Introduction

- High fat diet not only increases coronary heart diseases but also leads to obesity.
- According to CDC (2010), 35.7% of the total adult population and 17% of children and adolescent population is obese; coronary heart disease death is about 26% of the total death.
- Consumers are becoming more health conscious and are more lean towards the low calorie and low fat foods.
- As per the CFR title 21 Sec.101.62, the product contain 6 g or less amount of fat per 100 g is considered as “Low Fat Product”.

Objectives

- To formulate processed cheese spread with different levels of inulin and identify the optimum level.
- To characterize the processed cheese spread with added inulin for its spreadability.

Materials and Methods

- Reduced fat cheddar cheese, aged cheddar cheese for low fat processed cheese spread, in addition mild cheddar cheese used for preparing full fat processed cheese spread
- Fat- Mojonier method, protein—Kjeldahl method, moisture-atmospheric oven draft method and pH using pH meter

Results and Discussion

Chemical composition, yield stress, and strain of low-fat and full-fat processed cheese spreads

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Control</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat, %</td>
<td>FFC</td>
<td>LF 6%</td>
</tr>
<tr>
<td>Protein, %</td>
<td>FFC</td>
<td>16.70 a</td>
</tr>
<tr>
<td>Moisture, %</td>
<td>FFC</td>
<td>56.06 d</td>
</tr>
<tr>
<td>pH</td>
<td>FFC</td>
<td>5.60 a</td>
</tr>
<tr>
<td>Yield stress, Pa</td>
<td>FFC</td>
<td>522.16 b</td>
</tr>
<tr>
<td>Strain, rad</td>
<td>FFC</td>
<td>1.141 a</td>
</tr>
</tbody>
</table>

Means with different letters within a row differs significantly (p < 0.05)

- Inulin can mimic the fat in low-fat processed cheese spread and it helps to increase the stress value.
- Low-fat spread with 7% and 8% inulin demonstrated similar and higher yield stress value than full-fat control, respectively.
- 7% inulin is the optimum level to achieve the same stress value as of full-fat control.

Conclusion

- Inulin can mimic the fat in low-fat processed cheese spread and it helps to increase the stress value.
- Low-fat spread with 7% and 8% inulin demonstrated similar and higher yield stress value than full-fat control, respectively.
- 7% inulin is the optimum level to achieve the same stress value as of full-fat control.