

Sensory quality of beef patties inoculated with strains of *Carnobacterium maltaromaticum* with potential as biopreservatives

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INTRODUCTION

Biopreservation is a natural tool used to extend the shelf life and to enhance the safety of foods by applying naturally occurring microorganisms and/or their inherent antimicrobial compounds.

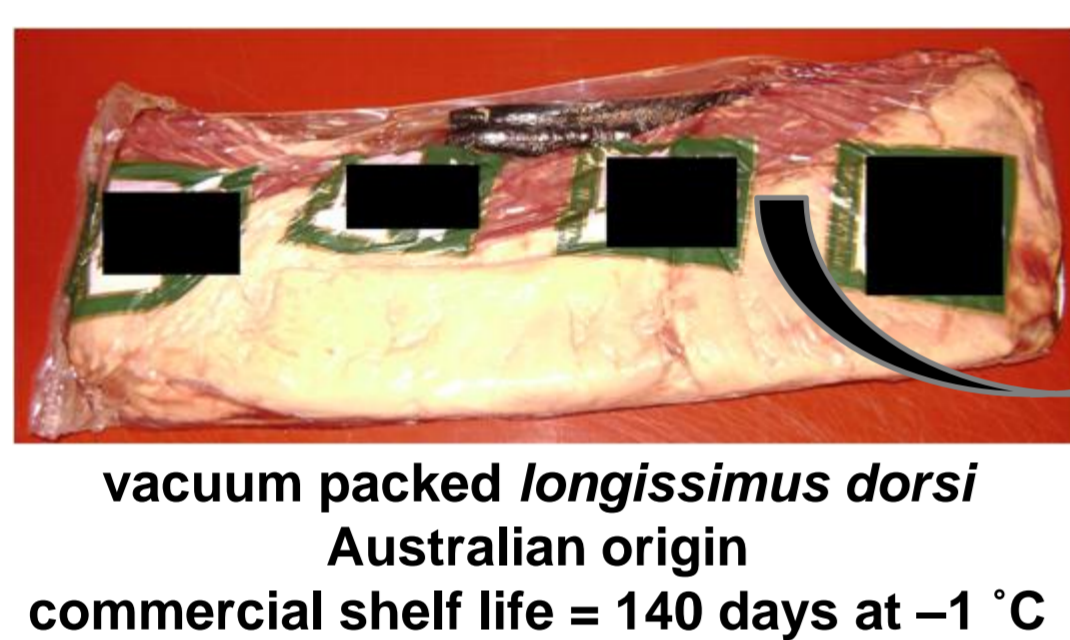
Carnobacterium maltaromaticum is a lactic acid bacteria (LAB), and many LAB associated with meat are known for their bacteriostatic activity against other strains, species or genera of bacteria.

Nevertheless, undesired effects of *Carnobacterium* on food quality have been reported.

