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LACC4 - 4th ICC Latin American Cereals Conference
IGW - 13th International Gluten Workshop
11-14 March 2018
Mexico City – Mexico

New solutions to automate and optimize quality control and analytic

Markus Löns, Brabender

…where quality is measured.

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New solutions to automate and optimize quality control and analytic

Overwiev

- Farinograph-TS – smaller, lighter, easier to use
- Aqua-Inject – Automatic dosing and titration
- GlutoPeak – Rapid-Flour-Check
- MT-CA – Moisture testing state of the art

Benefit of all: more automatism to save time and money

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Precise flexible easy

time-saving space-saving

Brabender® Farinograph®-TS with Aqua-Inject

The new, small Farino®

…where quality is measured.

Our new, “small” Farino® features:

- Modular design
- New browser-based software: MetaBridge®
- Build-In-PC
- Ready to use: no installation necessary
- Small and compact housing
- Updatable on-line

MetaBridge® Brabender®

Brabender® Farinograph®-TS
Benefits of the new Farinograph®

Standard ports, connected with the Build-In-PC

- 4 x USB
- (Mouse, WLAN, keyboard)
- 1 x HDMI (screen)
- 1 x LAN (network)

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Brabender® Farinograph®-TS as a modular system
Configuration examples

Configure your ideal Farino from basic to comfort version

- ✓ Touch screen
- ✓ External touch
- ✓ Burette
- ✓ Aqua-Inject

Screen configuration

Water dosing system configuration

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New features Farinograph-TS:

- Accessible by multiple users from different locations
- Runs with standard operation systems like
  - Apple iOS, iPhone / iPad / Mac
  - Windows 10 / Win 7, 8, XP
  - Android all versions
  - Linux all versions
  - Blackberry
- Aqua-Inject

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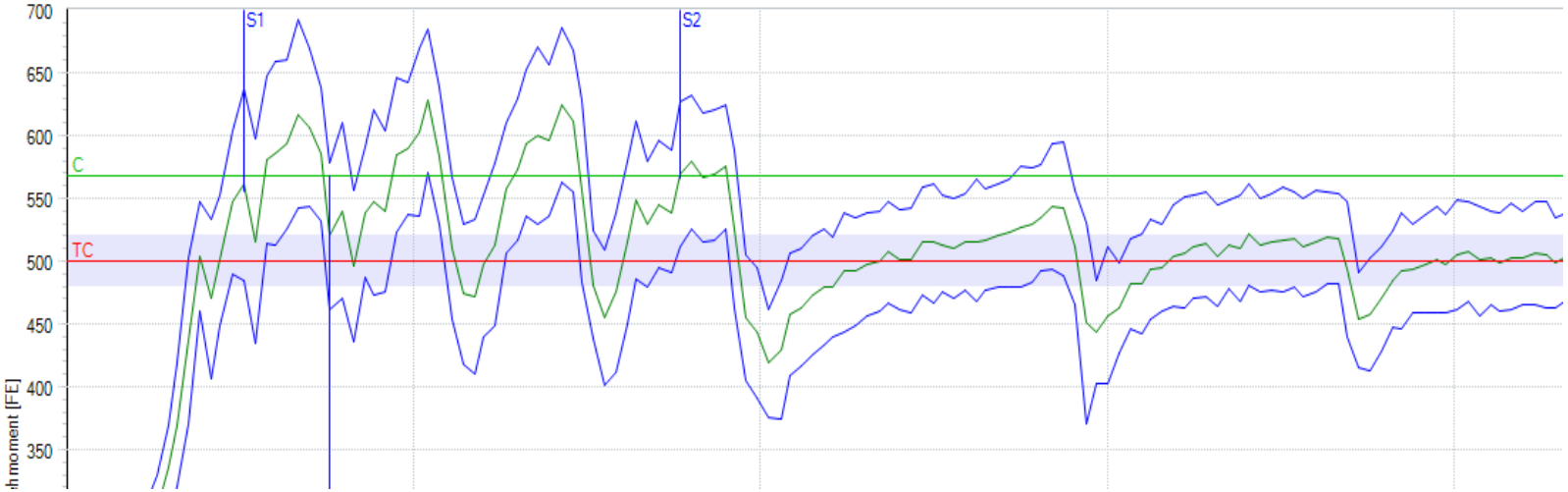
Automatic dosing and titration

The Aqua-Inject is an add-on instrument for the Farinograph-TS (and Farino-E + MetaBridge Controller) and can be used in connection with the Measuring Mixer S 300.

