Wheat and Rye Flour Method

Scope

- Assess the quality of starch in flour.
- Compare different flours.
- Assess residual amylase in flour.
- Quality control.

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 Brabender ViscoAmyloGraph has traditionally been used to measure wheat and rye flour qualities. The test measures the pasting quality of the starch in the flour, and in particular its sensitivity to any α-amylase present. The ViscoAmyloGraph method is slow and involves complicated sample preparation and large sample requirements.

A 13 minute test in the RVA provides a rapid yet accurate alternative, overcoming the above disadvantages. Peak viscosity from the test provides a rapid index of flour quality, suitable for use in flour mills, bakeries, breeding programs and for research applications.

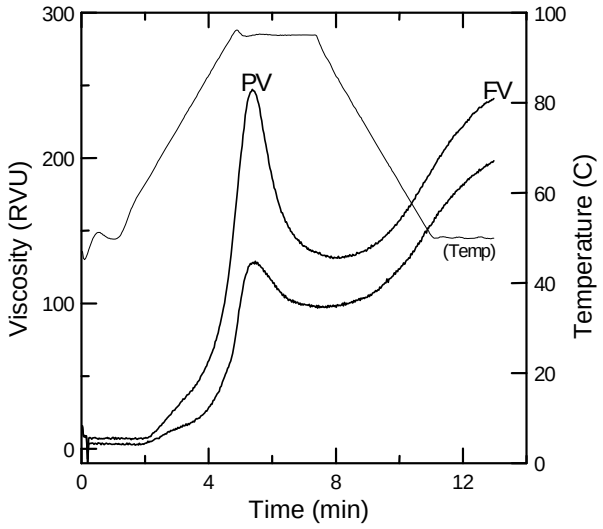

Fig. 1. RVA pasting curves of sound (upper curve) and marginal (lower curve) wheat flours showing peak (PV) and final viscosities (FV).

Method
Thirteen-minute pasting profile (AACC International Method 76-21.01, ICC Standard No. 162).

Sample Preparation
3.50 g flour at 14% moisture and 25.0 ml distilled 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
00:04:42	Temp	95°C
00:07:12	Temp	95°C
00:11:00	Temp	50°C
00:13:00	End	
Idle Temperature: 50 ± 1°C Time Between Readings: 4 s		

Measure
PV: Peak viscosity (cP)
FV: Final viscosity (cP)

The PV is the RVA Flour Quality Index. Higher values indicate sounder quality. Note that a low level of amylase activity can be beneficial in leavened bread applications.