

3D-print batter based on different ingredients will need different thickeners to optimise the texture.

3D-printing of tailormade foods for elderly

INTRO

For persons suffering from chewing and swallowing disorders, 3D-printing of food may be a solution and produced with individualised variations in texture, nutrients and sensory properties. The texture of 3D-print batter could be modified by the addition of thickeners.

METHODS

Four chicken, three broccoli and two bread patés were produced with 0,5% xanthan and varied amount agar, 0.5-2.0%. In addition one chicken paté with 1,0% added gelatine and 0,6% cmc was produced. All batters underwent a retort process before sensory descriptive analysis.

RESULTS

Results showed a large impact of the amount of added thickeners mainly on the broccoli paté, lesser impact on chicken and none on the bread (Figure 1-3). Significant differences were found mainly in the texture attributes, but also appearance differed due to the content of agar. The addition of gelatine and cmc resulted in more grainy but less sticky texture.

DISCUSSION

Varied impact of thickeners and amount of them due to the different products was expected in line with earlier studies. It is clear that batter based on different ingredients will need different thickeners to optimise the texture.

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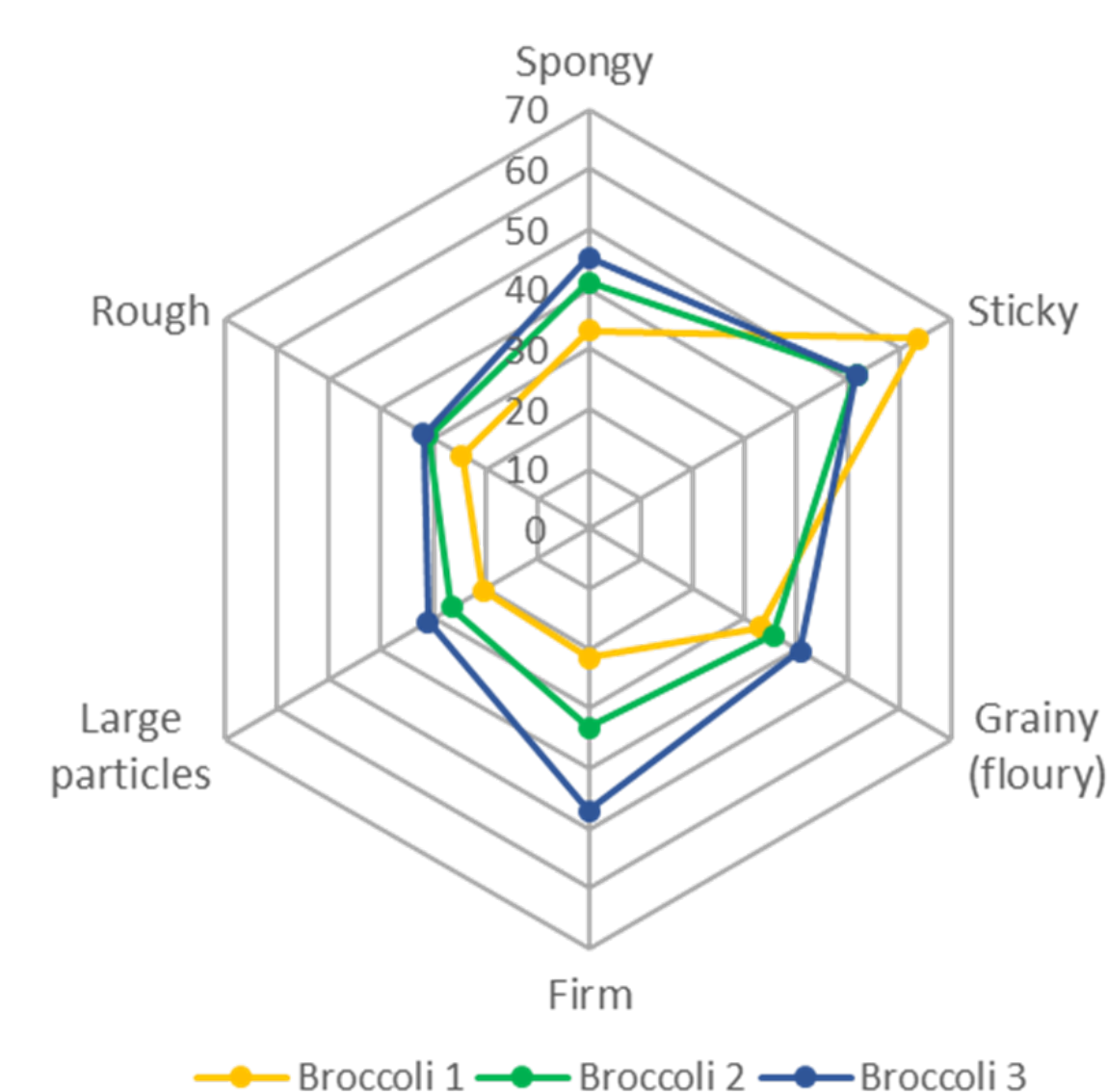


