

Andwell Brewery is a new family business (2008), with a strong background in the food business, designed around a robust understanding of the industry processes, producing four craft beers for delivery within a 40 mile radius of Basingstoke. Consistency, a vital ingredient for any Quality process, is a key objective supported by modern brewing equipment (new brewery opened 2011) and an impressive mixture of traditional and modern raw materials, process measures and experience. There is a clear commitment to excellence.

### The Process

PROCESS	RAW MATERIALS & EQUIPMENT	CHARACTERISTICS
<b>WATER</b>	Tap water.	Treatment plant to correct for calcium levels and acidity.
<b>CEREAL</b>	English Maris Otter barley (mainly). Occasionally blended with Rye.	Poor barley crop in 2011 may require blending with other sources.
<b>CONVERSION OF BARLEY TO MALT</b>	Traditionally floor-malted, produced by Warminster Maltsters (founded 1879)	Malt is dampened and kept moving on a warm floor to trick it into starting to grow; this converts its starch in the cereal into glucose and sucrose
<b>ROASTING</b>	Various degrees for the different beers.	From just dried, crystal malt to dark roast
<b>MILLING OF MALT</b>	Small electrically driven, twin roller mill.	Rollers set to provide a degree of milling judged by eye to provide correct size of grist.
<b>ADDITION OF GRIST</b>	Mix chamber at head of Mash Kettle.	The grist is slowly introduced in a chamber above the Mash Kettle, being sprayed on by the hot liquor (1,500 litres@ 64°C). This produces the liquid/solid mixture known as mash.
<b>MASH</b>	20 barrel (3,273 litres) Mash Kettle steam heated.	The mash is brought up to 68°C by a steam heated jacket (130°C) on the kettle, which takes about 1 hour. This both stops the enzymatic conversion of starches to fermentable sugars, and makes the mash and wort (liquid element of mash) more fluid.
<b>HOPS</b>	Sourced worldwide and delivered in pellet form in aluminium foil sealed bags.	Hops are added for two purposes: 1-to increase the $\alpha$ acid content (bitterness of the drink) and 2-to add flavours dependent on the characteristics of the beer desired: citrus, flower, grass,... The brewers art is to select a blend of hops to give a distinctive beer that will have market appeal. The hops are added in pellet form, the pellets being compressed extruded flowers from the hop plant. The pellet is a more sensible solution for the small brewery who is limited on space and can not use a complete hop pocket within a single brew (to maintain consistency and freshness).
<b>LAUTER TUN</b>	20 barrel Lauter tun. Heated with steam at 130°C through jackets.	A lauter tun is the vessel with a false bottom used to separate the wort from the mash. The solids, not the false bottom, form the filter and hold back small solids, allowing the otherwise cloudy mash to run out of the

		<p>lauter tun as a clear liquid.</p> <p>In this vessel, volume and specific gravity are checked so contents can be re-adjusted.</p> <p>The <math>\alpha</math> acid hops are added at this stage and the kettle boiled for 90 minutes. The consistent heat from the jackets avoids caramelisation of the sugars.</p> <p>At the end of the boil, the aromatic hops are added.</p>
<b>WHIRLPOOL KETTLE</b>	20 barrel	To avoid the need for filtering the whirlpool kettle collects all the solids in a cone at the base.
<b>HEAT EXCHANGER</b>		The wort is pumped from the whirlpool kettle through the heat exchanger, which delivers it at 20°C, whilst heating the reverse flow water to 78°C for use elsewhere in the process.
<b>OXYGEN</b>		Oxygen is injected to the cooled wort, to kick start the fermentation of the yeast.
<b>YEAST</b>	A two strain yeast, maintained in the brewery laboratory	An important edge Adwell believe they have over other microbreweries. They do not use commercially available yeasts from a packet, as they believe this two strain type gives better flavour to their beers.
<b>FERMENTERS</b>	20 barrel Glycol jacketed to maintain temperature at 20°	Yeast added at the top of the tank. Fermented for about four days. Monitored for specific gravity, being the best simple correlation to alcohol levels. Cooling from the glycol jacket gives consistent temperature; without cooling it is estimated temperature would peak at 38°C
<b>FININGS</b>		Finings are added to take out any yeasts and protein left in the beer. This takes about 6 hours at 10C°
<b>CASKS / BOTTLING</b>		Beer can be filled into casks, or specially made beers sent to a contractor for bottling.

In addition to the present range of 4 beers, Adwell are planning to introduce the almost extinct PORTER ALE, which had been abandoned in the 1980s by most breweries in favour of fizzy lagers and keg beers.



Notes by Richard KIRBY, Chairman of Thames Valley Branch of the Chartered Quality Institute  
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