

# Challenge test in pilot plant shows the inhibitory effect of organic acid against psychrotrophic *Clostridium botulinum* in low-salt meat products

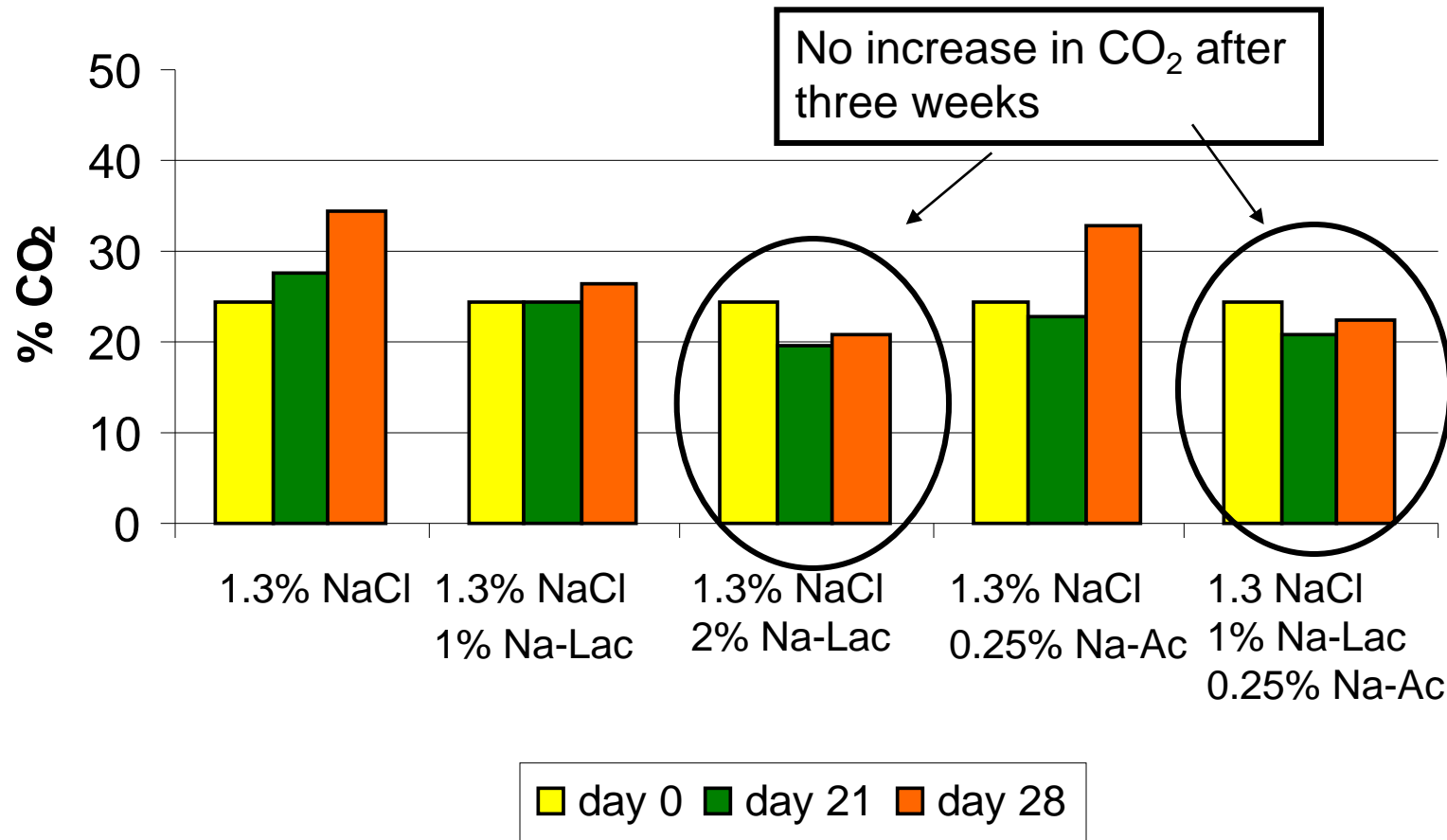
ICoMST 2009  
Session 5 – poster presentation

