

# Irish Ales

## *BJCP Category 15*

- Irish Red Ale
- Irish Dry Stout
- Irish Extra Stout



# Irish Ales: The Big Picture

- ▶ Amber to dark (SRM 9 - 50)
  - ▶ Roasted barley predominant dark malt!
- ▶ Top-fermented (Ales)
- ▶ Sessionable to moderate ABV (3.8% - 6.5%)
- ▶ Wider range of character than commonly believed, due to:
  - ▶ Differences between export and domestic
  - ▶ Domination by well-known, high-volume producers



# A bit of Irish beer history

The earliest form of *beoir* (Gaelic for beer) in Ireland is believed to have been brewed in the Bronze Age. The discovery of a possible brewery site, a *fulacht fiadh* (grass-covered mound), led to the test brewing of a gruit (a beer flavored with plants and herbs but not hops) in 2001. Ingredients were barley, bog myrtle, meadowsweet, water, and yeast...”

*The Oxford Companion to Beer, Garrett Oliver, 2011*

# A bit of Irish beer history

## *A fulacht fiadh*



A possible brewery site

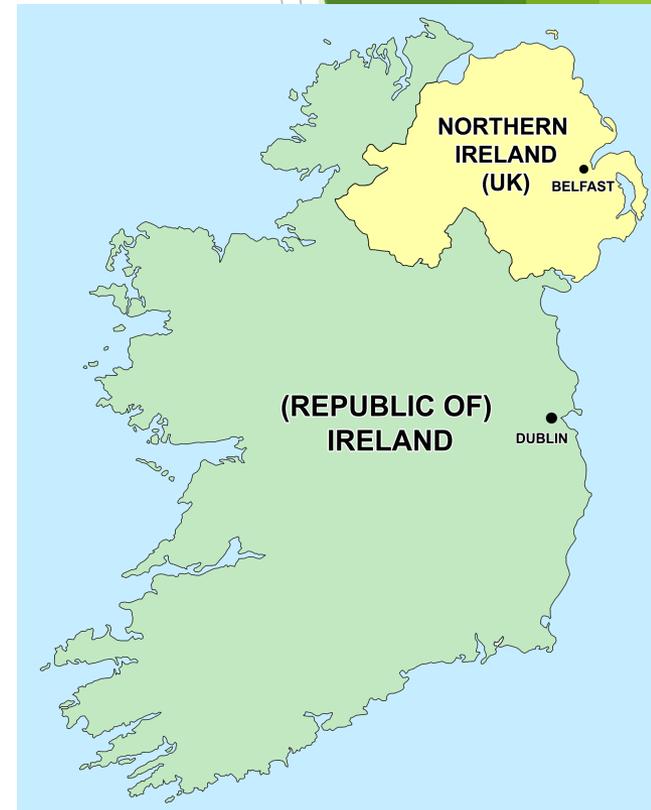


An ancient mash tun?

“drinkable and worthy of our ancestor’s efforts.”

# A bit of Irish beer history

- ▶ England had a large influence over many aspects of Irish life, including its beer.
  - ▶ Irish Stout followed London Porter
  - ▶ Irish Red followed Bitters and Milds
  - ▶ Import of English hops was essential for beer production
  - ▶ England enforced beer and malt tax forced use of only malted barley and hops in the brewing of beer
    - ▶ Effect similar to Reinheitsgebot



# Why all the Roasted Barley?

## ► Cost considerations:

- Caramel malts (imported from England) were expensive
- Use of roast barley (vs. black roasted malt) was a tax dodge

R. Mosher, *Tasting Beer* (2009)

## ► Moderate to high Residual Alkalinity (carbonate) water:

- Increased acid content of dark grain produced smoother beers and enhanced enzyme performance during the mash

More about this later...



# The BJCPs of Irish Beer

Irish Red Ale (Category 15A)

- ▶ formerly “Irish Red Ale” (9D), per BJCP 2008

Irish Stout (Category 15B)

- ▶ formerly “Dry Stout” (13A), per BJCP 2008

Irish Extra Stout (Category 15C)

- ▶ “new” category

# Irish Ales by the Numbers

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%
old "Irish Red" (2008 Cat. 9D)	17-28	9-18	1.044 - 1.060	1.010 - 1.014	4.0-6.0%
Irish Stout (2015 Cat. 15B)	25-45	25-40	1.036 - 1.044	1.007 - 1.011	4.0-4.5%
old "Dry Stout" (2008 Cat. 13A)	30-45	25-40	1.036 - 1.050	1.007 - 1.011	4.0-5.0%
Irish Extra Stout (2015 Cat. 15C)	35-50	25-40	1.052 - 1.062	1.010 - 1.014	5.5-6.5%

# Irish Red Ale: Overall Impression

An easy-drinking pint, often with subtle flavors. Slightly malty in the balance sometimes with an initial soft toffee/caramel sweetness, a slightly grainy-biscuity palate, and a touch of roasted dryness in the finish. Some versions can emphasize the caramel and sweetness more, while others will favor the grainy palate and roasted dryness.

