

A TASTE OF
RADICAL BREWING
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Southern California Homebrewers Festival 2004
A Taste of Radical Brewing

Intro

Every conceivable ingredient used through history
Industrialization
Hops made beer:
 Cheaper/weaker
 Portable
 Longer aging possible
 Strategic and business advantage
Not one mention of how much better it made the beer taste
Laws like Reinheitsgebot
 More to do with monopolies, taxation
 Protective, but a bad side, too

Present some ingredients and seasonings

 Some familiar
 Some not
 Quality important
 You're spending all this time already...
Shred some misconceptions & taboos
Point out some useful details
Give you a few new ideas
 New tools in your kit

Sugar

We've all learned to look down on it
 Corn sugar and beer kits
Mostly not so good, but...
Historical place in brewing
 Just 300 years (or so) old
 Colonial products (in Europe)
 Source of cheap extract
Gourmet sugars = really good flavors
Refining process proceeds in stages
 From raw juice to pure crystallized sucrose
Two forms best for brewers
 Molded "concrete" sugars
 Granular in residue (molasses) matrix, other brown crystals
Flavorful, affordable (buck a pound)
Wide range of flavors
 Creamy, maply, rummy, molasses-like, caramelly
Cooked sugars also
 Similar (but different) to Maillard flavors & aromas in beer
 Used in many Belgian beer

Why sugar?

 Thins body
 Best for stronger beers
 Dubbels, triples
Add gravity to superstrong beers

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- Barley wines
- Hi-grav experimental beers
- Good varieties add flavor of their own
- Color--Caramel
 - Chouffe
 - Flanders red ales
 - Faro
- Lo-carb (for medical reasons only)

- Belgian candy sugar
 - Actually quite pure
 - Crystallization = purification
 - pretty much the same as grocery store sugar
 - Save the \$5/lb, buy yourself a pint...
 - NOT the same as candijsuiker/sucre candi
 - In old recipes, this means caramel
 - Taste

- Canela/Piloncillo
 - Sugar cane
 - Colombia, El Salvador
 - Poured into molds
 - Range of colors and flavors

- Panocha
 - Philipino cane sugar
 - Pale, soft, creamy, caramelly

- Granular sugars
 - Turbinado, demerara
 - Easy-to-get, good quality
 - Barbados
 - Super high quality
 - Very clean, deep, rummy
 - Muscovado
 - Super-quality brown sugar
 - Soft molasses character
 - Louisiana
 - Light brown color
 - Mild, tangy brown sugar flavor

- Jaggery
 - aka "gur"
 - Palm sugar
 - Indian markets
 - Tapped from immature flower blossoms
 - Juice made into wine--toddy
 - Pale & creamy
 - Not molasses-like
 - More maply
 - Great for triples
 - Some history of use in IPAs (after 1847)

- Kaong
 - Philipino version of jaggery
 - Wrapped in banana leaves

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Cooked sugars

Caramel

Either Maillard

Sugar + nitrogen + aroma + color
Range of familiar rich caramel flavor
Same reaction as malt kilning, wort boiling

Or not

Browned sugar
Toasted marshmallow

Technically...

Four classes of caramel
Suited for various uses
pH, alcohol, sulphites, etc
Class III for beer
Made by heating invert sugar with 2% ammonium compound
Ammonium phosphate (yeast nutrient) works fine
9 grams/lb of sugar (minus water)

Made by heating

Heavy saucepan
Lyle's Golden Syrup = invert sugar
A bit of water to help dissolve
Don't stir more than necessary
Once color starts to change, watch carefully
They taste darker than they look

Taste: Plain cane sugar

Several colors
Toasted marshmallow flavors
Lyles + Ammonium phosphate
More caramelly, although still cooked sugar flavor
Cooked honey
Largely invert sugar
Delicious!