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# Materials and methods

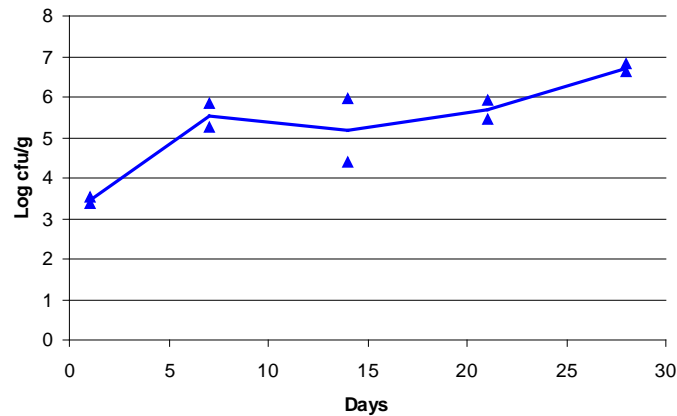
- Inoculation and meat processing in pilot plant:
  - Four-strain cocktail of spores from psychrotrophic *C. botulinum* strains
  - Heated to 75°C
  - Sliced and packed in 30% CO<sub>2</sub>/70% N<sub>2</sub>
  - Stored at 5°C and 8°C
- Analysis during storage:
  - O<sub>2</sub> and CO<sub>2</sub> in headspace
  - *C. botulinum* (RCM and mod. SFP agar)
  - Lactic acid bacteria (APT)

# CO<sub>2</sub> content at 5°C

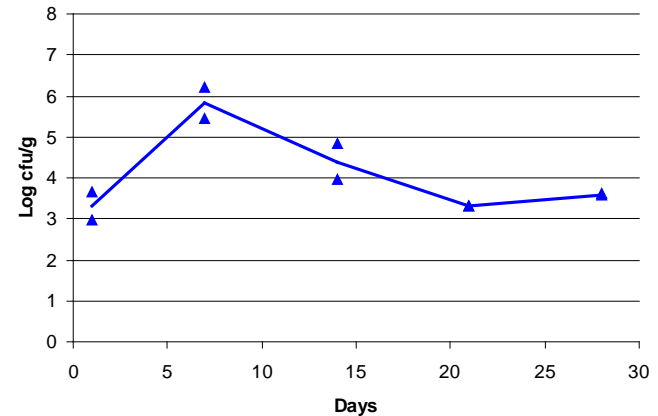


# Growth of *C. botulinum* on SFP at 8°C

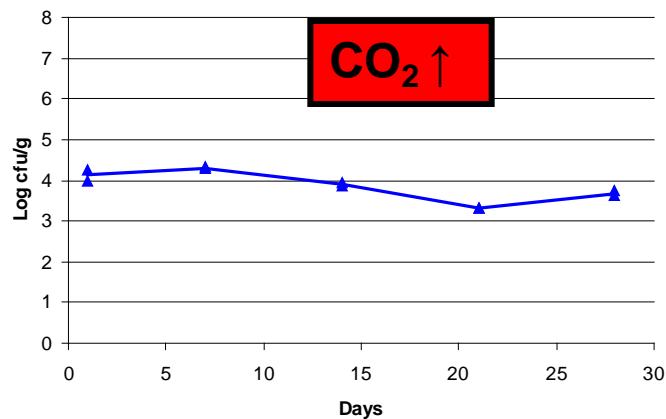
A) Control 1.3% NaCl



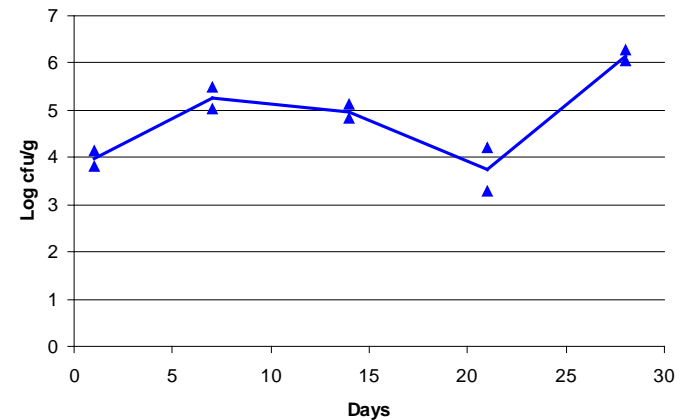
B) 1% Na-lactate



C) 2% Na-lactate



D) 0.25% Na-acetate



# Conclusion

- Psychrotrophic *C. botulinum* grows in MA-packed meat products with 1.3 % NaCl (~2% salt/water) stored at 5°C and 8°C
- At 5°C, growth can be inhibited by addition of 2% Na-lactate
- At 8°C, all combinations failed to inhibit growth for 4 weeks
- Growth of psychrotrophic *C. botulinum* is difficult to measure using traditional microbial methods
- Complementary tests on growth/metabolic activity are necessary
- Challenge test in pilot plant gives valuable results for risk assessment



**Thank you for your attention  
and welcome at poster PS5.07**