- ▶ This beer is bitter, but easy to drink:
  - ▶ Dry, but can emphasize caramel sweetness or grainy-dryness of roasted malts
  - ▶ Low alcohol
  - ▶ Moderate carbonation

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%

# Irish Red Ale: Appearance

Medium amber to medium reddish-copper color. Clear. Low off-white to tan colored head, average persistence.

- ▶ Why is it “Red”?
  - ▶ Small dose of highly-kilned malt contributes a deep reddish-copper color
- ▶ Off-white to tan head

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%

# Tasting: Smithwick's Irish Ale

(note: the 'hw' is silent.)

Smithwick's is Ireland's favourite ale, from a tradition of ale brewing founded in 1710.

## AROMA

Clean and delicate with different individual notes:

**Fruit:** From the top fermentation by the Smithwick's yeast, come aromatic "esters", creating a fruity aroma.

**Floral:** The Aroma Hops - added late in the boil, contribute clean, fresh floral notes.

**Malty:** Ale Malt, contributes aroma hints of biscuit and caramel.



## APPEARANCE

Smithwick's is a clear beer with a rich ruby colour and creamy head.

## TASTE

Refreshing & clean, with a gentle balance of:

- Bitterness from the Hops added early in the boil
- Sweet /malty notes from the ale malt, and
- Hint of roast/coffee –from the roasted barley.

Reading about Smithwick's is however no substitute for its personal enjoyment:

- ▶ Founded in Kilkenny in 1710
- ▶ Now brewed by Guinness in Dublin
- ▶ Now owned by Diageo

# Irish Red Ale: Aroma

Low to moderate malt aroma, either neutral-grainy or with a lightly caramelly-toasty-toffee character. May have a very light buttery character (although this is not required). Hop aroma is low earthy or floral to none (usually not present). Quite clean.

- ▶ Grainy to light caramel-toast-toffee aroma
- ▶ Very light buttery character acceptable
  - ▶ low amounts of diacetyl permitted
  - ▶ Otherwise clean

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%

# Irish Red Ale: Flavor

Moderate to very little caramel malt flavor and sweetness, rarely with a light buttered toast or toffee-like quality. The palate often is fairly neutral and grainy, or can take on a lightly toasty or biscuity note as it finishes with a light taste of roasted grain, which lends a characteristic dryness to the finish. A light earthy or floral hop flavor is optional. Medium to medium-low hop bitterness. Medium-dry to dry finish. Clean and smooth. Little to no esters. The balance tends to be slightly towards the malt, although light use of roasted grains may increase the perception of bitterness slightly.

- ▶ Moderate to low caramel malt flavor/sweetness
  - ▶ Buttered toast or toffee-like is allowed
- ▶ Light earthy-floral hop, medium to medium low bitterness
- ▶ Roasted barley adds to the dry grainy and bitter finish

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%

# Irish Red Ale: Mouthfeel

Medium-light to medium body, although examples containing low levels of diacetyl may have a slightly slick mouthfeel (not required). Moderate carbonation. Smooth. Moderately attenuated.

- ▶ Medium light to medium body
- ▶ Moderate carbonation
- ▶ Moderate attenuation
- ▶ May be slick due to diacetyl

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%

# Irish Red Ale: Similar Styles

- ▶ vs. English Bitters (Cat. 11)
  - ▶ less hoppy, less bitter
  - ▶ cleaner fermentation (fewer esters)
  - ▶ dryish finish (due to roasted barley)
- ▶ vs. Scottish Ales (Cat. 14)
  - ▶ more attenuated
  - ▶ less caramel flavor
  - ▶ less body
  - ▶ Guess what? *PEAT is NEVER appropriate!*

# Tasting a Local Craft Example: Mulligan - Second Chance

## AMBER ALE

26 IBU | 5.6% ABV

Smooth caramel malt notes and light, earthy British hops combine for an easy drinking, malty red ale.



