



MASHING TECHNIQUES

Single Infusion: – A single step process where the grain is added to water at strike temperature (78°C). The term ‘strike temperature’ refers to the temperature of the water PRIOR to adding the malt. When the malt is added (which is at room temperature) it settles to the appropriate temperature for *mashing* which is around 65°C -68°C and held for the duration of the mash.

Step Infusion: – This is where the temperature is raised gradually throughout the mashing stage in three steps to ensure the maximum benefit from the grain. (55°C Protein Rest – 65°C Mashing – 78°C Sparging/Mash off)

Decoction: – The most complex of mashing techniques. Involves raising and then lowering the temperature of the mash by taking parts of the mash and boiling them separately, then reintroducing them into the mash to raise the over all temperature. Traditionally used for European Lagers.

THREE TIER MASHING DESIGN: (Gravity Fed)

HOT
LIQUOR
TANK

Hot Liquor Tank: Holds the hot water for sparging your grain. Preferably insulated to keep your sparging water at the right temperature

MASH
TUN

Mash Tun: An insulated vessel equipped with a *‘false bottom’* which allows the grain to drain without being sucked through into the boiler.

BOILER

Boiler: Usually made from stainless steel, equipped with an element. Alternatively, a pot can be used and placed on a heat source such as a gas burner or stove.

DIRECTIONS: (Single Infusion Method)

Mashing: Grain is added to a specific amount of water at *strike temperature* (78°C) which stabilises out to around 65°C -68°C.

GRAIN (Kgs)	Mash Liquor at Strike Temperature (78°C)
3.0	7.0L
3.5	8.5L
4.0	10.0L
4.5	11.5L
5.0	13.0L
5.5	14.5L

Once the grain has been sufficiently mixed (taking care not to let the starches in the grain clump by adding too much at once) it is left to sit for between 60-90mins. During this time enzymes in the malt convert the starches in the grain into sugars which will be able to be fermented.

Sparging: At the end of the mashing stage, the sweet liquor is allowed to drain into the boiler. Once the grain bed has been drained, it is then rinsed with hot water from the *Hot Liquor Tank*. This process deactivates the enzymes that have been working during the mashing stage and rinses out remaining sugars in the grain.

Boiling: Boiling serves two main purposes; to kill off any bacteria in the sweet liquor and infuse hop bitterness, flavour and aroma to your beer. Boiling can go from anywhere from 60-90 minutes. Bittering hops are added just as it comes to the boil which allows them the maximum time for the hop alpha and beta acids to be utilised. Flavour hops are added 15-10 minutes before the end of the boil and aroma hops right at the end. The less time in the boil will mean less bitterness but more flavour and aroma.

Chilling: At the end of the boil, it is important to chill the beer as fast as possible so that it may be transferred into the fermenter and the yeast pitched. This is usually done by immersing a '*chilling coil*' into the boiler and running cold water through it.

Fermenting: Once the beer is at a suitable temperature for the yeast to be pitched, it is transferred into the fermenter. A *Specific Gravity* reading is taken, the yeast is then pitched and the brew put to bed.



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