

Consumer acceptance of a ready-to-eat meal during storage using a home-use test

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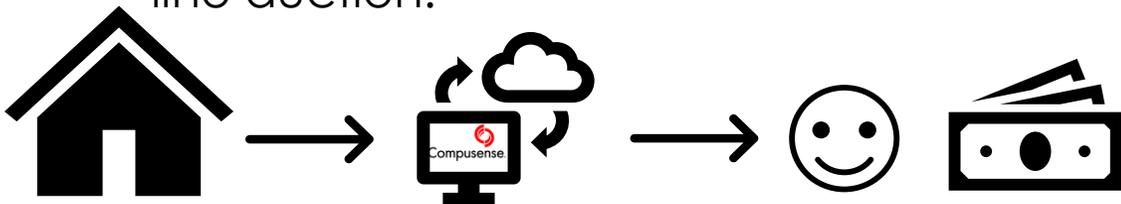
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Objectives

1. To determine **consumer acceptance** of MAPS-processed RTE jambalaya and a frozen control **through a HUT** over 12-week storage.
2. To determine the degree to which a modification in the **social environment** of the HUT impacted the level of perceived acceptability of the meals on part of the participants.
3. To determine **consumers' willingness to pay for the meals** through an on-line auction.



Background



Microwave-assisted-pasteurization (MAPS): novel method to produce ready-to-eat (RTE) meals¹.



Home-use test (HUT): product is consumed in home under common daily use circumstances, usually for several days². Suitable for conducting contactless consumer testing during pandemic.



Ecological validity: conducting sensory tests in a context reflecting more natural consumption³.



On-line auction: used to reveal consumers' valuations to facilitate future pricing decisions⁴.

Methods

I. Jambalaya meals



MAPS

$F_{90^{\circ}\text{C}} = 12 \text{ min}$

Freezing

Freezing room
(-31°C)

Storing

$T = 2 \pm 0.5^{\circ}\text{C}$

Storing

$T = -31 \pm 2^{\circ}\text{C}$

- **3 evaluation points:**
2, 8 and 12 weeks

II. HUT Panel



- Consumers of ready-to-eat meals
- N=50 (64% F, 36%M)
- Mean age= 40y
- Orientation and practice session
- Compusense® Cloud
- Partners (husband, wife, friend, roommate)(N=21)
- Mean age= 44y



III. On-line auction

- 2nd price auction
- \$30 incentive
- Winner: 1 jambalaya tray
- Compusense® Cloud



IV. Analyses

Microbial Analysis

- Pathogens and spoilage

Sensory Analysis Liking (7-point hedonic scale)

- Appearance
- Aroma
- Flavor
- Texture
- Overall liking

Just-about-Right (JAR)