**MULLIGAN™**

	IBU's	SRM	OG	FG	ABV
Irish Red Ale (2015 Cat. 15A)	18-28	9-14	1.036 - 1.046	1.010 - 1.014	3.8-5.0%

# Irish Red Ale: Brewing Tips

- ▶ Use restraint with dark malts, caramel malts, and hops
  - ▶ anything out of balance will cover up toasted notes that are key to overall background
- ▶ Monitor fermentation temperatures
  - ▶ well attenuated, but clean
- ▶ Diacetyl control
  - ▶ any buttery flavors or aroma should be at a minimum

J. Zainasheff & J. Palmer, *Brewing Classic Styles* (2007)

# Irish Red Ale: Example Recipe



Amt	Name	Type	▲	%/IBU
👑 11 lbs 4.0 oz	Pale Malt (2 Row) UK (3.0 SRM)	Grain	1	90.9 %
👑 6.0 oz	Caramel/Crystal Malt - 40L (40.0 SRM)	Grain	2	3.0 %
👑 6.0 oz	Caramel/Crystal Malt -120L (120.0 SRM)	Grain	3	3.0 %
👑 6.0 oz	Roasted Barley (300.0 SRM)	Grain	4	3.0 %
🌿 1.25 oz	Goldings, East Kent [5.00 %] - Boil 60.0 m	Hop	5	25.0 IBUs
🍷 1.0 pkg	Irish Ale Yeast (White Labs #WLP004)	Yeast	6	-

Source: J. Zainasheff & J. Palmer, *Brewing Classic Styles* (2007)

# Irish Stout: Overall Impression

A black beer with a pronounced roasted flavor, often similar to coffee. The balance can range from fairly even to quite bitter, with the more balanced versions having a little malty sweetness and the bitter versions being quite dry. Draught versions typically are creamy from a nitro pour, but bottled versions will not have this dispense derived character. The roasted flavor can be dry and coffee-like to somewhat chocolaty.

- ▶ Like Irish Red Ale, bitter, but easy to drink:
  - ▶ dry (although more balanced versions have a little malty sweetness)
  - ▶ low alcohol
  - ▶ low carbonation

	IBU's	SRM	OG	FG	ABV
Irish Stout (2015 Cat. 15B)	25-45	25-40	1.036 - 1.044	1.007 - 1.011	4.0-4.5%

# Irish Stout: Appearance

Jet black to very deep brown with garnet highlights in color. According to Guinness, “Guinness beer may appear black, but it is actually a very dark shade of ruby.” Opaque. A thick, creamy, long-lasting, tan- to brown-colored head is characteristic when served on nitro, but don’t expect the tight, creamy head on a bottled beer.

- ▶ Very dark
  - ▶ “Guinness beer may appear black, but it is actually a very dark shade of ruby.” *Guinness*
- ▶ Creamy, tan, long-lasting head
  - ▶ Especially on nitro

	IBU's	SRM	OG	FG	ABV
Irish Stout (2015 Cat. 15B)	25-45	25-40	1.036 - 1.044	1.007 - 1.011	4.0-4.5%

# Tasting: Murphy's Irish Stout

“This beer is black with a thick cap of foam and has a pleasant aroma of earthy, floral hops and chocolate. The palate features light bitterness seamlessly integrated with the bite of the roast, leading into a dry, winy center. From there, it’s gone in a flash, leaving behind only dry, clean bitterness and a coffeeish ghost. Murphy’s is less assertive than Beamish and far less assertive than Guinness.”



“Murphy's Irish Stout - No Experience Required.”

# Irish Stout: Aroma

Moderate coffee-like aroma typically dominates; may have slight dark chocolate, cocoa and/or roasted grain secondary notes. Esters medium-low to none. Hop aroma low to none, may be lightly earthy or floral, but is typically absent.

- ▶ Coffee-like aroma with hints of dark chocolate and or roasted grain
- ▶ Esters medium-low to none
- ▶ Hop low to none

	IBU's	SRM	OG	FG	ABV
Irish Stout (2015 Cat. 15B)	25-45	25-40	1.036 - 1.044	1.007 - 1.011	4.0-4.5%

# Irish Stout: Flavor

Moderate roasted grain or malt flavor with a medium to high hop bitterness. The finish can be dry and coffee-like to moderately balanced with a touch of caramel or malty sweetness. Typically has coffee-like flavors, but also may have a bittersweet or unsweetened chocolate character in the palate, lasting into the finish. Balancing factors may include some creaminess, medium-low to no fruitiness, and medium to no hop flavor (often earthy). The level of bitterness is somewhat variable, as is the roasted character and the dryness of the finish; allow for interpretation by brewers.

