



May all your fermentations be Great Fermentations!

12 Penny Scottish Ale – *Special thanks to our friends at Flat 12 Bierwerks for this recipe*

BEER SPECS

Original Gravity: 1.028–1.032

Final Gravity: 1.008–1.010

IBU: 15-18

ABV%: 2.5% - 3.0%

Yield: 5 Gallons

NOT INCLUDED IN KIT

Irish Moss (*for clarity, optional*)

Yeast

Bottle Caps (*53 caps needed*)

Priming Sugar (*5oz or 3/4 cup*)

USEFUL INFORMATION

Wort = unfermented beer

Rack = to transfer from one vessel to another

Pitch = to add yeast to the fermenter

OG = Original Gravity: Specific Gravity Before Fermentation

FG = Final Gravity: Specific Gravity After Fermentation

ABV = Alcohol by Volume

ABW = Alcohol by Weight

IBU = International Bittering Units

Alcohol by Volume Equation:

$\%ABW = (OG-FG) \times 105$

$\%ABV = ABW \times 1.25$

RECIPE DETAILS

3.0 lbs. Light dried malt extract

1.25 lbs. Mild malt, crushed

0.75 lb. Dark Munich malt, crushed

0.10 lb. Roasted Barley malt, crushed

0.10 lb. Midnight Wheat malt, crushed

0.25 lb. Victory malt, crushed

0.25 lb. Flaked Barley

FERMENTABLES

0.5 oz. Willamette hops, added 45 min from the end of the 60 min boil

0.5 oz. Fuggle hops, added 30 min from the end of the boil

1.0 tsp. Irish moss (*optional*), added 20 min from the end of boil

SPECIALTY GRAINS

BOIL SCHEDULE

YEAST SUGGESTIONS: Wyeast #1728 Scottish Ale, Nottingham Dry Yeast.

EQUIPMENT

REQUIRED EQUIPMENT

- 3 gal or larger Brew Pot
- 6.5 gal Primary Fermenter
- Siphon Hose/Racking Cane
- Large Spoon or Paddle
- Air Lock
- Hydrometer
- Thermometer
- Cleanser
- Sanitizer
- Bottles or Kegging System

RECOMMENDED EQUIPMENT

- 7.5 gal Brew Pot
- Wort Chiller
- 5 gal Secondary Fermenter
- Thief
- Oxygen Cylinder
- Aeration Stone
- Auto Siphon



Brewing Instructions:

12 Penny Scottish Ale

PRIOR TO BREWING

1. **Clean and Sanitize** all equipment, tubing, etc.
2. If using liquid yeast, remove package from fridge and 'smack' the pack to release the nutrients. Allow pack to swell for 4-8 hours at room temperature.

BREWING DAY

1. Fill kettle with water and heat to 160F.
 - Partial boil method: fill kettle with as much water as possible while leaving room for grains, malt extract, and boil volume.
 - Full boil method: fill kettle to approximately 6.5 gal water for a volume of 5 gal post-boil.
2. Rehydrate Irish moss in 1/2 cup warm water. Set aside (*optional, for clarity*).
3. Turn off burner (remove kettle from heating element if using an electric stove). Place crushed specialty grains in a muslin bag and soak in **150-155F water for 30 minutes**. Remove bag, and allow remaining water in grains to drain into kettle. Do not squeeze the grains.
4. While stirring, add malt extracts until fully dissolved.
5. Turn the heat on and bring wort to a boil. **WATCH OUT!** Just before the boil, the wort rapidly rises.
6. Follow **Boil Schedule** on opposite page under 'Recipe Details'
7. At end of boil, chill wort as quickly as possible to **60-70F** with a wort chiller or an ice bath. Place lid on kettle while chilling.
8. Siphon or pour cooled wort into fermenter leaving as much sediment behind as possible:
 - Partial Boil: Add sterile water (packaged drinking water) to fermenter to reach 5.25 gal
 - Full Boil: Siphon entire volume of wort into fermenter.
9. **Aerate wort** well by stirring, shaking or oxygenating.
10. Sanitize yeast package and use sanitized scissors to open package. Pitch yeast and attach airlock. If using a yeast starter, pitch entire contents of yeast starter into wort.
11. Move fermenter to a dark place with a steady temperature of **64-72F**.

FERMENTATION

1. Primary Fermentation: Allow beer to ferment for 5-7 days, then proceed to STEP 2 or 3.
2. Secondary Fermentation (*optional*): Transfer beer to a 5 gal carboy, leaving behind the sediment, then proceed to STEP 3.
3. Check gravity prior to proceeding with bottling to ensure fermentation is complete. (Reference *Final Gravity* under 'Recipe Details')

BOTTLING

1. Ensure there is no bubbling in the airlock, and that your beer has reached final gravity.
2. **Clean and sanitize** all bottles, caps, bottling equipment and bottling bucket.
3. Dissolve **3/4 cup (5 oz) priming sugar** in 2 cups boiling water. Boil for 5 min then chill to 70-80F and add to bottling bucket.
4. Siphon beer from fermenter into bottling bucket, being careful not to rouse up sediment on bottom of fermenter.
5. Stir thoroughly but gently to avoid introducing oxygen.
6. Using the bottle filler, fill bottles and cap them.
7. Store bottles at room temperature for **2 weeks** or until carbonated

TIPS FOR SUCCESS

1. Clean AND Sanitize!
2. Avoid using softened water or Reverse Osmosis water.
3. Make sure the specialty grains are loose inside the muslin bag to ensure water reaches the entire amount.
4. Tie muslin bag to handle of kettle to prevent potential scorching on bottom of kettle.
5. Be sure not to exceed 155F while steeping grains to avoid unwanted flavors.
6. Turn off heat source and stir well while adding malt extract to avoid scorching on the bottom of the kettle.
7. Keep a spray bottle of water at hand to spray top of wort if it nears a boil over.
8. While racking, be sure not to introduce oxygen into your beer by splashing or shaking.
9. Maintain a constant temperature during fermentation.
10. Visit www.greatfermentations.com for more brewing tips and tricks.