- Automatic dosing of water (0,3-2000 ml)
- High reproducibility and accuracy (± 0,1%)
- Precise temperature control of the dosing water
- Easy servicing and cleaning

Automatic tration curve

Finding of the right water absorption by using an automatic dosing system and save time



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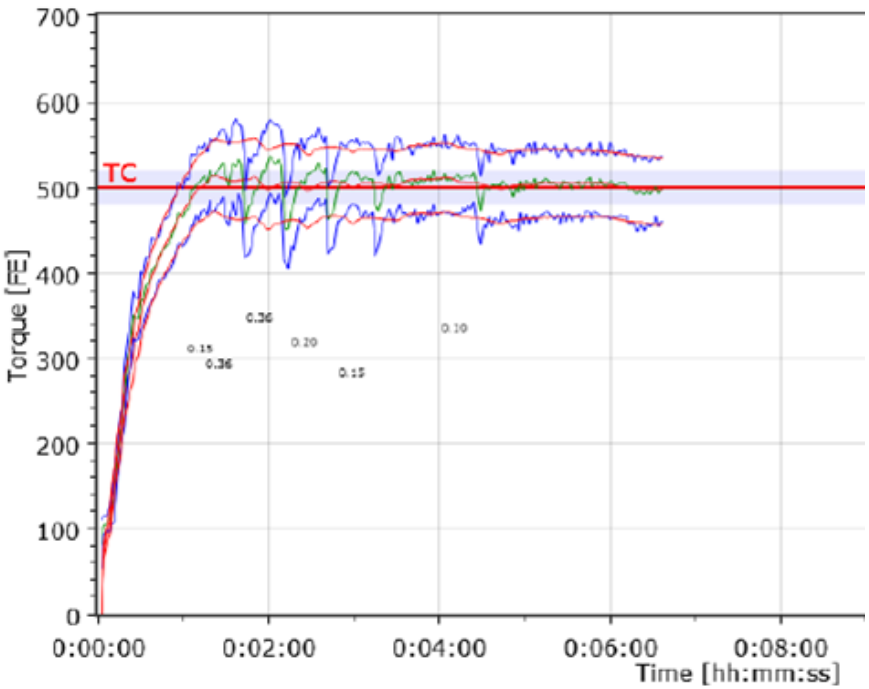
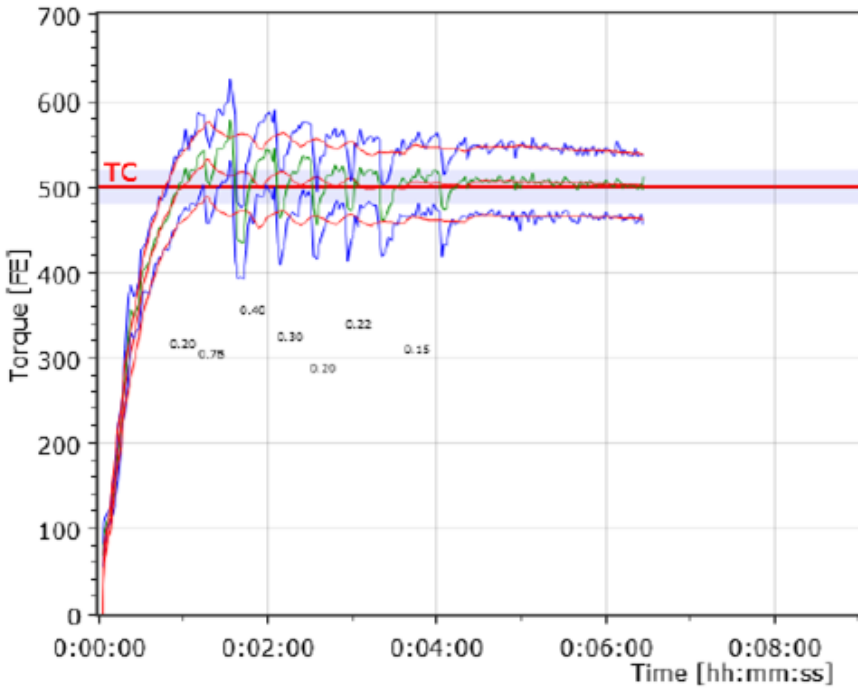
Examples automatic tration curves



Point	Value	Unit	Description
WS	56.0	%	Water added at measurement start
WP	57.3	%	Predicted water absorption