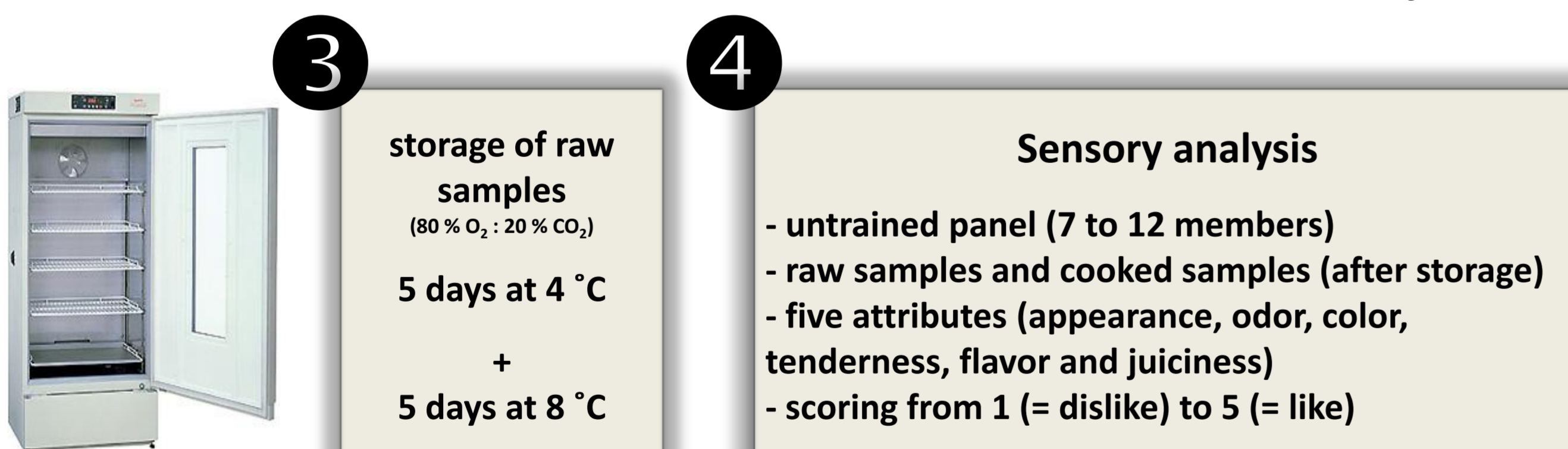
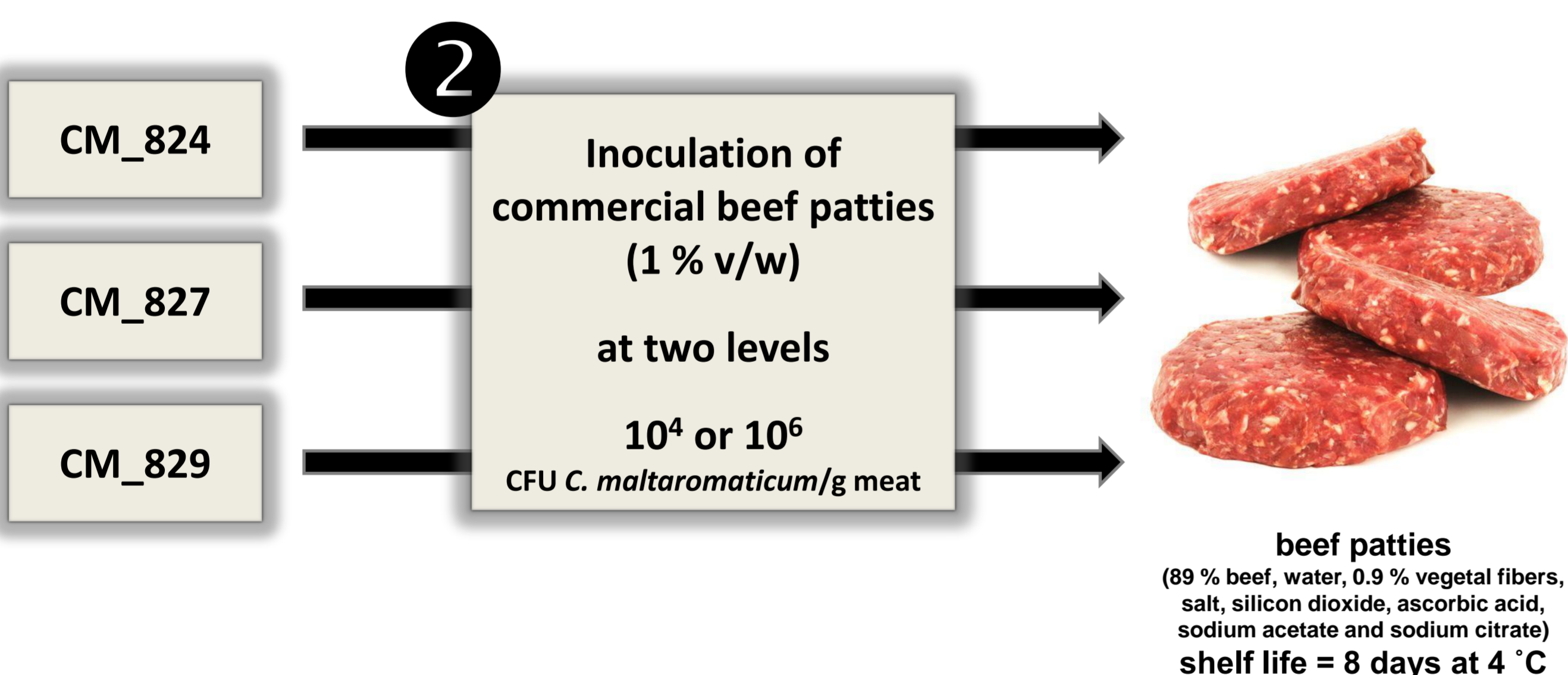


To perform a sensory evaluation of beef patties inoculated with potential biopreservative strains of *C. maltaromaticum* isolated from vacuum packaged beef with long shelf life.