Spices

All the way back to the beginnings of civilization

Treasured, traded, kept secret

Viewed as medicine or magic

Beer, wine common delivery vehicles

Metheglin/medicine

Extra kick for beer

Mandrake in Egypt

Sekhmet

Henbane in German Middle Ages

The original pilsener--bilsener

Pre-industrial England

Cocculus indicus--picrotoxin (stimulant)

Opium

Bitter bean (strychnine)

Middle East (in Bible):

Anise, cumin, sweet flag, caraway, cassia cinnamon, coriander, juniper, mint,
nettles, saffron, thistles & wormwood

Bronze Age Northern Europe

Bog Myrtle/sweet gale

Juniper

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Heather
Meadowsweet
Wild rosemary/Ledum palustre
Beserkers

The fruit ages
Bog myrtle, wild rosemary, yarrow
Plus other spices
Secret compound, usually mixed w/ grain
Monopoly of church or state
Wild rosemary (Ledum palustre) unsafe
Stimulant: andromedotoxin

Jolly old England
Many herb and spiced beers
Ginger, coriander, licorice, G of P, capsicum, orange peel, broom, wormwood
“Outlaw” Germany
North not subject to Reinheitsgebot until 1877
Coriander, wormwood, gentian

In America
Ingredients limited
Poem: If barley be wanting to make into malt
We should be content and think it no fault
For we can make liquor to sweeten our lips
Of pumpkins and parsnips and walnut tree chips
Wood sage as bittering--not recommended!
Pennsylvania Dutch beer: Swankey
Seasoned with anisseed

Belgium
Spices are the twinkle in the brewmaster's eye

Now, us!
Started with Christmas ales
Now, anything goes!
Mint porter tasted here a few years back

How to use?
Last 5 min of boil
As dry hop
May be tied in bag
Potions
Soaked in vodka or liqueur
Added at priming
Teas
Added in secondary or at priming
Spice smoke
Inspired by Jamaican jerk cooking
Taste!
Freshness counts
Go for complexity
Grind it yourself

Woodruff
Woodland perennial—waldmeister
Flavor develops on drying
Beautiful, complex aroma
Used in wine (Maywine)
Also as syrup for Berliner weissbier
Likely a beer herb in the past

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Chamomile

Small flowers
Fruity (Juicyfruit) aroma
“secret spice” for witbier

Coriander

Long history in beer in Northern Europe
Said to make the beer taste fuller
Problems with some types
 Too vegetal: cilantro, celery
3 types to taste today:
 Grocery store
 Moroccan
 Indian

Oranges

Two kinds: sweet and bitter/sour/Seville
Curaçao oranges are unripe small sour oranges: “pea” oranges
Sour orange much preferred for beer
 The marmalade orange
 Available from Caribbean markets
 Dried from brewing supply or Middle Eastern markets
 Some dried varieties have too much bitter pith
 1-2 oranges per 5-gallons
Substitute 2 part sweet orange (or tangerine) + 1 part grapefruit peel
Kumquats pretty close (use them whole)

Fenugreek

Small hard Indian spice
Not much (if any) history in beer
Flavor very maply
Used in fake maple syrup
Enhance the flavor of maple beers
Just smell

Sweet flag

Big tradition in liqueurs, digestifs
Less common in beer
 Purl, in 18th cent. England
Complex aroma
Slightly bitter
Chew to let flavor develop

Gentian

Bitter roots used as a hop substitute
Digestive—as in Unterberg
Augsberger ale

Ginger

History in British ales
 18th Century
 “China” ale
 Dried, powdered ginger used
Problematic
 Grocery store the worst
 Woody, fibrous, harsh

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Fresh young (pink) roots better
Asian markets
Candied a good choice
Usually decent quality
Taste!
Granular—Philipino
Clean, peppery taste

Cardamom

Ginger relative
Green and white pretty familiar
Black cardamom used in Indian, Arabic traditions
Smoky, astringent

Cassia

Cinnamon not cinnamon
Ceylon true cinnamon
weaker, woodier, more complex
Mexican & English cooking
Cassia bark = cinnamon toast
Cassia buds = Dentyne
Great for Christmas ales

Long pepper

Close relative of black pepper
“Sweet-hot” flavor, less piney than BP
Used since Roman times
Medieval beers

Grains of paradise

Related to ginger, cardamom
Bright, pungent, peppery
History in Britain
Strong, pale Belgian ales
Celis Grand Cru
POTENT!
1–2 grams/5 gallons
Taste: white pepper and plywood