- ▶ Moderate roast grain or malt
- ▶ Finishes from dry and coffee-like to balanced with touch of caramel or malt sweetness
- ▶ Medium-low to no esters
- ▶ Medium to no hop flavor
- ▶ Range: Not all Irish stouts are like Guinness

	IBU's	SRM	OG	FG	ABV
Irish Stout (2015 Cat. 15B)	25-45	25-40	1.036 - 1.044	1.007 - 1.011	4.0-4.5%

# Irish Stout: Mouthfeel

Medium-light to medium-full body, with a somewhat creamy character (particularly when served with a nitro pour). Low to moderate carbonation. For the high hop bitterness and significant proportion of dark grains present, this beer is remarkably smooth. May have a light astringency from the roasted grains, although harshness is undesirable.

- ▶ Medium-light to medium-full body
- ▶ Creamy, especially on nitro
- ▶ Smooth, despite bitterness and dark grains

	IBU's	SRM	OG	FG	ABV
Irish Stout (2015 Cat. 15B)	25-45	25-40	1.036 - 1.044	1.007 - 1.011	4.0-4.5%

# Irish Stout: Similar Styles

- ▶ vs. English Porter (Cat. 13C)
  - ▶ darker
  - ▶ slightly more bitter
  - ▶ slightly lower carbonation
  - ▶ typically a drier finish
- ▶ vs. Irish Extra Stout (Cat. 15C)
  - ▶ similar flavors and balance
  - ▶ lower strength and intensity
  - ▶ less body, richness, and malt complexity

# Tasting a Local Craft Example: The Pugilist - Societé Brewing

*A celebration of roasted barley, The Pugilist is nearly black in color. Our dry stout is sessionably low in alcohol, but chock full of delightful aromatics and flavor nuances that include hop-bitterness and a slight touch of acidity, both of which provide contrast to the beer's big, roast-heavy character.*



# Irish Stout: Brewing Tips

- ▶ Must have roast, unmalted barley
  - ▶ provides distinctive stout taste
- ▶ Must have some flaked unmalted barley
  - ▶ adds to the mouthfeel
- ▶ Common mistake: including caramel malt
  - ▶ negatively affect dryness
- ▶ Monitor fermentation temperatures
  - ▶ attenuated, but clean

J. Zainasheff & J. Palmer, *Brewing Classic Styles* (2007)

# Irish Stout: Example Recipe



Amt	Name	Type	▲	%/IBU
👑 7 lbs	Pale Malt (2 Row) UK (3.0 SRM)	Grain	1	70.0 %
👑 2 lbs	Barley, Flaked (2.2 SRM)	Grain	2	20.0 %
👑 1 lbs	Black Roasted Barley (500.0 SRM)	Grain	3	10.0 %
🌿 2.00 oz	Goldings, East Kent [5.00 %] - Boil 60.0 min	Hop	4	40.0 IBUs
🍷 1.0 pkg	Irish Ale Yeast (White Labs #WLP004)	Yeast	5	-

