Consumer habits and their impact on the safety of REPFEDs.
Results of a survey in Belgium

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Content

• Why this survey? - "what’s the point?"

• How / When / Where?

• What info do we need?

• Q&A (of the questionnaire)

• Time to consumption

• Effect of exposure

• Conclusions
Why? - What’s the point?

Shelf life 14 - 45 days
Why? - What’s the point?

Raw materials --- Time of consumption
Why? - What’s the point?

Raw materials → Production and distribution → Time of consumption
Why? - What’s the point?

- Raw materials
- Production and distribution
- Time of purchase
- Time of consumption
Why? - What’s the point?

Raw materials

Time of purchase

Production and distribution

Consumer

Time of consumption
Why? - What’s the point?

Raw materials → Production and distribution → Consumer → Time of consumption → Time of purchase

- Models
- aw and pH
- Time & temperature data
Why? - What's the point?

Raw materials  ➤ Time of purchase  ➤ Time of consumption

Production and distribution

Consumer

- Models
- $a_w$ and pH
- Time & temperature data

- Models
- $a_w$, pH & Temp. data
- Time
How / When / Where?

“Gent Tastes” : 17-20 May 2012
How / When / Where?

*“Gent Tastes”: 17-20 May 2012*
What info do we need?
What info do we need?

What is the time between purchase and consumption?
What info do we need?

What is the time between purchase and consumption?

- “How long do you store a REPFED?”
- Consumer 1: 0 days
- Consumer 2: 7 days
- Consumer 3: 14 days
- **Average** = 7 days
What info do we need?

What is the time between purchase and consumption?

* “How long do you store a REPFED?”

* Consumer 1: 0 days *at 5 per week* = 260 per year

* Consumer 2: 7 days *at 2 per week* = 104 per year

* Consumer 3: 14 days *at 1 per month* = 12 per year

* Average = 7 days
What info do we need?

What is the time between purchase and consumption?

- “How long do you store a REPFED?”
- Consumer 1: 0 days at 5 per week = 260 per year
- Consumer 2: 7 days at 2 per week = 104 per year
- Consumer 3: 14 days at 1 per month = 12 per year
- **Average** = 7 days
- **Weighted average** = 2.3 days
What info do we need?

A. How long do you store a REPFED?

B. How frequently do you purchase a REPFED?

C. Do you still consume a REPFED after the ‘use by’ date?
The questionnaire

1. Gender & Age

2. Do you consume REPFEDs?

3. How frequently do you consume REPFEDs?

4. When you buy a REPFED, how (long) do you store it?

5. How good do you respect the ‘use by’ date?

6. How closely do you follow the reheating guidelines?
Gender & Age

- 931 participants
- 874 "correct"
Gender & Age

- 931 participants
- 874 “correct”
Gender & Age

- 931 participants
- 874 “correct”

![Pie chart and bar chart showing gender and age distribution.]

- **Female**: 58%
- **Male**: 42%

![Bar chart with age distribution in years:]

- <18
- 18-25
- 25-30
- 31-40
- 41-50
- 51-60
- 61-70
- >70

**Nr of respondents**
Have you bought a REPFED in the last year? - Yes/No

Men

- Yes: 74%
- No: 26%

Women

- Yes: 80%
- No: 20%
Have you bought a REPFED in the last year? - Yes/No

% Consumers per age group

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>% Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>75%</td>
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<td>31-40</td>
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</tr>
<tr>
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Have you bought a REPFED in the last year? - Yes/No

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</tr>
<tr>
<td>41-50</td>
<td>10%</td>
</tr>
<tr>
<td>51-60</td>
<td>5%</td>
</tr>
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<td>61-70</td>
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How frequently do you buy REPFDs?

a. Almost every day (5-7 a week)
b. 2-4 times per week
c. Once a week
d. 3-5 times a month
e. Once a month
f. Once a year
g. Never (extra check)
How frequently do you buy REPFEDs?
How frequently do you buy REPFEDs?

2 trends:
Men buy more frequently than women
Younger people buy more frequently than older people
When you buy a REPFED, how (long) do you store it?

Multiple answers allowed

a. In the fridge: 0 days
b. In the fridge: 1-3 days
c. In the fridge: 4-7 days
d. In the fridge: up to two weeks
e. In the fridge: more than two weeks
f. In the freezer: + 0 days in fridge
g. In the freezer: + 1-3 days in fridge
When you buy a REPFED, how (long) do you store it?