Figure 1.

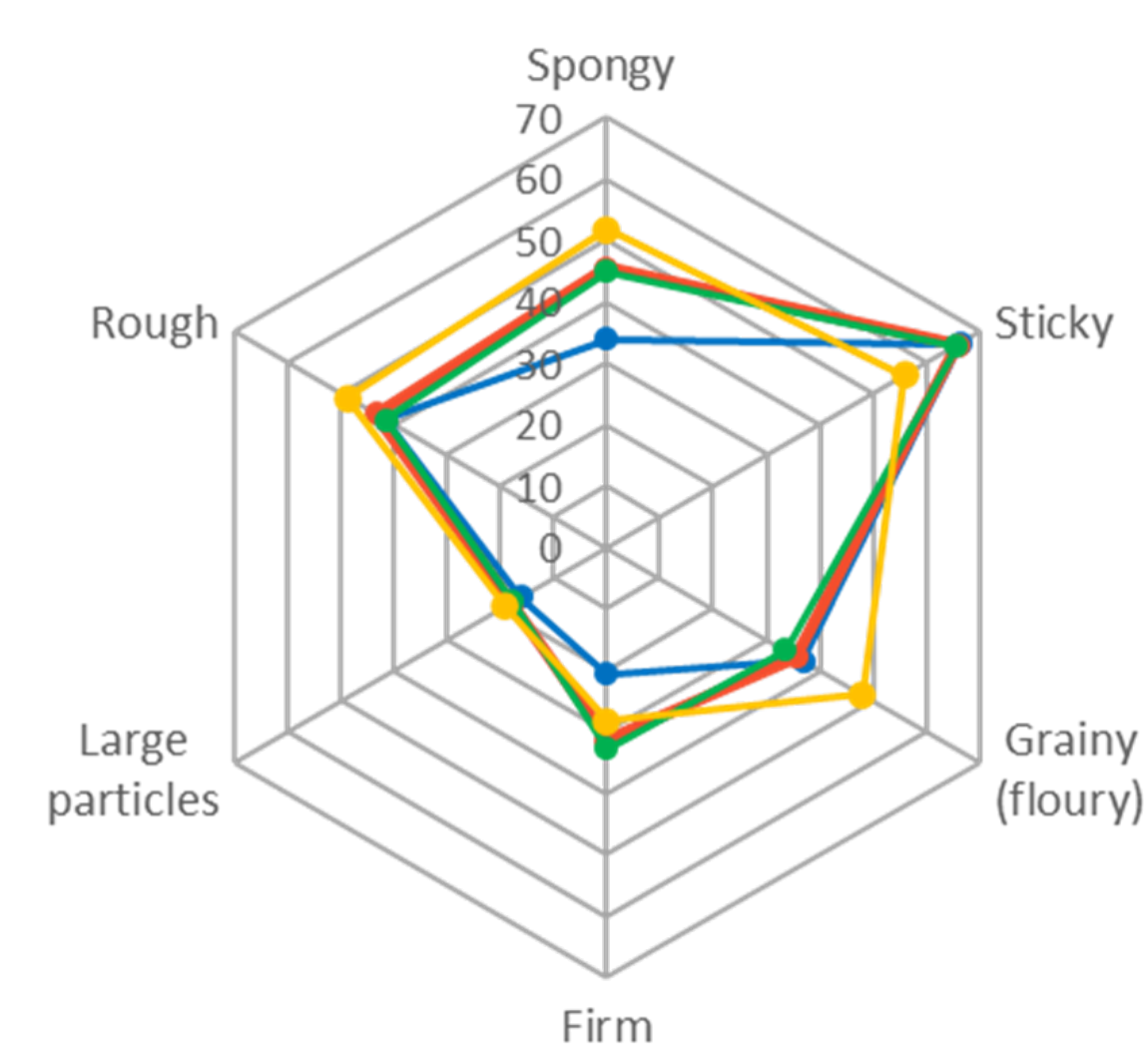


Figure 2.