- Spiciness
- Texture: shrimp, chicken, sausage

Data Analysis

- Repeated measures ANOVA
- Penalty analysis

Results

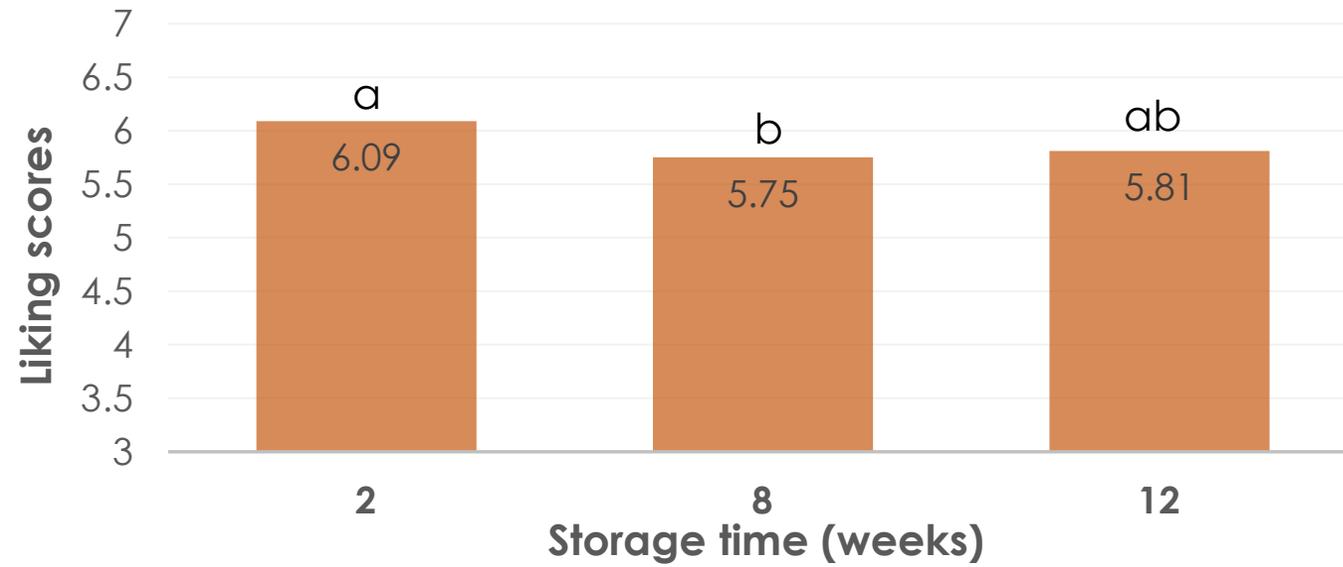


Fig 1. Effect of **storage time** on the liking of the flavor of jambalaya meals. N=71

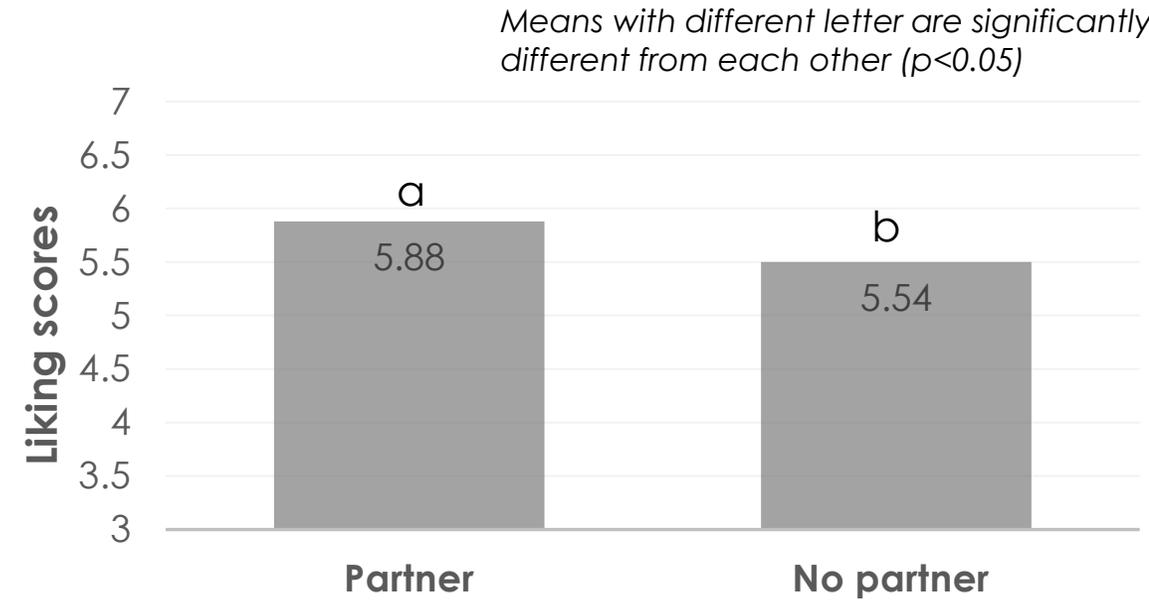


Fig 2. Effect of **having a partner** on the liking of the **appearance** of jambalaya meals. N=50

- **Storage time:** only **flavor liking** decreased over time ($p=0.001$).
- **Participants with and without partner comparison:** **appearance liking** was significantly higher ($p=0.04$) for those participants with a partner.
- **Processing method (MAPS vs control):** did not significantly influence the measured sensory attributes.
- **JAR:** Most texture-related attributes were around the **JAR point**; chicken texture was considered **too chewy**. The meals were considered not spicy.

