Kerry Bio-Science

FermCap
FermCap – Repitching experiments

1st Pitching

![Graph showing specific gravity over time for 1st pitching with and without Fermcap.]

2nd Pitching

![Graph showing specific gravity over time for 2nd pitching with and without Fermcap.]

3rd Pitching

![Graph showing specific gravity over time for 3rd pitching with and without Fermcap.]

4th Pitching

![Graph showing specific gravity over time for 4th pitching with and without Fermcap.]

---

1.050
1.045
1.040
1.035
1.030
1.025
1.020
1.015
1.010
1.005

Without Fermcap
With Fermcap

Without Fermcap
With Fermcap

Without Fermcap
With Fermcap

Without Fermcap
With Fermcap

---

Specific Gravity

Time (days)

0 1 2 3 4 5 6

0 1 2 3 4 5 6

0 1 2 3 4 5 6

0 1 2 3 4 5 6
FermCap – Repitching experiments

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Fermcap treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1\textsuperscript{st} Pitching</td>
<td>111 \ 114</td>
<td>126 \ 128</td>
</tr>
<tr>
<td>2\textsuperscript{nd} Pitching</td>
<td>90 \ 87</td>
<td>102 \ 103</td>
</tr>
<tr>
<td>3\textsuperscript{rd} Pitching</td>
<td>110 \ 112</td>
<td>124 \ 121</td>
</tr>
<tr>
<td>4\textsuperscript{th} Pitching</td>
<td>94 \ 91</td>
<td>106 \ 105</td>
</tr>
</tbody>
</table>

Following removal of the yeast for repeated pitching, the fully fermented beers were decanted, filtered through a horizontal leaf filter and checked for foam stability.

**Head retention values/foam collapse time = Rudin(secs)**
The desired CO₂ purity is reached earlier in the fermentations using FermCap:

➢ there is no entrapped air in the foam (because there is virtually no foam !)
➢ the headspace represents a smaller volume and is faster to replace it by the pure CO₂ produced by the yeast
Determination of residual polydimethylsiloxyane (PDMS) in Fermcap treated beer and yeast:

- Nuclear magnetic resonance spectroscopy was used for the quantitative determination of PDMS in beer and yeast samples.
  - 60ppm (6g/hl) of Fermcap is equivalent to 12ppm of PDMS
  - A small amount of PDMS (0.18ppm) was detected in the supernatant of the Fermcap treated beer, whereas a larger amount was present in the yeast (5.82ppm).
  - The remaining PDMS (6ppm) was therefore adsorbed onto the vessel walls.
  - Following filtration the residual PDMS that was present in the supernatant is completely removed.
Determination of residual polydimethylsiloxane (PDMS) in Fermcap treated beer and yeast:

- **Conclusions:**
  - Fermcap S is classified as a "Process Aid" because of its novel feature of being completely removed from the beer under normal processing conditions.
  - These studies show that Fermcap is adsorbed onto the surface of the yeast, vessel walls and filter media.
  - The use of NMR accurate to 0.02ppm PDMS cannot detect Fermcap S in finished beer.
• KBS has a complete range of products for the brewer

• Products are fully Kosher approved and GRAS/Food approved.

• Packaging from 25kg –1000kg (liquids). Also possibility of customised packaging & tap fittings on IBCs.

• KBS provides full tech support on products (lab and brewery optimisation). NB based on extensive global experience.

• Fermcap range compatible with cross flow filtration (ceramic membranes).

• Use the Kerry Bioscience ‘Fermcap- cost saving calculator’ to see the full benefits in process.