



**Grape and Granary**  
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Akron, OH 44310  
800-695-9870

**Tincture of Iodine Test**- Optional- After 1/2 hr of mashing, you can test for the presence of starch by: 1) remove a bit of the liquid part of the mash (no grain husk) and put it on a white plate. 2) put a drop of tincture of iodine (available at a pharmacy) beside the drop of mash. 3) tilt plate so that drop of iodine runs into mash sample. Watch for any color change. If mash sample turns black/blue, continue mashing. If iodine and mash sample stay red, mashing step is complete.

## **ALL GRAIN BEER BREWING KIT**

AG70  
AMERICAN IPA- ALL GRAIN

### Ingredients

#### Malt

11 lbs Briess Pale Ale  
1 lb Crystal Malt  
.5 lb Munich Malt  
1 oz Chocolate

#### Hops

1 oz Horizon (boiling)  
.5 oz Centennial (flavor)  
.5 oz Cascade (flavor)  
.5 oz Centennial- (flavor)  
.5 oz Cascade- (aroma)  
.5 oz Cascade- (aroma)  
.5 oz Centennial- (aroma) Dry Hop

### Equipment

(1) 33 qt or larger boil kettle  
(1) 20 qt or larger sparge kettle  
thermometer  
lauter tun  
wort chiller (optional)  
spoon  
beer hydrometer  
pitcher  
tincture of iodine (optional)

### Recipe Specifics

batch size- 5 us gallons  
total grain- 12.5 lbs  
anticipated sg 1.066  
anticipated color- 12 srm  
anticipated ibu- 66  
efficiency- 75%  
boil time- 90 minutes

### Process Specifics

Mash Water quantity- 4.2 gallons  
pre-boil wort size- 6.5 gal  
strike water temp- 158 deg f.  
saccharification rest- 152 deg f for 60 minutes  
mash-out- 168 deg f. for 5 minutes  
sparge water temp- 170 deg. f.  
sparge time- 45-60 minutes  
fermentation temperature- 60-75 deg f.

Step 1- Begin by measuring the proper quantity of mash water into your mashing or boil kettle. Be sure that the water has no chlorine. Bring water temperature of mash water to strike water temperature.

step 2- Make sure grains are milled. Pour grains into mash kettle at strike temperature. Stir well. Check temperature of mash. Mash temperature should be at approximately saccharification temperature. If it is not, adding small quantities of boiling or cold water will adjust mash temperature.

step 3- Allow grains to 'stew' at saccharification temperature for 60 minutes. Stir the mash every 15 minutes or so to ensure an even temperature throughout the mash.

step 4- Fill the 20 qt kettle with 5 gallons of brewing water. Bring this water to approx. 170 deg. F. . Maintain this temperature throughout the mashing process so that this sparge water is ready to go at sparge time.

step 5- Optional step- raise mash temperature to 168 deg. f. . This step is called a mash- out. Hold the mash temperature at 168 deg. f. for 5 minutes. This helps to stabilize enzyme activity and warms the sugars so that they can be extracted more efficiently. The temperature of the mash can be raised to 168 deg. f. by adding heat to the bottom of the mashing vessel or by infusing the mash with small quantities of boiling water.

step 6- Transfer mash into lauter tun. Open valve on lauter tun and collect first runnings into a pitcher. Slowly pour first running over top of grain bed and allow to drain back through grain bed. Continue recirculation of first runnings until clarity improves.

step 7- Once clarity improves, begin collecting runnings into boil kettle or other container. The sparging process should take approximately 45-60 minutes. Restrict the flow of the wort exiting the lauter tun so that run off takes 45-60 minutes. Begin pouring 170 deg. f. . sparge water over the top of the grain bed one pitcher at a time. Try not to allow grain bed to run dry or compaction of grain bed could occur.

step 8- Continue sparging until approx. 6 1/2 gallons of wort is collected. Transfer wort to boiling vessel. Bring the 6 1/2 gallons of wort to a boil. Allow wort to boil for 30 minutes before adding bittering hops. Add the bittering hops 60 minutes before the end of the 90 minute boil. If you have flavoring hops, add them 15 minutes before the end of the 90 minute boil (or as directed on the package of hops). If you are using an immersible wort chiller, place it in the boiling wort with the flavor hops 15 minutes before the end of the boil. Irish moss should also be added 15 minutes before end of boil (whirl floc tablet). If you have aroma hops, add them 2 minutes before the end of the 90 minute boil (or as directed on the package of hops).

60 minutes before end of boil

\* add bittering hops

15 minutes before end of boil

\* add irish moss

\*add flavoring hops if any

\*add immersion chiller if any

2 minutes before end of boil

\* add aroma hops if any

Dry Hop- Add hops to secondary fermenter for 2-3 days. Rack when beer is clear and stable.

step 9- After 90 minute boil, cool wort to fermentation temperature. Siphon or pour wort into primary fermenter. Attempt to leave any trub (sediment) behind. If you have less than 5 gallons of wort in primary fermenter, cool clean dechlorinated

water may be added to increase volume. Check specific gravity with your hydrometer. You should find that the gravity is approximately that of anticipated s.g..

step 10- Add yeast and ferment at fermentation temperature. Call if you have any questions

330-633-7223

## **American IPA**

**Overall Impression:** A decidedly hoppy and bitter, moderately strong American pale ale.

**History:** An American version of the historical English style, brewed using American ingredients and attitude.

**Ingredients:** Pale ale malt (well-modified and suitable for single-temperature infusion mashing); American hops; American yeast that can give a clean or slightly fruity profile. Generally all-malt, but mashed at lower temperatures for high attenuation. Water character varies from soft to moderately sulfate.

### **Commercial Examples:**

Bell's Two-Hearted Ale, AleSmith IPA, Russian River Blind Pig IPA, Stone IPA, Three Floyds Alpha King, Great Divide Titan IPA, Bear Republic Racer 5 IPA, Victory Hop Devil, Sierra Nevada Celebration Ale, Anderson Valley Hop Otter, Dogfish Head 60 Minute IPA, Founder's Centennial IPA, Anchor Liberty Ale, Harpoon IPA, Avery IPA