Results



On-line auction

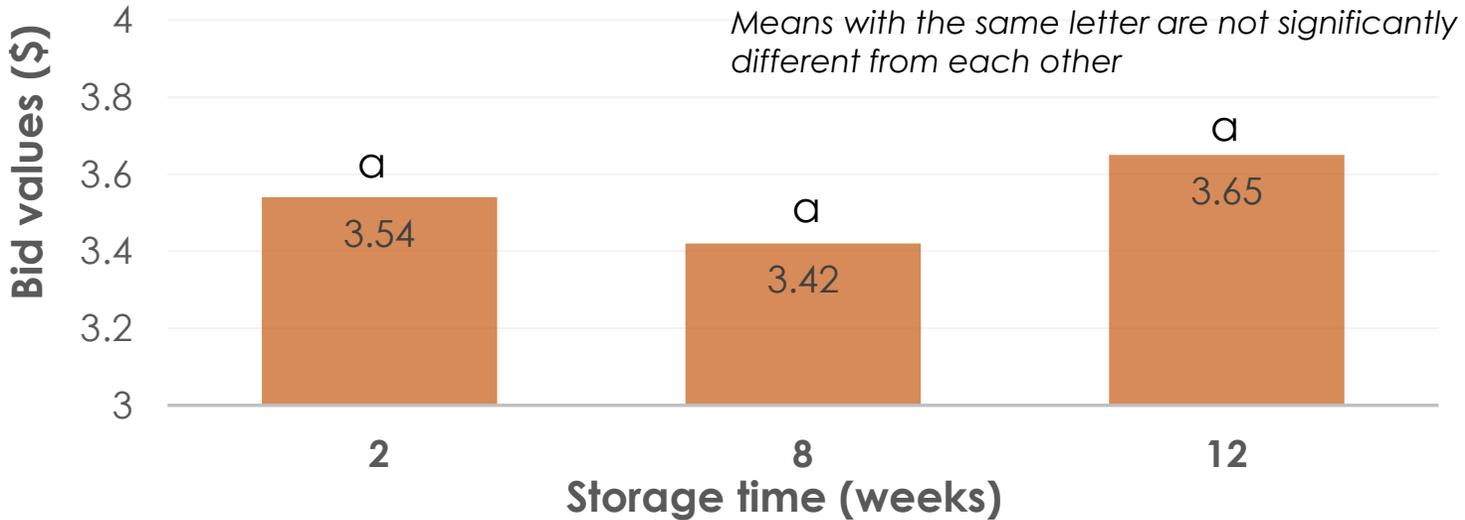


Fig 3. Effect of **storage time on the bids** for jambalaya meals. N=50

- **Storage time:** did not significantly influence the bid values.
- **Processing method:** did not significantly influence the bid values.
- **Having a partner:** did not significantly influence the bid values.
- The price assigned to the meals was comparable to commercially available jambalaya meals.

Takeaways



- Consumer **overall liking** of MAPS-processed jambalaya did not change significantly during **12 weeks of storage at 2°C**.
- Using a **HUT** for evaluating consumer acceptance of jambalaya and including **partner participation**, is a promising way of testing acceptance in a more realistic context.
- **An on-line auction + HUT sensory testing** of jambalaya meals showed that consumers are willing to pay a price that is comparable to commercially available jambalaya meals.

Acknowledgement

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