

Technical Notes

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C.W.Brabender® / University Guelph / Gurpreet

The GlutoPeak - A New Revolution on Cereals Road

One day, Brabender was walking down the Cereals Road and he found a wheat breeder very upset. On asking, the breeder told Brabender that at F6 stage of his breeding trials, he discovered that the new wheat lines did not functionally perform as he had expected. "I wish I had **something reliable** which could test the functional quality of my wheat lines at early stages, with just a limited amount of sample", Breeder added. While thinking about Breeder's problem, Brabender walked a few steps further and just around the corner, he met a Miller, he also looked very sad. "What's wrong with you, dear"? Brabender asked. Miller said "I procured tons of new wheat with 13% protein at a high price but later, after milling, I found that this flour is performing just like flour with 8% protein. I wish I had **something fast** and reliable that could check the quality of wheat right at the receiving station".

While thinking about Miller's problem, at the end of the Cereal road, Brabender saw a New Product Development Scientist in a very depressed condition. He told Brabender that he had performed a pilot scale trial of his new formulation but it just turned vain. "I wish I had **something really fast and reliable** that could test end product quality of my new formulations right in my lab saving much of the resources, time and labor", Scientist added. "AH!" sighed Brabender, "everyone needs something fast that could save time and yet be reliable, something that itself is a definition of quality". But what would that "something" be?

Brabender with all its experience and knowledge gained since 1925, came up with that "something" which was reliable yet fast -right for the miller, and needs only a small amount of sample -just right for the breeder and a good predictor of end product quality perfect for the cereal product manufacturer.



An All in All-One Solution for Everyone and there emerged Brabender's new **GlutoPeak**. Brabender called everyone to his R&D facility -the power house of Brabender's innovation which had already presented the cereal world with wonder machines like Farinograph. Everyone came with curiosity to know about the newest wonder of Brabender named the **GlutoPeak**.

There stood Brabender, raising the curtain off his new wonder machine -the **GlutoPeak**, **embracing two innovation awards** -AACC 2010 and Europain 2012. Brabender announced with pride, "My dear cereal friends, here is my new innovation of the century — **the GlutoPeak**. The **Working Principle** of my **GlutoPeak** is as simple as A B C, but its curve unfolds all the complexity of aggregation and

breakdown of gluten network. You just need to simply mix flour and solvent, set the temperature and RPM; push down the tower to generate the "rheological fingerprint" of your sample within 1 -10 min. Strong flours (eg. bread, pasta) show high torque and short gluten aggregation time.

Or Peak Maximum Time (PMT), weak flours (eg. cookies, crackers) show low torque and long PMT while very weak flours(eg. wafers, batters) show much delayed PMT or no aggregation at all. It has specific applications for all of my cereal friends.

Breeding Applications:

- Benchmarking genes in early stages of breeding programs with small amount of sample (3-8.5 g).
- Segregate populations based on protein functionality.
- Study effects of soil, location, fungicides etc. (Fig 1)

Milling Operations:

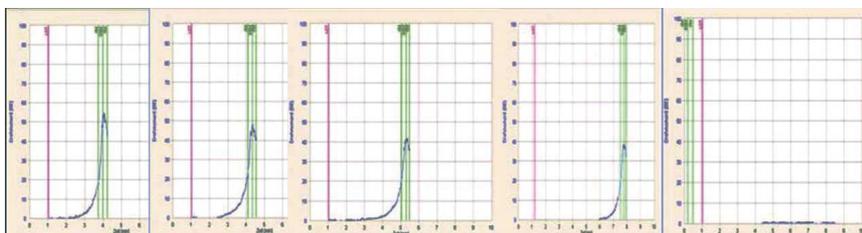
- Predict flour functionality at receiving station (Fig 2).
- Procurement decisions based on "protein quality" rather than "protein quantity".
- Higher flour price and more profits.
- Ensure customer loyalty.

Cereal Product Manufacturer:

- Ensure consistency of incoming ingredients.
- Rapidly test new formulations.
- Predict end product quality.
- Streamline quality control.
- Reduce process downtime with optimized dough handling.

In short, more profits with increased productivity and efficiency of your workflow and that's a promise of **Brabender®**.

Feel free to contact us for any further information on the **GlutoPeak**. We'll be happy to organize a workshop addressing your specific requirements.



