery	Use of Campden Tablets /Air or Water Contamination	Yeast Strain /Bacteria /Yeast Autoysis	Lightstruck
Sweet	Sugar /Malt Extract	XS Non-fermentables /High Original Gravity /Mash Time /Temp.	Poor Attenuation /Lack of Aeration /Short Ferm. Time /Yeast Strain /Infection	
Vegetal	Cooked Corn /Cabbage /Broccoli (Mostly Odor)	Poor Malt /Bacteria	Bacteria /Contaminated Yeast	