

The slide features a dark blue background with decorative geometric patterns on the left and right sides. These patterns consist of overlapping, colorful shapes in shades of yellow, magenta, cyan, and grey, arranged in a way that suggests movement or a stylized architectural structure.

# *English Pale Ale*

Bitter, Special Bitter & ESB

# *Very Brief History*

- Once upon a time, malt was wood-kilned and beer was consequently much darker.
- In 1600's, kilning with coke was invented, creating paler, but more expensive malts.
- Pale malts became affordable during the industrial revolution.
- 100 years later, basis of APA, IPA, etc.

# Three Classes of Bitters

- Standard/Ordinary Bitter
  - ABV: 3.2-3.8% IBU: 25-35
- Special/Best/Premium Bitter
  - ABV: 3.8-4.6% IBU: 25-40
- Extra Special/Strong Bitter
  - AKA English Pale Ale
  - ABV: 4.6-6.2% IBU: 30-50
- Traditionally Parti-Gyle (3 beers, 1 mash)

# General Description

- Gold to Copper in color.
- Biscuity malt presence, usually with some caramel flavor.
- Balanced bitter but malt, yeast and hop flavors should be present.
- Earthy, floral hop character.
- Some fruity esters may be present.

The image features a solid blue background. In the top-left and bottom-right corners, there are decorative geometric shapes composed of overlapping triangles and parallelograms in shades of yellow, magenta, cyan, and grey. The word "Ingredients" is centered in a white, cursive font.

# *Ingredients*

# Malts

- Base Malt: UK pale malt
  - Maris Otter, Pearl, Halcyon, Optic, etc.
- Crystal malts
  - Crystal 45, Crystal 80, Crystal 120, Special B
- Kilned malts
  - Biscuit, Victory, Dextrin malt
- Roasted malts
  - Chocolate, Roast Barley

# Hops

- Bittering most important, but flavor and aroma additions are welcome.
- UK varieties like Target, Golding and Fuggle are classics.
- American hops with English genetics like Willamette and Glacier.
- BU:GU is from 0.75:1 to 0.9:1

# Yeast

- Use English Yeast
  - WLP002 English Ale Yeast
  - WLP005 British Ale Yeast
- Important to use low attenuating yeast for lower gravity English ales.



# Water

- Water should have 50 ppm of  $\text{Ca}^+$  for good yeast health and flocculation, so add Gypsum (or  $\text{CaCl}$ ) to soft water.
- Bicarbonate should be low, so use RO water if your water is hard.
- Burtonizing with Gypsum, Epsom Salts is done by some but not necessary.

# Adjuncts

- Usage increased greatly during WWs.
- Coincided with fall in gravities.
- 100% fermentable
  - Boosts ABV
  - Lowers malt flavors
- Not essential for making a quality bitter.
- Essential to clone some examples.

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*Process*

# *The Mash*

1. Mash warmer to increase FG in lower OG beers.
2. Usually single-infusion mash, from 152-160F, depending on gravity.
3. Do a short Protein Rest around 122-130F if using high-protein malts or adjuncts like torrified wheat.

# *Fermentation*

- Ferment toward bottom of yeast range for lower esters, toward top for more.
- Usually best to start cooler and finish higher to encourage yeast to re-uptake diacetyl and acetaldehyde.
- Yeast is very flocculent, so it's important not to drop temp at end of ferment.

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# *Creating a Recipe*

# *Essential Ingredients*

1. Use an English yeast strain
2. Use an English base malt
3. Use crystal malts (Optional)
4. Use English-style hops

# *Choose a Yeast*

- WLP002 English Ale
- WY1968 London ESB Ale
- WY1098 British Ale
- WY1275 Thames Valley Ale
- WLP006 Bedford British
- WLP013 London Ale
- WLP023 Burton Ale



# Build the Grist

1. Base malt:
  - a. UK Pale Malt - Up to 100%
2. Character malts:
  - a. Crystal malt - Up to 15%(!)
  - b. Kilned malt - Up to 10%
3. Color malts:
  - a. Roasted malt - Up to 1%

# Select the Hops

- Classic English Varieties:
  - East Kent Goldings
  - Fuggles
  - Challenger
  - Target
- American English-like Varieties:
  - Willamette
  - Glacier

# Example: Promise's Best Bitter

OG: 1.046 FG: 1.012

IBU: 38 SRM: 10

90% Maris Otter

2.5% Crystal 120

2.5% Crystal 80

2.5% Victory Malt

2.5% Wheat Malt

90m Boil 5m WP

Golding = 4.75% AA

Glacier = 6% AA

1.5oz Golding @ 60m

0.5oz Glacier @ 15m

0.5oz Golding @ 15m

1oz Glacier @ 1m

1oz Golding @ 1m

# Videos

Fuller's Chiswick Bitter  
- Ordinary Bitter (3.5%)



Fuller's ESB  
- Pale Ale / ESB (5.9%)