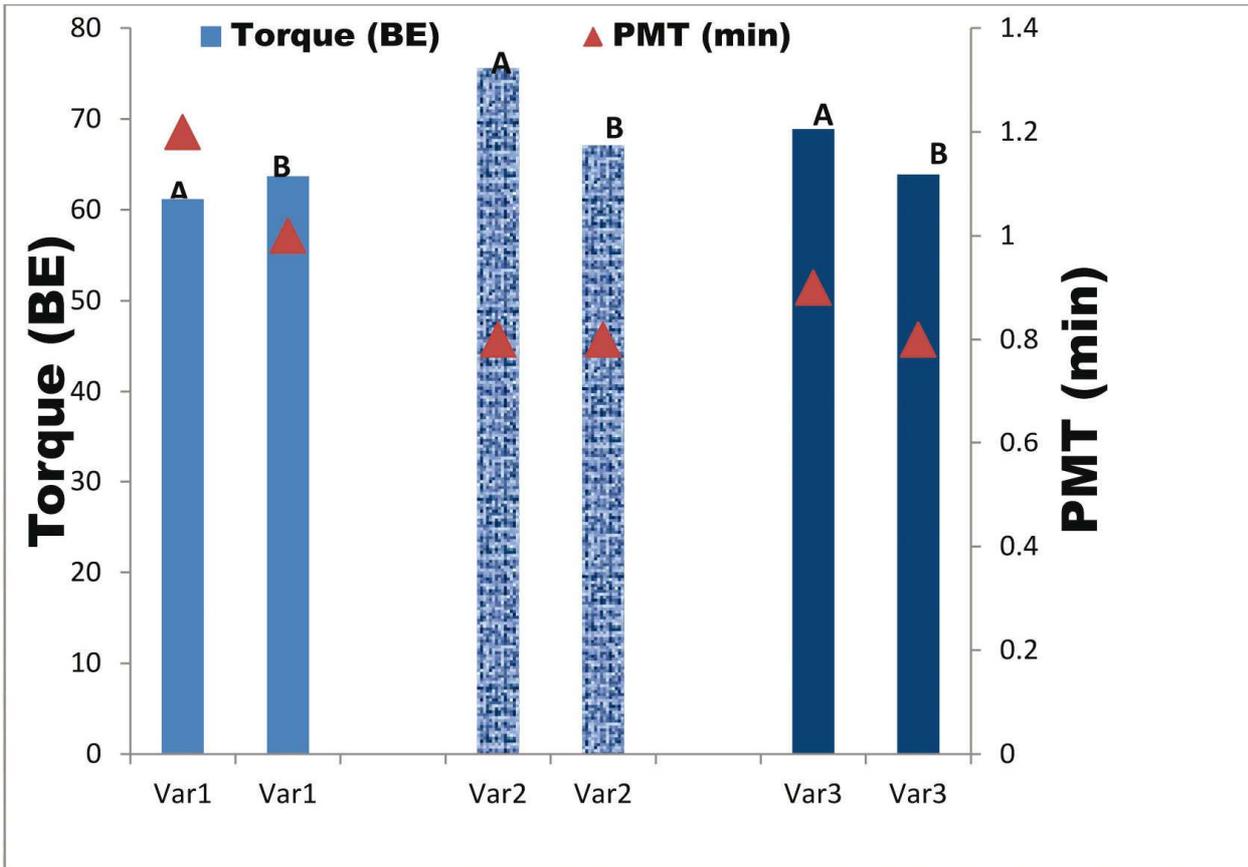


Fig 1. Whole meal flours of same wheat varieties grown at different locations (A and B) showing different Torque and PMT.

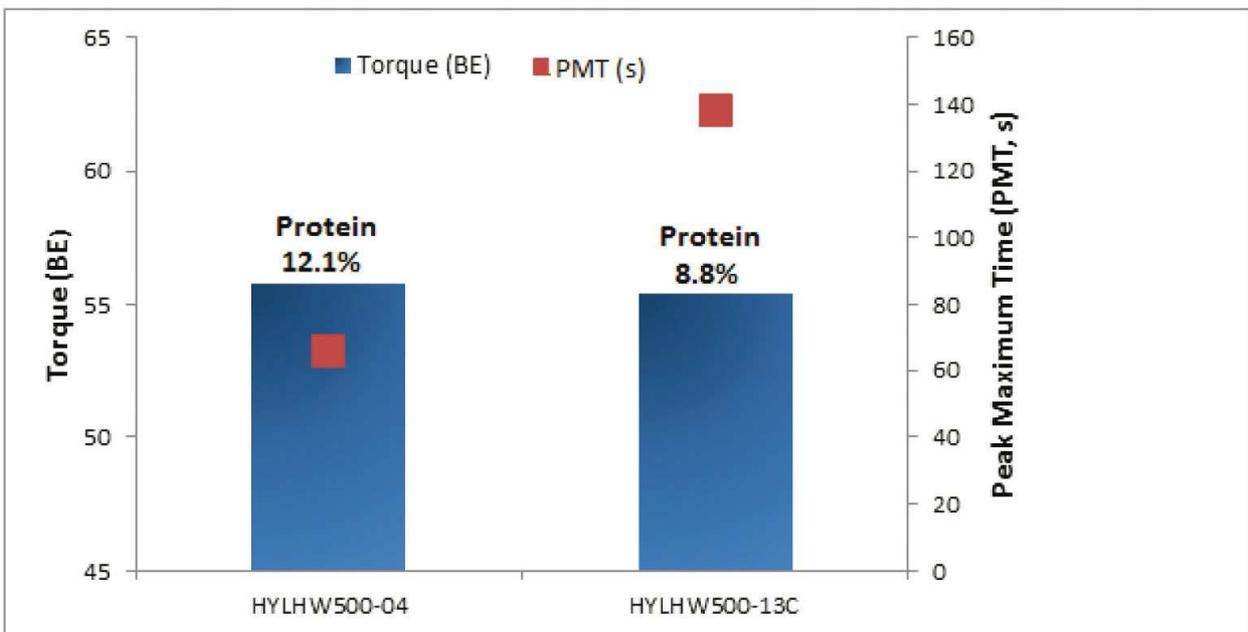


Fig 2. Wheat varieties with different protein contents but generating similar Torque in GlutoPeak.