Brew In A Bag

One Kettle - One Burner - One Bag

(is) All Grain Brewing
Do you ever homebrew using the brew in a bag method?

Voting for this poll has ended

View results for: Do you ever homebrew using the brew in a bag method?

Statistics:

- Yes, occasionally (279)
- Yes, BIAB is how I usually home (588)
- No, but I would like to learn (469)
- No, I am not interested (441)
It’s All About Endosperm

Figure 1
What’s the difference?
Mash Mash Mash Mash Mash

- Mashing 3V or BIAB is essentially the same except that wtg ratio is double
- Time is the same
- There is no “grain bed” in BIAB and the water to grain contact is greater (grind)
- Stirring is acceptable but not necessary
Brewing With A Filter

- 3V brewing - filter is grain bed
- BIAB bag is the filter
Steps and Process

Rex Slagel - Brew In A Bag Supplies LLC - “The Brew Bag”
Brian Phad - Multiple Brewing Awards using BIAB method
Steps and Process

- Heat FULL volume water to strike temp
- Flame out - insert bag and secure
- Add grain and stir well
- Cover and insulate
- Mash for 60 - 75 minutes
- Unwrap insulation, lift bag and drain
- Measure OG - flame on
- Use bag as hop bag - add weight
Cover and Insulate
Lifting The Bag

Rex Slagel - Brew In A Bag
Brian Phad - Multiple Brew
Hop Bag
Full
Contact =
Higher
Utilization
Water Volume and Efficiency

- Experiments (Braukaiser & Briggs) have proven that higher H2O to grist - 2.6 qt per lb - produces higher brewhouse efficiency while conversion is the same - getting the sugars into the kettle is what matters.

- There is NO sparge in BIAB - it is 100% of 100% - sugars in bag/grain are not needed essentially 1st and 2nd runnings

- Sparging the grain in the bag will dilute
Logic of Using a Bag

- Lower equipment cost $200 vs $500 +
- Less time (no sparge, easier clean up)
- NEVER a Stuck Sparge - Eliminate the manifold
- Ability to brew with sticky grains - rye, wheat etc
- Less Space
- Less wort lost to grain absorption-12 vs 18 oz per LB
- Finer crush of grain - faster more efficient conversion - .33 to .95 - 10% difference
Logic of a Single Infusion Mash

- Single step saccharification produces a more fermentable wort (@ 149° to 162°) with fewer steps = less time.
- While the temperature is fixed and the enzymes are working to convert starch, a finer grind (down to .33) allows faster, more complete hydration of the endosperm and enzymatic action is enhanced.
Bag Material Matters

Paint
Strainer
35 TPI
Muslin
35 TPI
Voile
90 TPI
### The Numbers - Five Gal Batch

- **5.50 gals into fermenter**
- **0.50 to 1.0 gals trub loss**
- **10 to 15% Evaporation**
- **10 to 12 oz absorbed by grain**

- WTG Ratio s/b 2.3 to 2.6 quarts per lb grain
- Lower Mash Temps require longer mash to convert because of different types of enzymes - 143° to 148° - 75 to 90 min
- Higher Mash Temps 149° to 162° - 60 to 75 minutes
- Squeezing does NOT impart Tannins - 170° or above

---

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.50 - Fermenter</td>
<td>5.50</td>
</tr>
<tr>
<td>0.75 Trub - both</td>
<td>0.75</td>
</tr>
<tr>
<td>0.94 12% Evap</td>
<td>0.94</td>
</tr>
<tr>
<td>1.125 Absorption</td>
<td>1.125</td>
</tr>
<tr>
<td>8.3 gallons = 8 gal 38 oz</td>
<td>8 gal 38 oz</td>
</tr>
<tr>
<td>33 Q /12 lbs</td>
<td>33 Q /12 lbs</td>
</tr>
<tr>
<td>2.75 WTG</td>
<td>2.75</td>
</tr>
</tbody>
</table>
Cooling Methods

- No Chill - yes it works - that is all.
- Immersion Chiller - Least Efficient - #3
- Counter-Flow - #2
- Plate Chiller - #1 - NO Particulates in wort

4 gallons went through this funnel mesh