

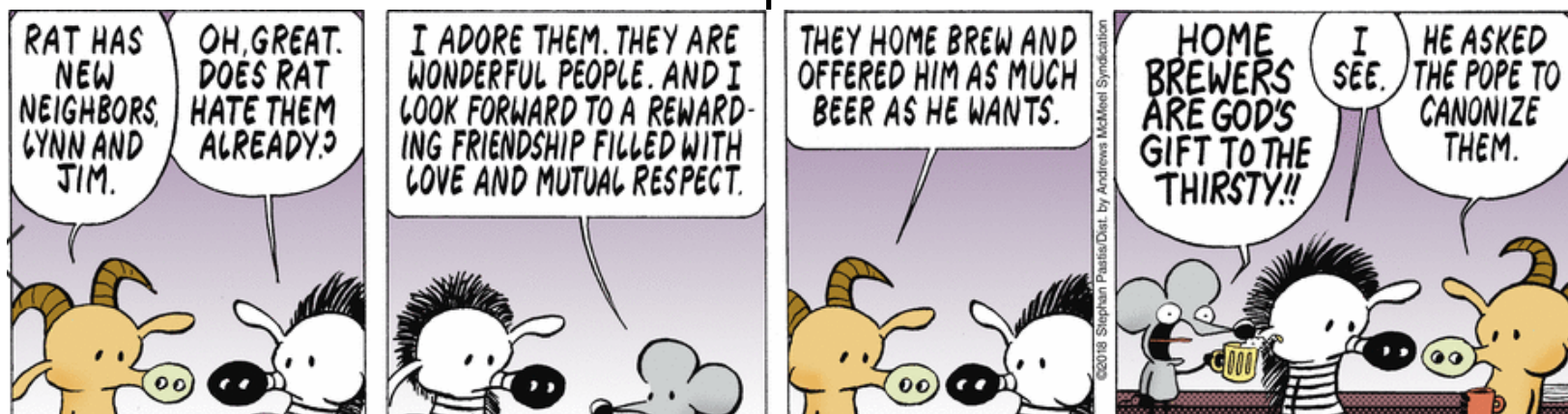


# Growing Hops and Making Beer

DinoBrew

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24 Apr 2019



# About Me

- Beer Ambassador
- Homebrewer
- BJCP Certified
- BBoPP Founder
- BFBC Brew Crew
- Retired AF Govie



# Overview

- Beer History
- Hop Harvest
- Beer Styles
- Ingredients
- Fresh Hop Recipe
- Homebrew Equipment
- Brew Process
- Hop Plant Sources
- Resources
- Summary



# Beer History

- Egyptians first homebrewers
- Global consumption
- 1930s -- Prohibition
- 1950s -- Many local commercial breweries
- 1970s – Megabreweries rule
- 1990s – Microbreweries fight back
- 2000s – Home brewing