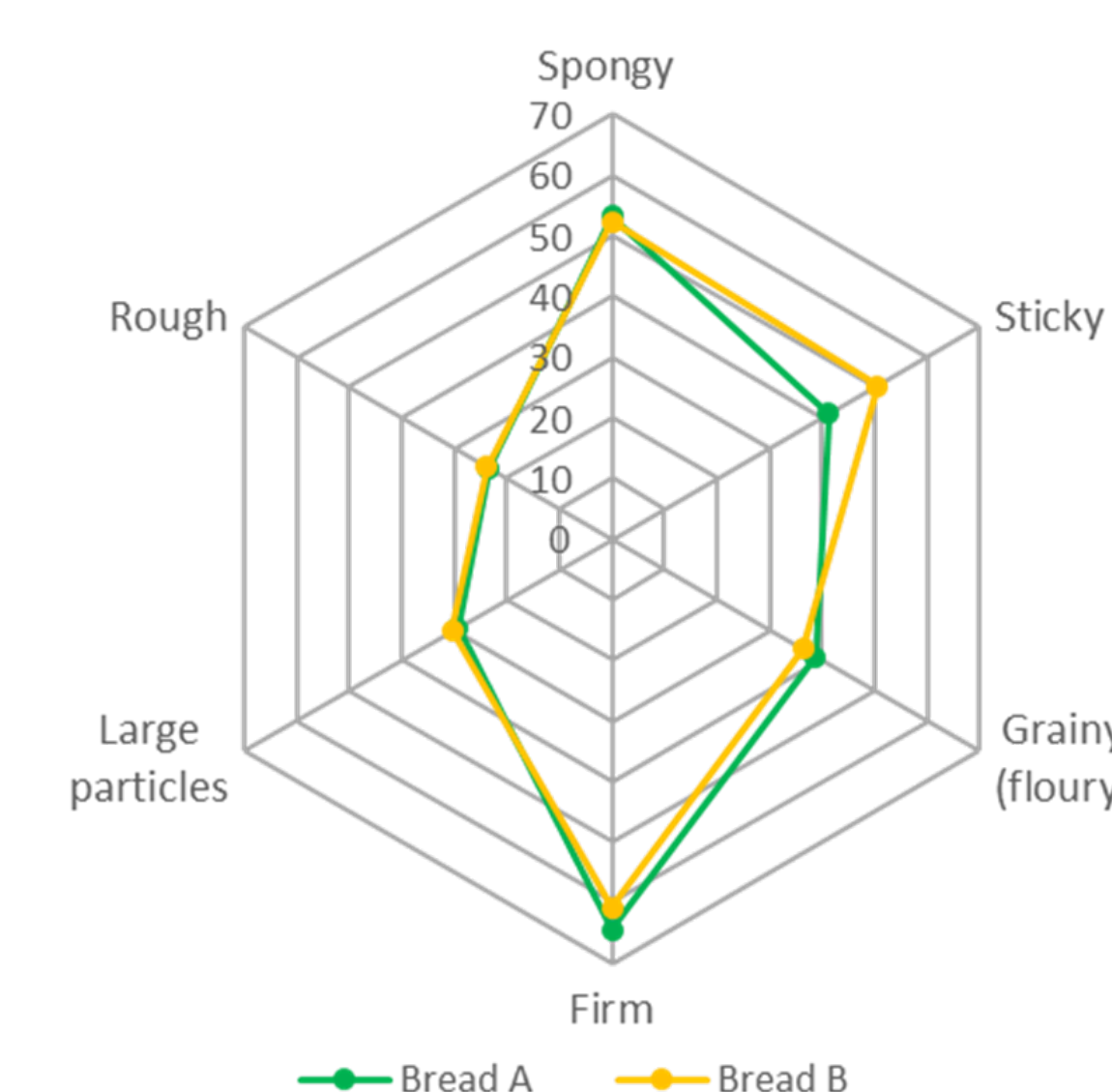


Figure 3.

Figure 1-3. Texture attributes for batter based on broccoli, chicken and bread patés with added thickeners



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