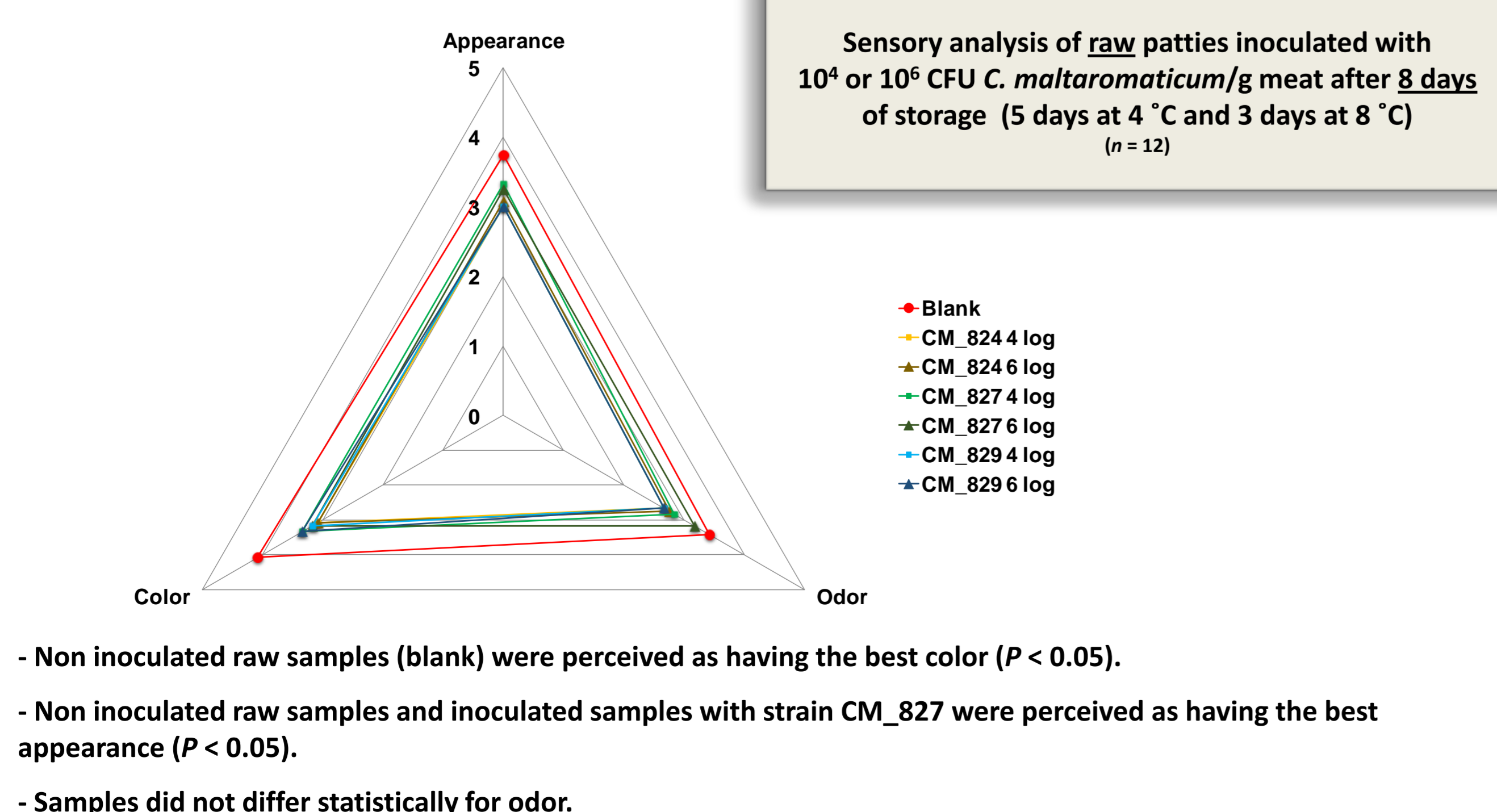
MATERIALS AND METHODS



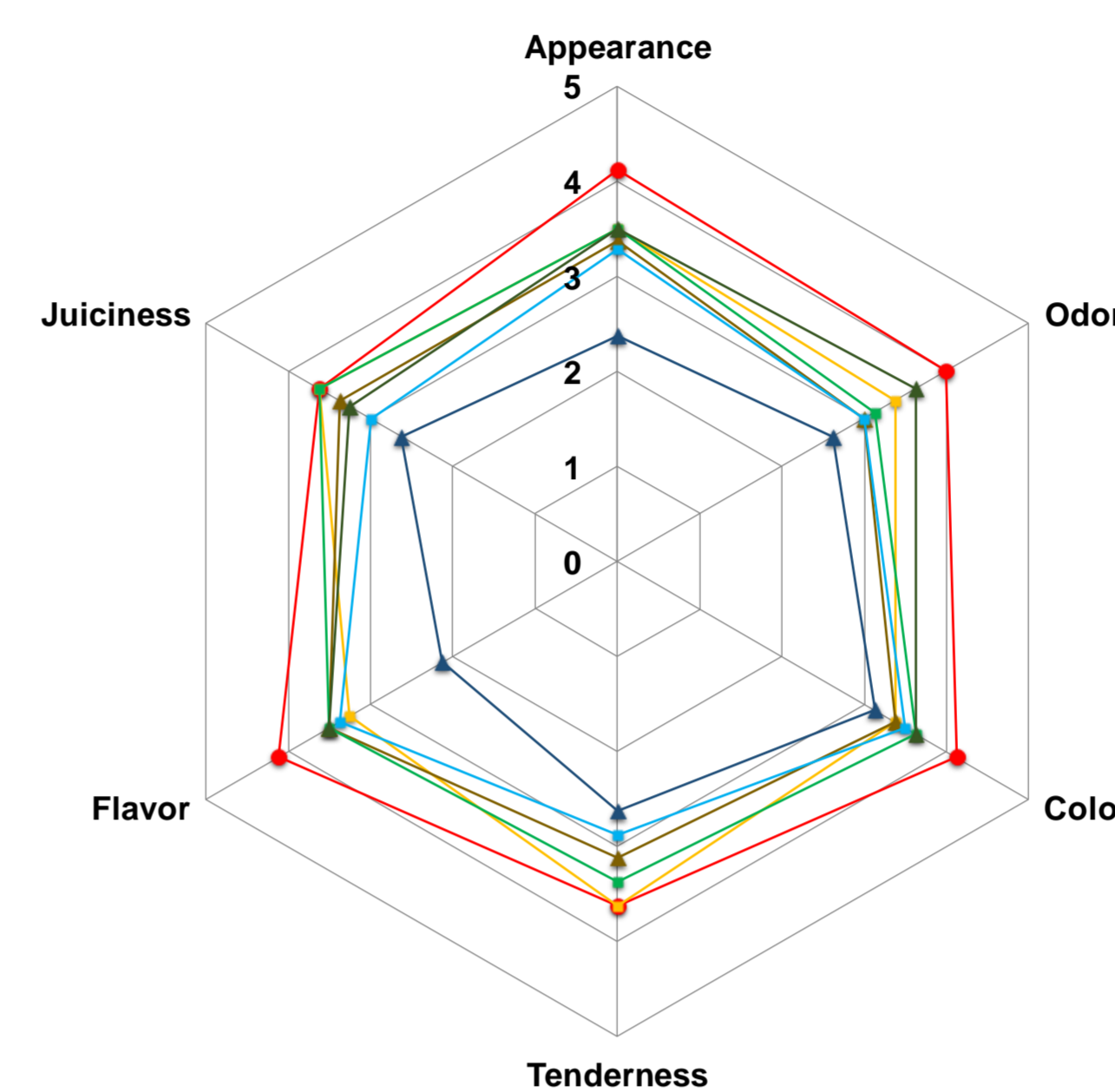
1 Isolation of three *C. maltaromaticum* strains
CM_824 (lab. ref.) CM_827 CM_829