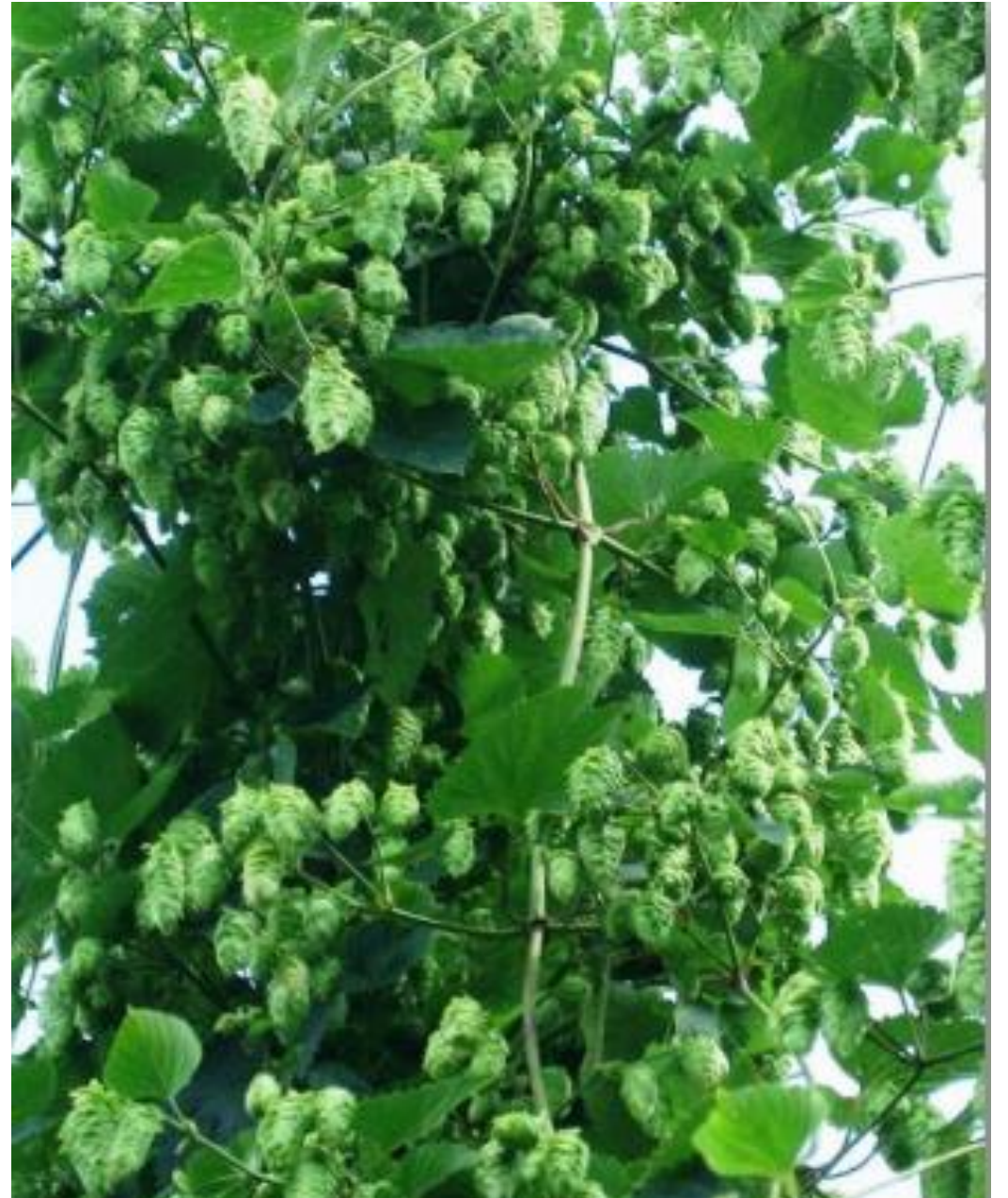
# Hop Harvest

- Late June – Burr Formation
- Late July – Burrs turn to Cones
- Mid August to Sep – Cones ripen and dry
- Time to harvest -- Cones are dark green, Lupulin bright yellow
- Food Dehydrator – Window Screen < 140 F
- Dry Matter Test ~ 25% (dry/green weight)
- Store in zip lock bags in the freezer after dehydration



# Hop Use and Types

- Uses
  - Bittering
  - Flavor
  - Aroma
- Types
  - Cascade
  - Brewer's Gold
  - Neomexicanus
  - Hybrids
  - Experimental...



# Beer Styles



- Beer Judge Certification Program Style Guidelines
  - <https://www.bjcp.org/stylecenter.php>
  - 2015 recognizes 34 styles and > 100 sub-styles
  - Lagers, Pils, Bock, Hybrid, Ales, Porter, Stout, Pale Ale, German, Belgian, Sour, Strong, Fruit, Spice, Smoke, Specialty Plus Meads and Ciders
- Brewers Association
  - <https://www.brewersassociation.org/resources/brewers-association-beer-style-guidelines/>
  - Ales, Lagers, Hybrids
  - Used at Great American Beer Festival
- Best Fresh Hop Styles
  - Pale Ales, India Pale Ales, anything that accentuates hops

# Ingredients

- Water
  - Source, Treatment
- Malt
  - Barley
  - Wheat
  - Adjuncts (spices, herbs, etc)
- Hops
  - Bittering, Flavoring, Aroma
- Yeast
  - 1000s of strains





