

BOOSTING FINAL GRAVITY, BODY AND SWEETNESS

Other than reducing hop additions or IBUs, three ways to alter the balance:
alcohol, fermentability, attenuation

Alcohol in water is sweet - all things being equal, higher levels will taste sweeter.

Fermentability

100% unfermentables, good for fixing beers at bottling time

Calculate as 100% extract (45 SG point-gallons/lb) and add to FG.

- Lactose: 1/6 sweetness of dextrose, mainly used for body e.g. milk stout
- Malto-dextrin: not very sweet, disperse in cold water (like starch) before boiling
- Mannitol, xylitol or sorbitol - experimental, watch for laxative effect

And if you're shameless:

- Stevia (in stout?) or SplendaTM (becoming popular with cidersmakers)

Specialty malts with strong sweetening or body contributions

Cara Pils, Cara Foam, etc. add to perceived body

Caramel malts, crystal, special, Caramunch, etc.

Low colour - plain sweetness predominates

Medium - caramel flavours for "malty" effect

Dark - prune and raisin flavours

Honey maltTM produces a distinct sweet flavour - very potent in ales, moderate in lagers

Mash conditions - to increase gravity, body and sweetness:

Increase 1-1.5°C (2-3°F) at a time

Not mashing longer than necessary - infusion mash for 30 minutes then mash out

Try 60-70 mash schedule, with only 5-10 minutes at 60°C (140°F) and very fast boost to 70°C (158°F) to complete conversion

Keep mash stiff - the higher maltose concentration inhibits β-amylase

Runoff & sparge practice

Do a mash-out to stop conversion and help recovery of dextrins

Use larger grain bill for more first runnings and reduced sparge volume

Non-fermentables are larger molecules than maltose and don't diffuse as quickly out of the grain particles. This will actually show up in your FG!

Attenuation

Yeast strain

Attenuation differences on standard wort (as reported) are subtle

Flocculence is more important in practice

dusty yeasts will ferment to dryness

flocculating yeast can be racked off to preserve some gravity

Rousing

A super-flocculent yeast (Ringwood Ale, in particular) allows control of FG - rouse yeast 2x/day until diacetyl and gravity reach desired levels.

Temperature

A yeast fermented on the lower end of its comfort range will finish a little higher.
Good for 60/ Scotch ales.

Temperature crashing is commonly used for cider - you could experiment

Pitching rate

Sharply reduced (1/6 to 1/10 of usual) yeast pitch will have a range of effects on flavour, but a higher FG should result.

A final word:

Residual dextrins and sugars are a tasty treat for contaminants. Sanitation becomes even more critical. You will likely find that your bottled beer dries out over a period of months, so when it's just the way you wanted it, drink up!

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