

## Duss - 4.9%

### Altbier

Author: Stu.brü

Type: All Grain

IBU : 43 (Tinseth)  
 BU/GU : 0.87  
 Colour : 32 EBC  
 Carbonation : 2.4 CO2-vol

Pre-Boil Gravity : 1.045  
 Original Gravity : 1.049  
 Final Gravity : 1.012

### Fermentables (4.18 kg)

3.85 kg - Pilsner 4 EBC (92.2%)  
 277 g - Crystal Malt 130 EBC (6.6%)  
 50 g - Black Malt 1300 EBC (1.2%)

### Hops (100 g)

40 min - 60 g - Select Spalt (Whole) - 4.7% (...  
 5 min - 25 g - Select Spalt (Whole) - 4.7% (4...  
 0 min - 15 g - Select Spalt (Whole) - 4.7%

### Miscellaneous

Mash - 1 g - Calcium Chloride (CaCl2)  
 Mash - 1 g - Canning Salt (NaCl)  
 Mash - 1 g - Gypsum (CaSO4)  
 10 min - Boil - 1 items - Protafloc

### Yeast

1 pkg - Lallemend (LalBrew) Windsor Yeast

### BIAB (No sparge)

Batch Size : 12.5 L  
 Boil Size : 17.61 L  
 Post-Boil Vol : 16.15 L

Mash Water : 20.04 L  
 Sparge Water : 0 L  
 Boil Time : 40 min  
 Total Water : 20.04 L

Brewhouse Efficiency: 46.8%  
 Mash Efficiency: 58%

### Mash Profile

High fermentability  
 69.8 °C - Strike Temp  
 66 °C - 45 min - Infusion

### Fermentation Profile

Ale  
 20 °C - 14 days - Primary

### Water Profile

From Yorkshire Water Website (Style - Düsseld...  
 Ca 105 Mg 10 Na 37 Cl 80 SO 141

SO/Cl ratio: 1.8

Mash pH: 5.57

### Measurements

Mash pH:

Boil Volume:

Pre-Boil Gravity:

Post-Boil Kettle Volume:

Original Gravity:

Fermenter Top-Up:

Fermenter Volume:

Final Gravity:

Bottling Volume:



32 EBC

### Recipe Notes

2.6ml CRS added to bring down alk to 75 (91) - double check before brewing.