J. Zainasheff & J. Palmer, *Brewing Classic Styles* (2007)

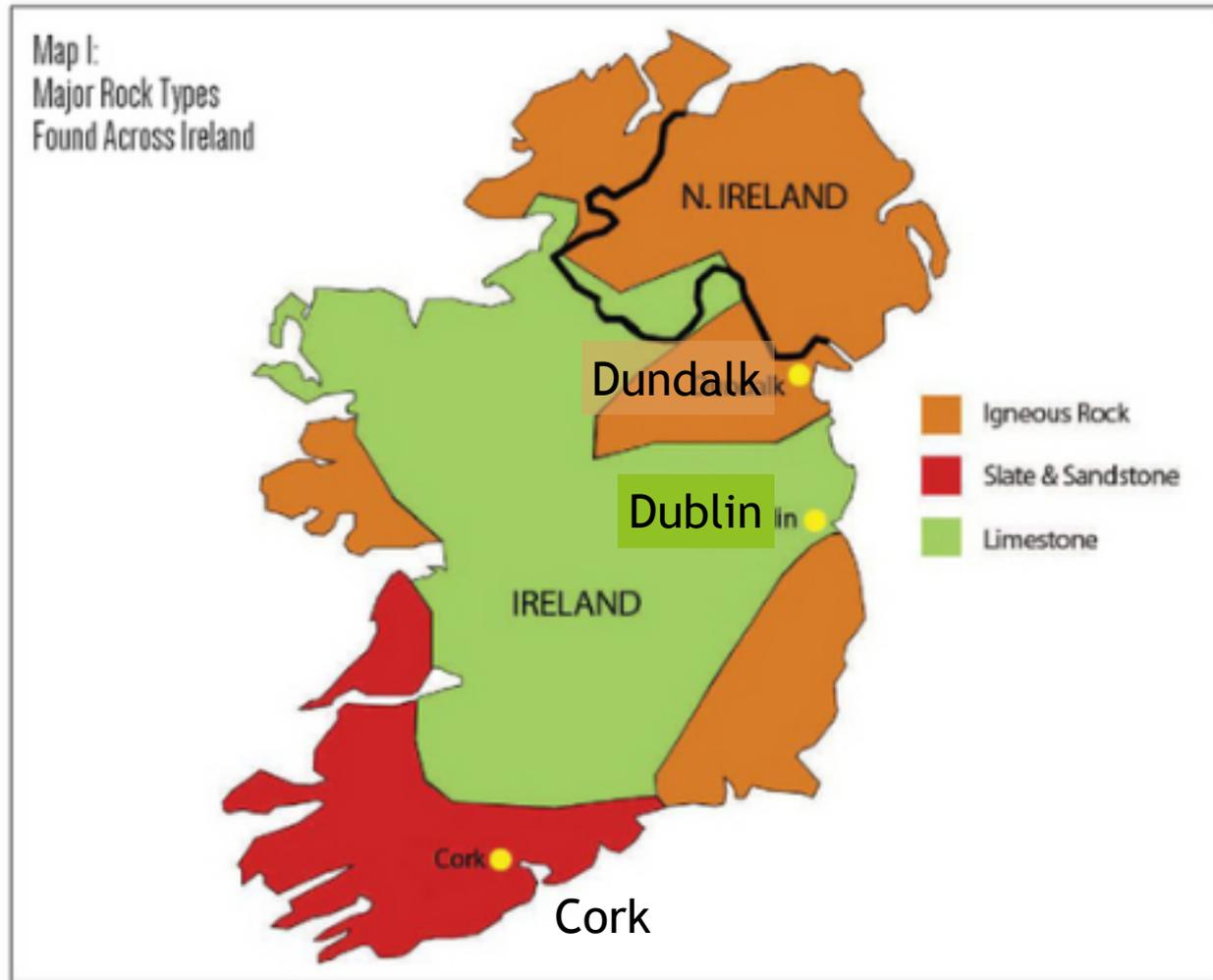
# Irish Stout: Another example to contrast with the Guinness style



Amt	Name	Type	▲	%/IBU
👑 7 lbs 4.0 oz	Pale Malt (2 Row) UK (3.0 SRM)	Grain	1	64.4 %
👑 1 lbs 12.0 oz	Barley, Flaked (2.2 SRM)	Grain	2	15.6 %
👑 12.0 oz	Black Roasted Barley (500.0 SRM)	Grain	3	6.7 %
👑 12.0 oz	UK Caramel/Crystal Malt - 80L (80.0 SRM)	Grain	4	6.7 %
👑 6.0 oz	Carapils/Dextrine (2.0 SRM)	Grain	5	3.3 %
👑 6.0 oz	Debittered Black (Patent) Malt (1335.0 SRM)	Grain	6	3.3 %
🌿 1.30 oz	Challenger [8.50 %] - Boil 60.0 min	Hop	7	33.0 IBUs
🍷 1.0 pkg	London Ale Yeast (Wyeast Labs #1028) [124.21 ml]	Yeast	8	-

G. Strong, *Modern Homebrew Recipes* (2015)

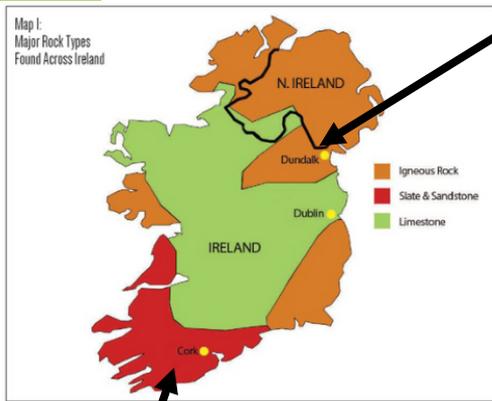
# Water in Ireland



# Water Supplies of Major Brewing Cities

## Dundalk

- Region of granite
- Water fairly soft and has low alkalinity
- Former home of Harp Irish Lager



## Cork

- River water flows through mostly sandstone and shale
- fairly soft and has low alkalinity
- Murphy's (Heineken), Beamish

# Dublin Water Profile

## Dublin (Dry Stout)

Ion Profile in ppm

Ca <sup>2+</sup>	Mg <sup>2+</sup>	Na <sup>+</sup>	Cl <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	HCO <sub>3</sub> <sup>-</sup>
4	12	19	53	280	

With its high bicarbonate, Dublin water is well suited for stouts and other dark ales.

