Amylograph

Method

1. A sample of 65 grams of flour is combined with 450 milliliters of distilled water and mixed to make a slurry.
2. The slurry is stirred while being heated in the amylograph, beginning at 30 degrees Celsius and increasing at a constant rate of 1.5 degrees Celsius per minute until the slurry reaches 95 degrees Celsius.
3. The amylograph records the resistance to stirring as a viscosity curve on graph paper.

Results

- The amylograph analyzes viscosity by measuring the resistance of a flour-and-water slurry to the stirring action of pins or paddles.
- When the slurry is heated, the starch granules swell and the slurry becomes a paste.
- A thicker slurry has more resistance to the pins during stirring and has a higher peak viscosity. Generally, a thicker slurry indicates less enzyme activity and makes better products.
- Amylograph results include peak viscosity.
- Amylograph curves are described on pages 46 to 47

Amylogrpah mixer.

Why is this important?

The amylograph test measures flour starch properties and enzyme activity, which results from sprout damage (alpha amylase enzyme activity). Sprouting in wheat, as indicated by high enzyme activity, produces sticky dough that can cause problems during processing and results in products with poor color and weak texture. For Asian noodle products, flour of medium to high peak viscosity is preferred because it gives noodles better texture characteristics.

Both the amylograph and the rapid visco analyzer (RVA, pages 54 to 56) measure starch viscosity properties. The amylograph is more commonly used throughout the world. The RVA uses a smaller sample and takes less time than the amylograph.

- **Viscosity analysis**
- **Measures flour starch properties**