# Fresh Hop Recipe (5 Gal)

- **American Pale Ale base (~ 6% ABV, ~ 40 IBU)**
  - **Ingredients:**
    - Malted Barley: 10 lb 2 row
    - Specialty: 1 lb 60L crystal, ½ lb aromatic
    - Hops: 2 oz Summit (bittering)
    - Fresh hops: 5 oz dry (flavor & aroma), 24 oz wet (flavor)
    - Ale Yeast 1056
  - **Mash at 150 F for one hour**
  - **Boil for one hour with Summit as bittering**
  - **Add flavor hops 15 Min out and aroma at KO**
  - **Chill, add yeast, ferment at 60 F for one week**
  - **Rack to carboy to clarify for one week**
  - **Keg, add wet hops**
  - **Enjoy!**



# Home Brew Equipment (< \$500)

- Hot Liquor (water) Tank
- Mash Tun
- Brew Pot/Kettle
- Heat Source
  - Stove, Turkey Fryer
- Chiller
- Fermenter (Primary, Secondary)
- Serving
  - Bottles, Party Pigs, 5 gal kegs



# Advanced Brew Systems



Homemade  
\$Depends



Grainfather  
\$999



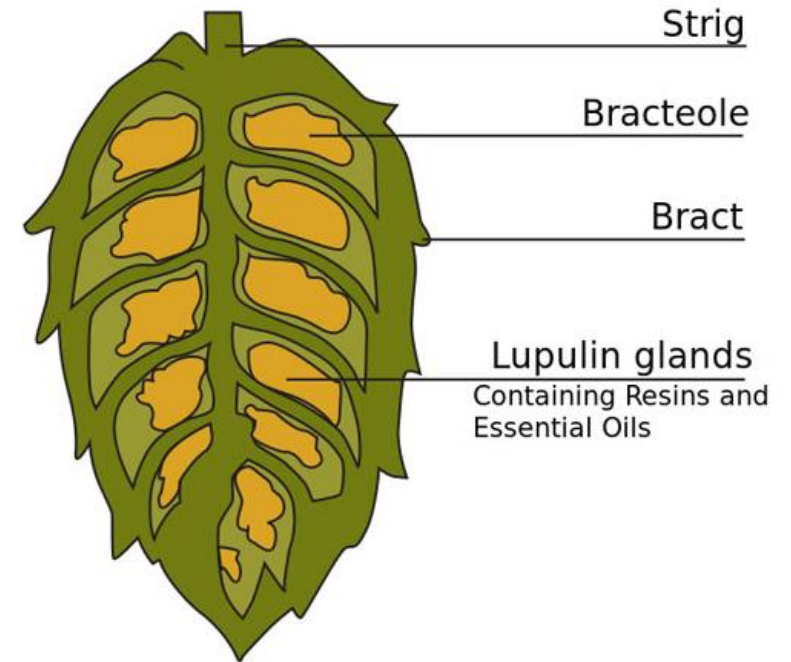
PREMIER  
ELECTRIC 20 Gal RIMS

\$6,900

SABCO

# Process Overview

- Milling grain – crack husks
- Mashing -- extract sugars
- Vorlauf -- set the grain bed
- Sparging -- max output
- Boiling – infuse flavors
- Chilling – before adding yeast
- Fermenting -- sugar to alcohol
- Serving -- savoring



# Milling, Mashing and Sparging

- Mill malted barley (partially sprouted)
- Mashing
  - Single infusion ~150 F
  - Step Mash
  - Decoction for increased maltiness
- 'Vorlauf' sets the grain filter bed
- Sparging gets the last of the sugars
  - Fly vs Batch



# Boiling, Chilling, Fermenting, Serving

- Bring wort to a boil, don't boil over!
- Add hops for bittering, flavor and aroma
- Add spice and special ingredients
- Chill quickly to avoid contamination
- Add yeast around 80 F
- Primary ferment for one week
  - Lagers 36-58 F months, Ales 60-78 F weeks
- Secondary ferment as necessary
- Keg/bottle, carbonate, condition and serve