LOAD THIS TARGET PROFILE INTO YOUR WATER CHEMISTRY CALCULATOR

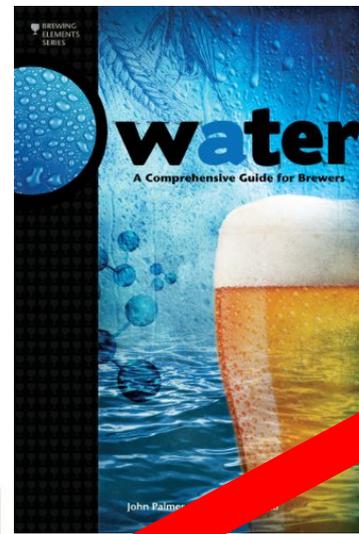


Table 3: Purported Dublin Water Profile

Ion	Concentration (mg/L)
Calcium	120
Magnesium	4
Sodium	
Chloride	19
Sulfate	
Bicarbonate	315
Residual Alkalinity (ppm CaCO <sub>3</sub> )	173

Source: Various

Table 16—Brungard's Ion Profiles from Major Brewing Cities<sup>1</sup>.

City/Style	Ca <sup>+2</sup>	Mg <sup>+2</sup>	HCO <sub>3</sub> <sup>-1</sup>	Na <sup>+1</sup>	Cl <sup>-1</sup>	SO <sub>4</sub> <sup>-2</sup>	RA*	Sum (+)	Sum (-)
Pilsen/Pilsner	7	2	16	2	6	8	7	0.7	0.9
Dublin/	120	4	315	12	19	55	170	6.9	6.8

Table V: Comparison of Famous Brewing Waters\*

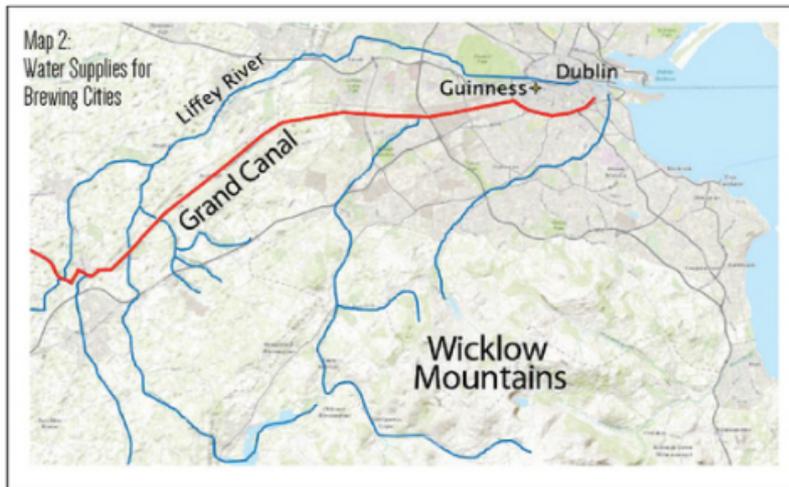
	Durham, NC†	Pilsen	Munich	Dublin	Dortmund	Burton-on-Trent
Calcium (ppm)	16	7	75	115	250	295
Magnesium (ppm)	2	2	20	4	25	45
Sodium (ppm)	4	2	10	4	70	55
Sulfate (ppm)	25	5	10	55	280	725
Bicarbonate (ppm)	12	15	200	200	550	300
Chloride (ppm)	9	5	2	19	100	25
Hardness (as CaCO <sub>3</sub> )	48	30	250	300	750	850
Water character‡	soft	soft	carbonate	carbonate	hard	sulfate

Vital Statistics	Calcium (ppm):	120
	Sulfates (ppm):	54
	Magnesium (ppm):	4
	Sodium (ppm):	12
	Chloride (ppm):	19
	Carbonates (ppm):	319

Brewing Center	Ionic Profiles for Major Brewing Cities						Residual Alkalinity
	Ion Concentrations (ppm)						
	Calcium	Magnesium	Sodium	Sulfate	Chloride	Bicarbonate	
Burton	275	40	25	610	35		5
Dortmund	230	15	40	330	130	235	20
Dublin	120	4	12	55	19	315	

# Water in Dublin

- Originally relied on local rivers and wells
  - Hard and alkaline
- Grand Canal built in 1780 brought water from Wicklow Mountains
  - Soft with low alkalinity
- Aqueducts constructed in 1860s provided water directly from Wicklow Mountains to southern Dublin and Guinness Brewery



