

Cake Mix Quality Method

Scope

- Test ingredients.
- Compare cooking behavior of different formulations.
- Develop new formulations.
- Monitor consistency of ingredients between production batches.
- Relate results to final product quality - texture, taste, appearance.

Rapid Visco Analyser

The Rapid Visco Analyser (RVA) is a cooking stirring viscometer with ramped temperature and variable shear profiles optimized for testing viscous properties. The instrument includes international standard methods as well as full flexibility for customer tailor-made profiles. Combining speed, precision, flexibility and automation, the RVA is a unique tool for product development, quality and process control and quality assurance.



Description

The main ingredients in a cake mix are flour, sugar, and leaveners, all of which influence the cooking properties and final qualities of the product. This application can be used to compare the pasting behavior of competitive cake mixes, which may differ in the proportions of ingredients in the formulation. Different ingredients within the formulation act together and influence the pasting behavior of the product.

During the RVA test, sugar within the mix competes with flour for the available water, with a higher sugar concentration resulting in higher pasting temperatures. In the example, Cake Mix 1 had a higher concentration of sugar than Cake Mix 2 (from ingredient list), thus reducing the available water for flour to absorb and swell. Cake Mix 1 therefore had lower overall viscosities than Cake Mix 2.

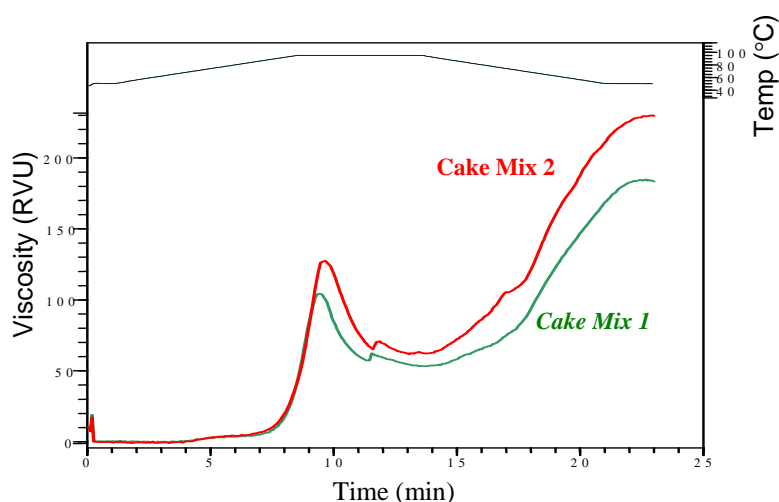


Fig. 1. Pasting curves of competitive cake mixes.

Method

STD2 pasting profile.

Sample Preparation

5.00g flour at 14% moisture and 25.0 ml water.

Profile

Time	Type	Value
00:00:00	Temp	50°C
00:00:00	Speed	960 rpm
00:00:10	Speed	160 rpm
00:01:00	Temp	50°C
00:08:30	Temp	95°C
00:13:30	Temp	95°C
00:21:00	Temp	50°C
00:23:00	End	
Idle Temperature: 50 ± 1°C		
Time Between Readings: 4 s		

Measure

PT: Pasting temperature (°C)

PV: Peak viscosity (cP)

FV: Final viscosity (cP)

SB: Setback (cP)