

CHOCOLATE FLAVOR CHEMISTRY

1A

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Major Food Constituents Have No Flavor

Proteins + Carbohydrates + Fats = 0 Flavor Compounds

BUT

Amino acids + Sugars + Fatty Acids = Tens of Flavor Compounds

(sweet, bitter, sour, salty, savory, rancid, ...)

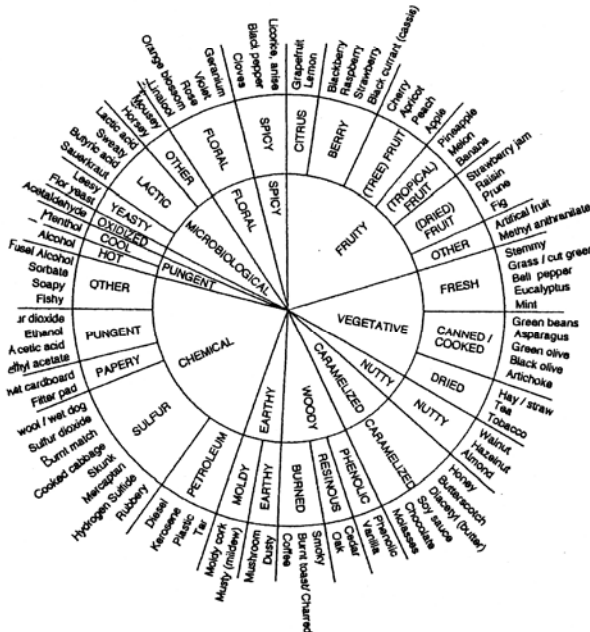
High Temperatures Generate Flavor

Proteins + Carbohydrates + Fats + 250-500°F => LOTS of Flavor Compounds

Amino acids + Sugars + Fatty Acids + 250-500°F => EVEN MORE Flavor Compounds

Fermentation Generates Flavor

Grapes + Yeast =>



from Noble, A. C., Arnold, R. A., Buechstein, J., Leach, E. J., Schmidt, J. O., & Stern, P. M. (1987).
Modification of a standardized system of wine aroma terminology.
American Journal of Enology and Viticulture, 38(2), 143 - 146

Fermentation and High Temperatures Generate Chocolate Flavor

Cacao Beans = Protein + Carbohydrate + Fat + Caffeine + Tannins = bitter + astringent

Cacao Beans + 250–300°F => mildly nutty + bitter + astringent

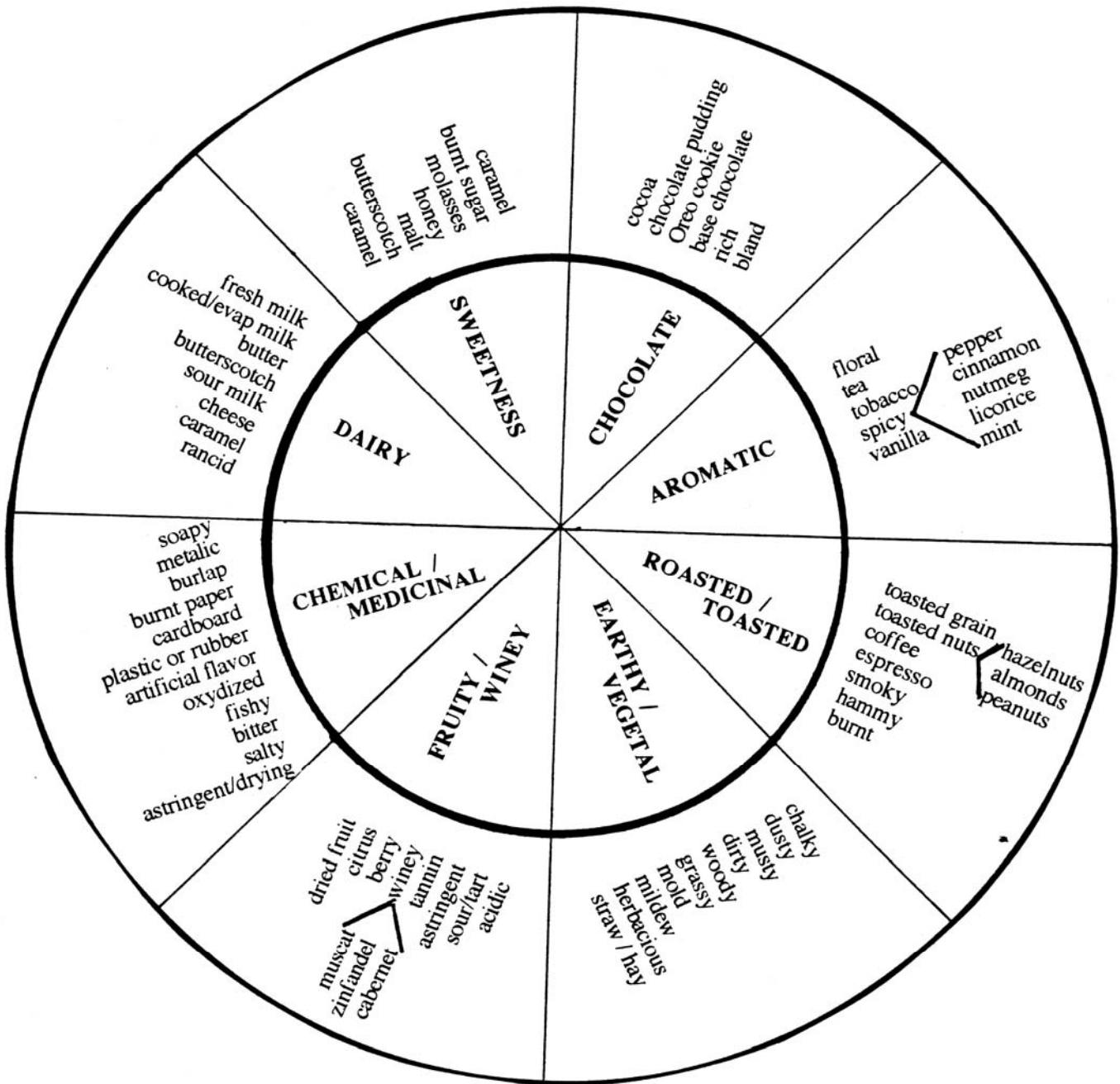
Cacao Fruits + Yeasts + Bacteria + Sun + 250–300°F => CHOCOLATE

(Hundreds of Flavor Compounds)

Cacao is fermented in widely varying conditions on thousands of small plantations: so an essential prerequisite for high-quality chocolate is careful selection for well-fermented beans.

CHOCOLATE FLAVOR AND AROMA WHEEL

Alice Medrich 1997



TEXTURE / MOUTHFEEL

powdery
gritty
grainy
sandy

creamy
smooth
greasy
slimy

even melt
velvety
soft

sticky
gummy
chewy
cakcy

waxy
brittle
hard snap

The chocolate wheel above was based on a similar wheel called "Flavor Characteristics of Chocolate" copy right 1991 by Guittard Chocolate company