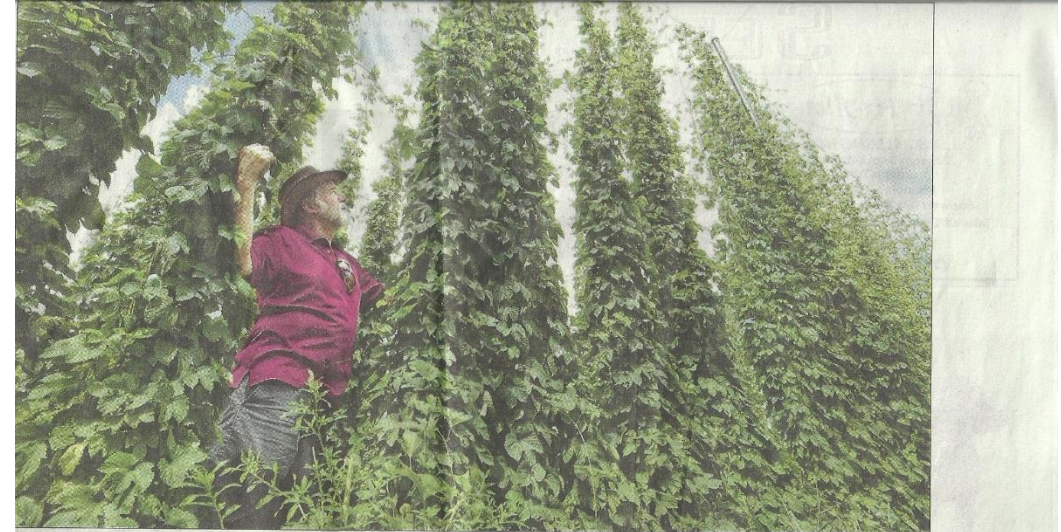
# Hop Plant Sources

- Phelan Gardens (25% off tonight)
  - Nugget – Bittering (woody, resinous)
  - Cascade – Aroma (spicy, citrusy)
  - Chinook – Flavor (spicy, fruity)
  - Centennial – Bittering (pungent)
  - Mt Hood – Aroma (herby)
- USA Hops
  - <https://www.usahops.org/>
- Your Friends



# Local Commercial Hop Growers

- Rick Squires
  - Monument
- Hopster Hops
  - Greg Hopper, Elbert
  - Planning Elizabeth Hopfest
- Marigold Valley Hops, Cripple Creek
  - <https://www.marigoldvalley.com/>



Rick Squires looks upward at his 17-foot spires of hops bines at his property in Monument late last month. Squires started his business, The Twisted Bine, after becoming intrigued by the idea of growing hops, a vital ingredient that gives beer its flavor. JERILEE BENNETT, THE GAZETTE





# Hopness Monster

Bines & Brews Hopfest, Monument  
21 Sep 2019 Limbach Park  
\$11 Fresh hops & entry for  
homebrewers  
990squires@gmail.com





## EL PASO COUNTY FAIR

# 8TH ANNUAL HOMEBREW COMPETITION

### WHEN

Beer deadline June 29th  
(see drop-off locations)

Awards ceremony July 13

### WHERE

Awards at 3:00 p.m.  
El Paso County Fairgrounds

Swink Hall

366 10th Street Calhan, CO 80808

One Free Admission to Fairgrounds on opening day,  
July 13, for anyone who enters beer in the  
competition to attend awards ceremony

Chance to be Brewed by a Pro at  
Black Forest Brewing Company

\*Brewer reserves the right to not pick a winner.

A BJCP-SANCTIONED EVENT

LIMITED TO SUMMER STYLES

RULES, INFORMATION, AND REGISTRATION AT  
[HTTP://ELPASOCOCOMP.BREWBROSC.COM](http://elpasococomp.brewbrosc.com)



### REGISTRATION

Opens: June 1

Ends: June 29

<http://epcfcamp.brewbrosc.com>

### DROP-OFF DATES

June 17 – June 29

DROP-OFF  
LOCATIONS:



# Resources

- American Homebrew Association
  - <https://www.homebrewersassociation.org>
  - Zymurgy Magazine
- Fresh Hop Homebrew Guide
  - <http://www.homebrewing.com/articles/fresh-hop-homebrew-guide/>
- Brew Bros of Pikes Peak Homebrew Club
  - <http://brewbrosc.com/>
  - May the Fourth (Be with you), PPBC Big Brew Wort Transformation
- “The Complete Joy of Homebrewing”
  - Charlie Papazian ‘Relax have a homebrew’

# Last Call

- Hop growing is relatively easy
- Home brewing is fun
- Great social experience
- Allows creativity and experimentation
- More economical than liquor store
- Learn about Biology, Chemistry, Geography, History...
- Competitions for feedback & glory

