

Malt Flour Method

Scope

- Assess the cooked viscosity of ground materials: carbohydrates (starch, flour, whole meal), proteins (soy, gluten, milk), gums, plastics.
- Quality control.
- Compare samples (e.g. examine competitive products).
- Assess amylase activity in flour.
- Investigate effect of formulation.

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

Addition of a low level of amylase activity in wheat flour actually improves the quality of traditional raised (pan) bread. Commonly the diastatic power of wheat is low and it is thus enhanced by addition of either malt flours or fungal amylase. The amylase releases dextrins that assist in the fermentation stage of baking. Malt flour activity (both from wheat and barley) can be assessed using the Stirring Number method as described below. See separate method for assessing fungal amylase activity, which cannot be measured using the Stirring Number method.

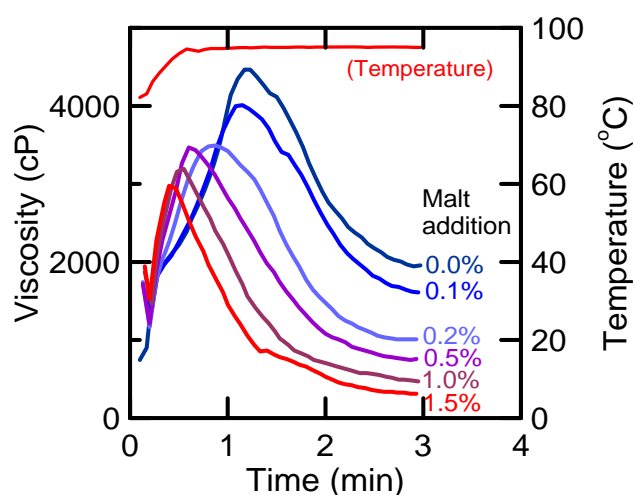


Fig. 1. Stirring Number curves of wheat flours (4.00 g flour) with various levels of malt flour addition.

Method

Stirring Number profile.

Sample Preparation

4.00 g flour (at 14% moisture) containing the malt flour amylase enzyme and 25.0 ml distilled water.

Profile

Time	Type	Value
00:00:00	Temp	95°C
00:00:00	Speed	960 rpm
00:00:10	Speed	160 rpm
00:03:00	End	
Idle Temperature: 95 ± 1°C Time Between Readings: 2 s		

Measure

FV: Final viscosity (RVU or cP)

The FV (in RVU) is the Stirring Number (SN). Higher SN values indicate lower amylase activity. Flours with the optimum levels of malt flour activity will give SN values between 50 and 90 RVU.