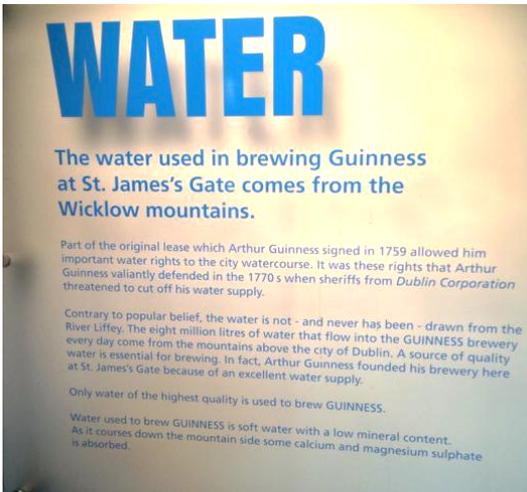
“Brewing Water Series:  
Ireland”

– Martin Brungard

# Guinness Water

“While the St James's Gate Brewery is situated on the banks of the River Liffey in the heart of Dublin, the water used in our brewing process comes from the Wicklow mountains a little way to the south.”

*Soft water, low mineral content (calcium, magnesium sulphate)*



Historically, a Preboil was used to precipitate calcium carbonate from water, which reduced its alkalinity.

From the Guinness St. James Gate Brewery  
tour

# Irish Extra Stout: Overall Impression

A fuller-bodied black beer with a pronounced roasted flavor, often similar to coffee and dark chocolate with some malty complexity. The balance can range from moderately bittersweet to bitter, with the more balanced versions having up to moderate malty richness and the bitter versions being quite dry.

- ▶ Mid-way between an Irish Dry Stout (15B) and a Foreign Extra Stout (16D):
  - ▶ similar flavors
  - ▶ varying strength and intensity

	IBU's	SRM	OG	FG	ABV
Irish Extra Stout (2015 Cat. 15C)	35-50	25-40	1.052 - 1.062	1.010 - 1.014	5.5-6.5%

# Irish Extra Stout: Appearance

Jet black. Opaque. A thick, creamy, tan head is characteristic.

- ▶ Jet black, opaque
- ▶ Thick, creamy, tan head

	IBU's	SRM	OG	FG	ABV
Irish Extra Stout (2015 Cat. 15C)	35-50	25-40	1.052 - 1.062	1.010 - 1.014	5.5-6.5%

# Tasting: Guinness Extra Stout

“Guinness Extra Stout, at least in the United States, is an entirely different beer. At 6 percent, it’s much stronger than the draft or canned versions, and it’s available only in a bottle. . . This beer has an aroma of hops and sulfur. The bitterness and acidity are right up front on the palate, bracing and powerful. The scouring bitterness drives a sharp coffee flavor through to a long bitter finish. This beer is a real throwback - it’s astonishingly assertive.”



Source: G. Oliver, *The Brewmaster's Table* (2003)

# Irish Extra Stout: Aroma

Moderate to moderately high coffee-like aroma, often with slight dark chocolate, cocoa, biscuit, vanilla and/or roasted grain secondary notes. Esters medium-low to none. Hop aroma low to none, may be lightly earthy or spicy, but is typically absent. Malt and roast dominate the aroma.

- ▶ Malt and roast dominate
- ▶ Moderate-high coffee-like aroma with hints of roast grain and cocoa
- ▶ Hop low to none

	IBU's	SRM	OG	FG	ABV
Irish Extra Stout (2015 Cat. 15C)	35-50	25-40	1.052 - 1.062	1.010 - 1.014	5.5-6.5%

# Irish Extra Stout: Flavor

Moderate to moderately high dark-roasted grain or malt flavor with a medium to medium-high hop bitterness. The finish can be dry and coffee-like to moderately balanced with up to moderate caramel or malty sweetness. Typically has roasted coffee-like flavors, but also often has a dark chocolate character in the palate, lasting into the finish. Background mocha, biscuit, or vanilla flavors are often present and add complexity. Medium-low to no fruitiness. Medium to no hop flavor (often earthy or spicy). The level of bitterness is somewhat variable, as is the roasted character and the dryness of the finish; allow for interpretation by brewers.

- ▶ Malt and roast dominate
- ▶ Moderate-high dark-roasted grain or malt
- ▶ Hop bitterness moderate to medium high; balanced with dryness of finish
- ▶ Finish dry and coffee-like or balanced with caramel or malt sweetness
- ▶ Allow for broad interpretation

	IBU's	SRM	OG	FG	ABV
Irish Extra Stout (2015 Cat. 15C)	35-50	25-40	1.052 - 1.062	1.010 - 1.014	5.5-6.5%

# Irish Extra Stout: Mouthfeel

Medium-full to full body, with a somewhat creamy character. Moderate carbonation. Very smooth. May have a light astringency from the roasted grains, although harshness is undesirable. A slightly warming character may be detected.

