

# Makaha Rays Pale Ale

1. Fill your pot with 2 - 3 gallons of cool water (as much as your pot will comfortably hold at a full boil). Turn the heat on and bring the water to 160 degrees. Once the water has reached 160, put your crushed grains into the grain bag, pull the drawstring tight and put the grain bag into the pot of water. Dip the bag a few times to ensure that all the grains get wet. Turn off the burner or remove the pot from the heat source and steep the grains for 30 minutes. **Do not BOIL THE GRAINS.**

GRAINS USED:     **½ lb Dextrin Malt**  
                          **½ lb Honey Malt**

EXTRACTS USED: **7 pounds of Pale malt extract**

2. When the 30 minutes are up, remove the grains from the water, drain, **without squeezing**, the grain bag. Remove the outer bag from the malt extract. Cut off some of the excess top of the bag holding the extract and carefully pour the extract into the pot. Stir the extract until it dissolves. **To avoid scorching the extract:** Do not return the pot to heat until all the malt extract syrup has been added and dissolved. Once the extract is thoroughly dissolved, turn the heat back on and bring the mixture (“wort”) to a boil. **WATCH FOR BOIL OVERS WHEN ADDING HOPS**
3. Add HOPS according to the schedule below:
  - **1 oz Tettnanger at 60 minutes.**
  - **½ oz. Tettnanger at 10 minutes.**
4. **Turn off heat and cool the wort. It is critical that you maintain sanitization as the wort cools.** When wort is at or below 80 degrees, carefully pour wort into a sanitized fermenter and top off with cool water to bring total volume to 5 gallons. Aerate wort well before pitching.

Use **ONE** of the following yeast options:

## **DRY YEAST: 2 pkgs. Muntons Yeast**

Rehydrate the yeast by pouring both packets into about a pint of pre-boiled, lukewarm water. Allow to sit for about 5-10 minutes, then stir using a sanitized spoon. Add this mixture to your cool wort. Ferment between 65-75°F.

## **LIQUID YEAST: White Labs 008**

Follow the directions printed on the plastic vial. Sterilize the outside of the package before opening. Ferment between 65-75°F.

5. Attach your airlock and fill the airlock halfway with cooled boiled water. Put fermenter in a cool, dark place to begin fermenting. NOTE: A water bath may be used ensure the fermentation temperature stays in the 70-75 degree range. Use 2 or 3 16oz frozen water bottles, changing them out approximately every 8 hours as necessary. **Fermentation will be complete in 10-14 days.**
6. Bring two cups of water and 3/4 cup Corn Sugar to a boil and simmer for 10 minutes or microwave for 2 minutes. Add the sugar solution to your sanitized bottling bucket and rack (siphon) the beer onto the sugar solution. You are ready  
**CAUTION: If finished volume is less than 5 gal, use 1 TBS less corn sugar per half gal**

CHECKLIST:

YEAST AT ROOM TEMPERATURE

CLEAN EQUIPMENT

ICE

SANITIZE

DATE/TIME START: \_\_\_\_\_ DATE TO 2<sup>ND</sup> \_\_\_\_\_ BOTTLE/KEG \_\_\_\_\_

Original Gravity \_\_\_\_\_ Specific Gravity \_\_\_\_\_ Final Gravity \_\_\_\_\_

Wort Temperature at Pitch: \_\_\_\_\_

Fermentation Area Temperature: \_\_\_\_\_

NOTES:

DATE SERVED/COMMENTS: