

Thickeners used in cocoa syrups, sauces, dressings and mayonnaises

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Area of our research

Application of polysaccharide hydrocolloids in food industry:

- ▶ Possibilities of application of starch and non-starchy polysaccharide hydrocolloids combinations in food industry.

Interactions of starch with the other polysaccharide hydrocolloids

- ▶ Interactions of potato starch with carrageenan, guar, locust bean, Arabic, karaya and xanthan gums

Rheological study:

- ▶ Rheological properties of polysaccharide gels, chocolate and other confectionery masses
- ▶ Study on thixotropy of polysaccharides
- ▶ Viscoelastic properties of the blends of starch and non-starchy polysaccharide hydrocolloids.
- ▶ Changes occurring in gels during storage

Area of our research

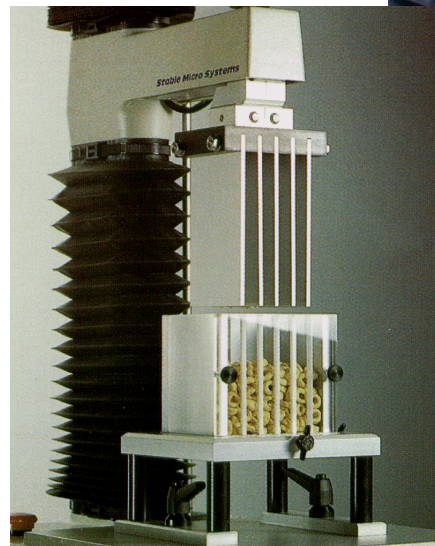
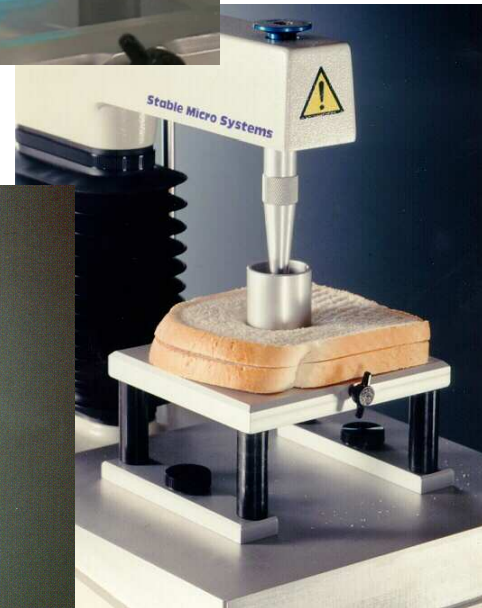
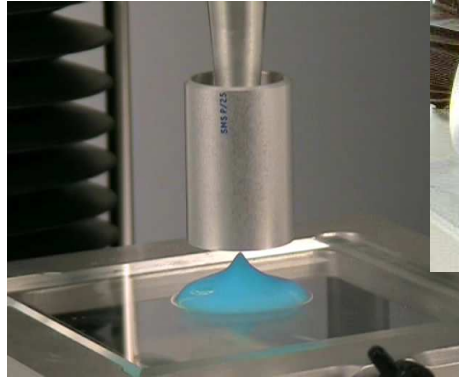
Designing foods

- ▶ Thickening of sauces, dressings, mayonaises, ketchups by combinations of polysaccharide hydrocolloids
- ▶ Improving, modifying or creating new properties of bisquits and cakes.
- ▶ designing foods
 - with reduced fat or sugar
 - with specyfic parameters
 - for a specific groups of people



Textural measurements

- ▶ Compression
 - ▶ Single
 - ▶ Texture Profile Analysis
 - ▶ Bulk
- ▶ Puncture and Penetration
 - ▶ Single
 - ▶ Multiple
- ▶ Cutting and Shearing
 - ▶ Single
 - ▶ Bulk
- ▶ Fracture and Bending
- ▶ Extrusion
 - ▶ Forward
 - ▶ Backward
 - ▶ Multiple
- ▶ Tension
- ▶ Adhesion



Rheological measurements

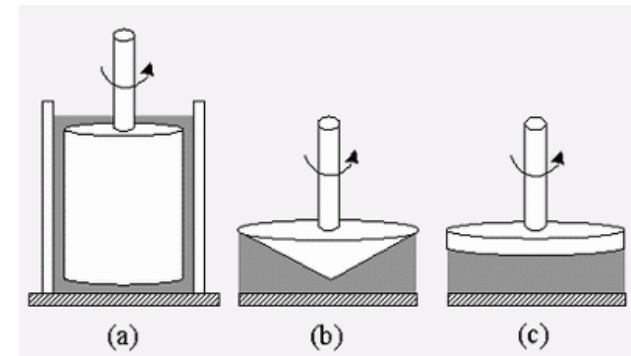
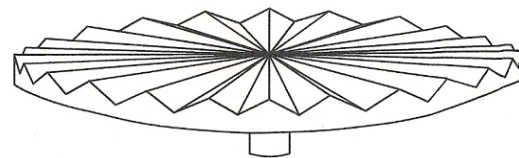
- ▶ For rheological measurements either computerized Haake Rheometer, RSI (Gebrueder Haake GmbH, Germany), were used.

In the studies the following tests were applied:

a) Flow curve determination CR (Controlled Rate of Shear)

b) Viscosity vs. temperature changes

c) Oscilatory measurements



Sensory analyses



- ▶ The panel of preliminary tested and subsequently trained experts carry out sensory analyses according to [Polish Standard PN ISO 1996, 1998a, 1998b].
- ▶ Sensory analyses are conducted in proper tests.
- ▶ The analyses are conducted by the experts on the basis of parameters defined in calibration cards.
- ▶ Correlation the sensory analyses with the texture and rheological properties.

Other possibilities

- ▶ The structure and properties of polisaccharides and non starch polysaccharides
- ▶ Modyfication of polysaccharides (enzymatic and chemical)
- ▶ Cereal grain
- ▶ Bread baking process
- ▶ Chemical composition of various coffee samples
- ▶ Chromatographic analysis of various samples (flour, coffee, water extracts) by means HPLC, HPSEC,
- ▶ Analythical method developement
- ▶ Isolation of polysaccharides and proteins from biological materia

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