- ▶ Medium full to full body
- ▶ Creamy
- ▶ Moderate carbonation
- ▶ May have light astringency from roast grains
- ▶ Slight warming from alcohol

	IBU's	SRM	OG	FG	ABV
Irish Extra Stout (2015 Cat. 15C)	35-50	25-40	1.052 - 1.062	1.010 - 1.014	5.5-6.5%

# Irish Extra Stout: Similar Styles

- ▶ vs. Irish Stout (Cat. 15A)
  - ▶ similar flavors and balance
  - ▶ higher strength and intensity
  - ▶ more body, richness, and malt complexity
- ▶ vs. Foreign Extra Stout (Cat. 16D)
  - ▶ similar flavors and balance
  - ▶ lower strength and intensity
  - ▶ typically less malty and less bitter

Didn't find a Local Craft Example of Irish Extra Stout

or an unadulterated  
Foreign Extra (16D)



Instead, Taste a Large Production Example of a Foreign Extra Stout (16D)



## Cooper's Best Foreign Extra Stout 40 IBU 6.3% ABV



	IBU's	SRM	OG	FG	ABV
Foreign Extra Stout (2015 Cat. 16D)	50-70	30-40	1.056 - 1.075	1.010 - 1.018	6.3-8.0%

# Irish Extra Stout Recipe

## *Dublin' Down Irish Extra Stout* (Jared Rowley)

5 GAL – All Grain

OG: 1.061 (1.052-1.062)

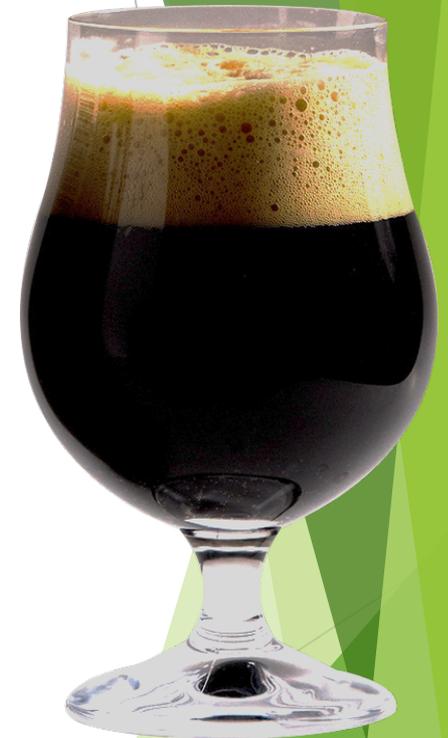
FG: 1.014. (1.010-1.014)

ABV: 6.2% (5.5-6.5%)

IBU: 40 (35-50)

SRM: 40 (25-40)

Maris Otter	8.0 lbs (68.1%)
Flaked Barley	2.0 lbs (17.0%)
Black Roasted Barley (500L)	1.0 lbs (8.5%)
Crystal 80L	0.5 lbs (4.3%)
Chocolate Malt (350L)	0.25 lbs (2.1%)



# Irish Extra Stout Recipe (cont.)

## *Dublin' Down Irish Extra Stout* (Jared Rowley)

Mash @ 120F for 15 minutes

@ 150F for 60 minutes

Grind dark grains fine in coffee grinder

Pre-boil Volume: 7.5 gallons

Boil 120 minutes

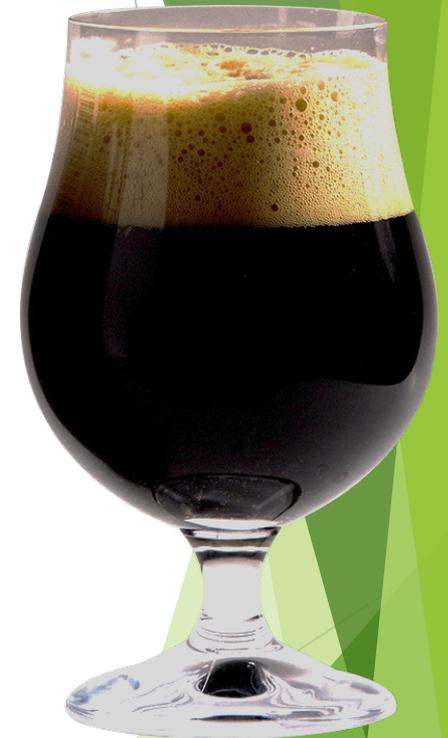
Kent Goldings (5.0% AA)      2.5oz @ 60 min

White Labs WLP004 Irish Ale (Large Starter)

Ferment at 68F

Carbonate to 2.2 vol CO<sub>2</sub>

Can also compete as Foreign Extra Stout (Cat. 16D)



Thank you!



Questions?