RESULTS AND DISCUSSION

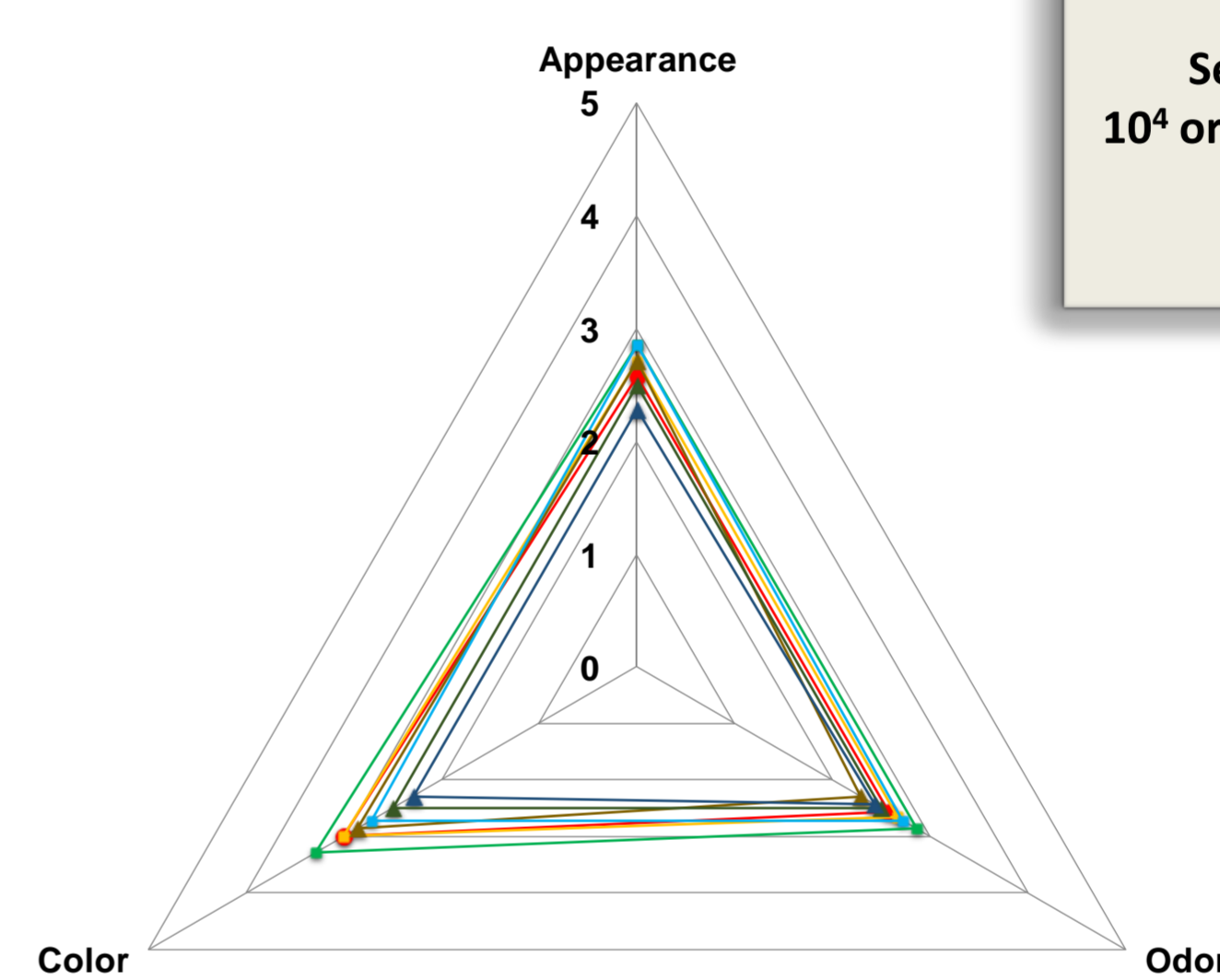


RESULTS AND DISCUSSION

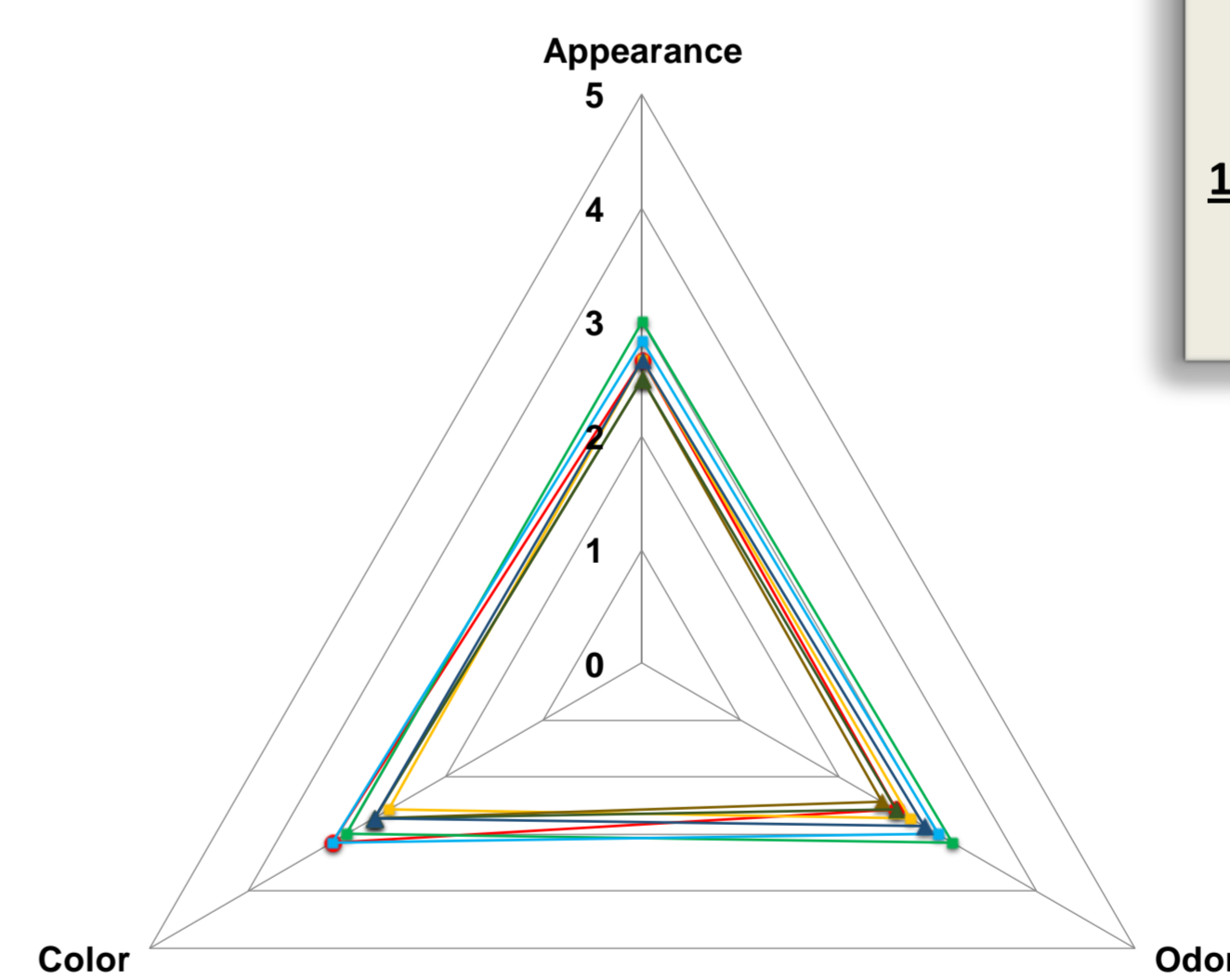


- Non inoculated beef patties (blank) received higher scores than inoculated patties, but no statistical difference was observed with samples inoculated with *C. maltaromaticum* at 10⁴ CFU/g.

- Samples inoculated with the strain CM_829 at 10⁶ CFU/g received the worst scores for appearance, odor and flavor ($P < 0.05$).



- Samples inoculated with the strain CM_827 at 10⁴ CFU/g received the highest scores for all attributes, but did not differ statistically from blank.



- Only appearance, color and odor were evaluated since samples were three days beyond commercial shelf life.
- A decrease in the sensory quality was observed during the last three days of storage.

CONCLUSIONS

This preliminary study permitted to evaluate the effect of three *C. maltaromaticum* strains on the sensory quality of beef patties.

Strain CM_827 did practically not change the sensory attributes of beef patties.

Therefore, further research on the biopreservative capacity of *C. maltaromaticum* should be conducted with the strain CM_827.

