Effects of Repeated Exposure to Fermented Milk Products with a Stepwise Increase in Designed Complexity on Children’s Liking

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Aim
The aim of this study was to:
• Examine the effect of repeated exposure on children’s liking for FMPs with a stepwise increased level of designed complexity
• Elucidate the sensory characteristics for children’s liking for six FMPs varying in designed complexity by using Flash Profile.

Conclusion
• The results indicate that children’s liking for more complex and healthy FMPs can be modified by repeated exposure to FMPs with a high level of designed complexity.
• Children rated sample F high indicating that flavor masking may be an effective strategy to increase liking for FMP added healthy food compounds.
• Flash Profile can be used to elucidate sensory attributes highly important to children’s liking.

Procedure
• 196 children, 113/83 (9-14 years) performed rating tests on a 7-point hedonic facial scale

Results
Results from repeated exposure:
Repeated exposure to FMPs with a high level of designed complexity increased liking for that FMP and decreased liking for the least complex FMPs. Repeated exposure to FMPs with a low level of designed complexity did not increase liking for any products.

Products
Table 1. Six FMPs varying in designed complexity.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>FMP</td>
</tr>
<tr>
<td>B</td>
<td>FMP + small pieces of pear</td>
</tr>
<tr>
<td>C</td>
<td>FMP + small pieces of pear + mango puree</td>
</tr>
<tr>
<td>D</td>
<td>FMP + small pieces of pear + mango puree + fibres</td>
</tr>
<tr>
<td>E</td>
<td>FMP + small pieces of pear + mango puree + fibres + large pieces of mango</td>
</tr>
<tr>
<td>F</td>
<td>FMP + small pieces of pear + mango puree + fibres + large pieces of mango + pear and mango flavour</td>
</tr>
</tbody>
</table>

The sugar content in the six FMPs was reduced with 25% sugar compared to normal Danish FMPs.

Results from Flash Profile:
Eight attributes were chosen from the Flash Profile to be highly relevant for the description of the variation between the six FMPs.

Sample A and B are highly correlated with the sensory attribute ‘sour taste’ and negatively correlated to liking.
Sample D and E are highly correlated with the sensory attributes ‘thick and creamy texture’, ‘sweet taste’ and ‘yellow appearance’.
Sample C and F are highly correlated with the sensory attributes ‘grainy texture’, ‘much fruit’ and ‘perfumed taste’. These samples score high in liking.