<table>
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<tr>
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<th>≤3 days</th>
<th>4-7 days</th>
<th>&gt;7 days</th>
<th>Shelf life: 14 - 45 days</th>
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<tbody>
<tr>
<td>Fridge</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freezer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td></td>
<td></td>
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When you buy a REPFED, how (long) do you store it?

- Fridge: 88%
- Freezer: 8%
- Both: 4%

Shelf life: 14 - 45 days
When you buy a REPFED, how (long) do you store it?

Fridge: 88%
Freezer: 4%
Both: 8%

≤3 days: 5%
4-7 days: 22%
>7 days: 73%

Shelf life: 14 - 45 days
When you buy a REPFED, how (long) do you store it?

- Most important link:
  - Frequency \(\uparrow\) \(\rightarrow\) Storage time \(\downarrow\)
How good do you respect the ‘use by’ date?

a. “Strict” = 0 days of margin

b. “Moderate” = 2-3 days of margin

c. “Limited” = \( X \) days of margin (indicate how much)

d. “I don’t” = look/smell
How good do you respect the ‘use by’ date?

- Strict: 53%
- Moderate: 40%
- Little: 5%
- None: 3%
How good do you respect the ‘use by’ date?

- 53% Strict
- 40% Moderate
- 5% Little
- 3% None

- Men have less respect for the ‘use by’ date
- People who store for longer have less respect
How closely do you follow the reheating guidelines?

✤ e.g. 800 Watt for 4 minutes, stir after 2 minutes
✤ e.g. Put on heat resistant tray and heat for 10 minutes at 180°C

a. “Completely”
b. “Partially”
c. “I don’t follow the instruction, warm is OK”
How closely do you follow the reheating guidelines?

- Completely: 50%
- Partially: 36%
- Don’t: 13%
- Cold: 0.1%

- Women do better than men
- The elderly do better than the young
- People with less respect for ‘use by’ date do worse
Time to consumption

- Questions 3, 4 and 5
- Correlated ➔ Conditional
- “the REPFED’s point of view”
- What is the probability that REPFED is consumed by a consumer who:
  1. has a certain frequency of consumption
  2. and has a certain respect for the ‘use by’ date
  3. and who stores the product for a certain time
Time to consumption

An example:

- 5-7 per week
- 1 per week
- 1 per year

ADD moving package
Time to consumption

An example:

- 5-7 per week
- 1 per week
- 1 per year

- Strict
- Moderate
- Little

ADD moving package
Time to consumption

An example:

5-7 per week

1 per week

1 per year

Strict

Moderate

Little

ADD moving package

0 days

1-3 days

4-7 days
Time to consumption

An example:

- **5-7 per week**: 1 per week → Strict → Moderate → Little
- **1 per week**: 1 per week
- **1 per year**: 1 per year → Moderate → Strict → Little
- **ADD moving package**: 0 days → 1 day → 2 days → 3 days → 4-7 days → 3 days
Time to consumption

An example:

- **Strict**
  - 1 per week
  - Moderate
  - 1 per week
  - Little
  - 5-7 per week
  - **Strict**
  - 1 per year

- **Moderate**
  - 0 days
  - 1-3 days
  - 1 days

- **Little**
  - 4-7 days
  - 3 days
  - 2 days

ADD moving package

1 days
Time to consumption

Meals consumed

Days
Time to consumption

- 50% in 2 days
- 75% in 4 days
- 90% in 7 days
Behaviour and effect

Respect for ‘use by’ date

- Strict: 53%
- Moderate: 40%
- Little: 5%
- None: 3%

- Green: Strict
- Orange: Moderate
- Purple: Little
- Red: None
Behaviour and effect

**Respect for ‘use by’ date**
- 3% Strict
- 5% Moderate
- 40% Little
- 53% None

**Prob. of eating “risky” REPFED**
- 3% Strict
- 26% Moderate
- 39% Little
- 32% None
Conclusion

- Survey is lot of effort, but worthwhile
- Consumer behaviour in other cultures/countries?
- *B. cereus* in Belgian REPFEDs:
  - “risky behaviour” do “*all things wrong*”
  - Frequent consumers are less exposed
  - “Strict” consumers (53%) are less exposed
Conclusion

- Do we have to include these “risky consumers”? 
- Can we?
Questions?