
# Cola
# Increasing carbonation shelf-life with $CO_2$Sustain®

# Objectives

- Current carbonation level at the end of shelf-life is 6.4g/l
- Can the carbonation level at the end of shelf-life be extended to 5.8g/l
- By the addition of $CO_2$ Sustain®  to give a sensory match for fizziness

# Sample preparation

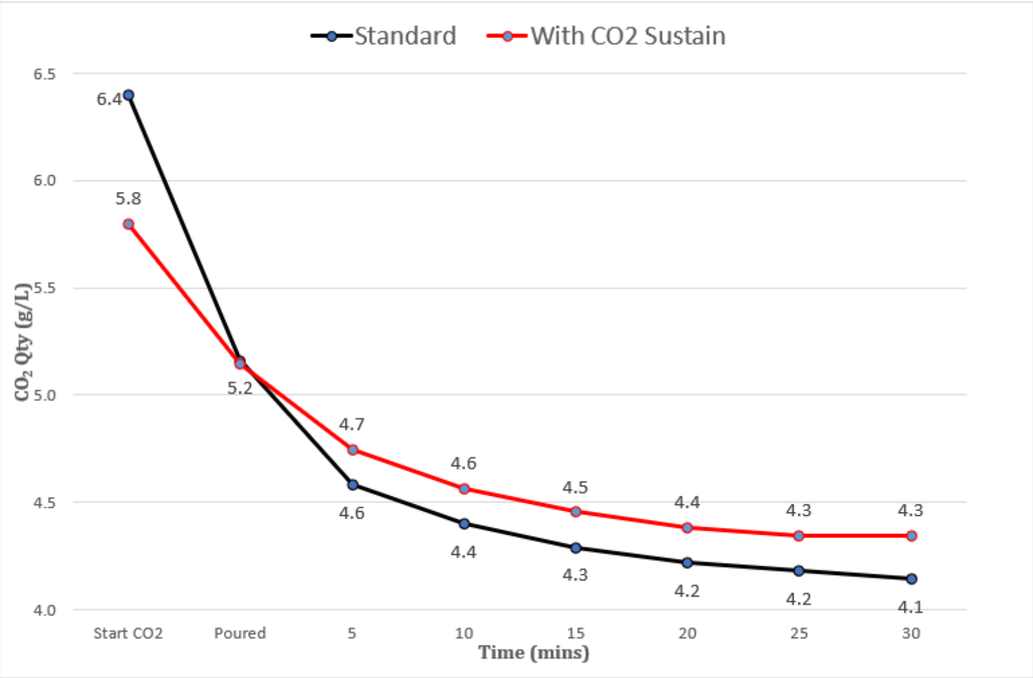
- Cola was re-carbonated on an Armfield carbonator to 2 carbonation specifications 6.4g/l and 5.8g/l
- $CO_2$ Sustain® was dosed @ 0.1g/l of 2501 into the bottles with 5.8g/l of $CO_2$ labelled ‘A’
- Samples were filled into glass bottles and refrigerated overnight

# Test methods

- A sensory panel (8 people) completed a blind taste where the participants were asked whether the $CO_2$ Sustain® sample ‘A’ was:
  - Less fizzy than sample B (blank)
  - More fizzy than sample B
  - No difference
- The participants drank directly from the bottle.
- The bottles were then tested for carbon dioxide loss on pouring
- The 275ml sample bottle was poured gently into a glass vessel on an analytical balance
- The weight of $CO_2$ lost was recorded over a 30-minute period

# Results - Sensory

- Of the 8 panelists, 5 people recorded the sample with $CO_2$ Sustain® as being fizzier
- 3 people recorded no difference




# Results – Carbon dioxide retention on pouring

- The graph shows that the sample with $CO_2$ Sustain® retained $CO_2$ more when poured
- At the point of pouring, both samples recorded a carbonation level of 5.2g/l despite having different starting carbonation levels of 6.4g/l and 5.8g/l (with $CO_2$ Sustain®)
- The final level of carbon dioxide retained after 30 minutes was 4.3g/l for the sample with $CO_2$ Sustain® and 4.1g/l for the standard sample

# Conclusions

- Adding $CO_2$Sustain® has allowed a sensory match at 0.6g/l lower $CO_2$
- If the beverage at the end of carbonation shelf-life is losing 01.g/l $CO_2$/week then 0.6g would equate to an extra 6 weeks
- Also presents the possibility to lightweight the PET bottle