Point	Value	Unit	Description
WS	55.0	%	Water added at measurement start
WP	57.3	%	Predicted water absorption

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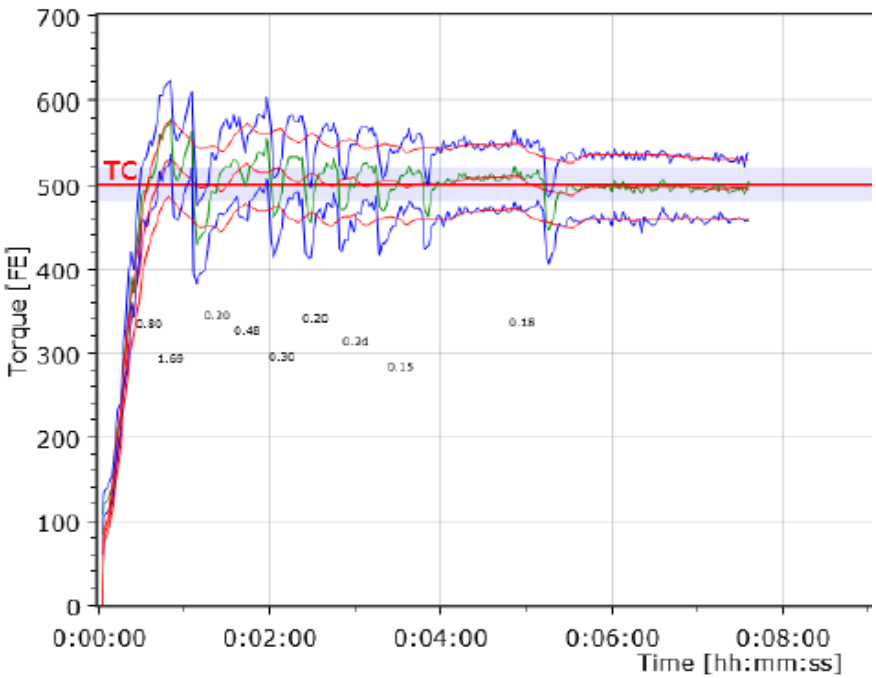
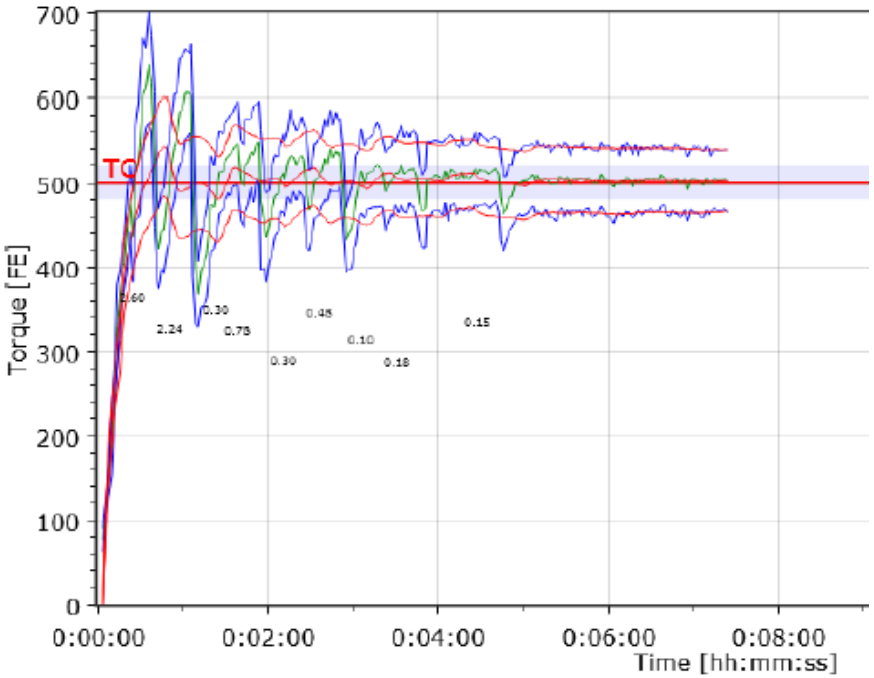
Examples automatic tration curves



Point	Value	Unit	Description
WS	53.0	%	Water added at measurement start
WP	57.2	%	Predicted water absorption



Point	Value	Unit	Description
WS	50.0	%	Water added at measurement start
WP	57.1	%	Predicted water absorption

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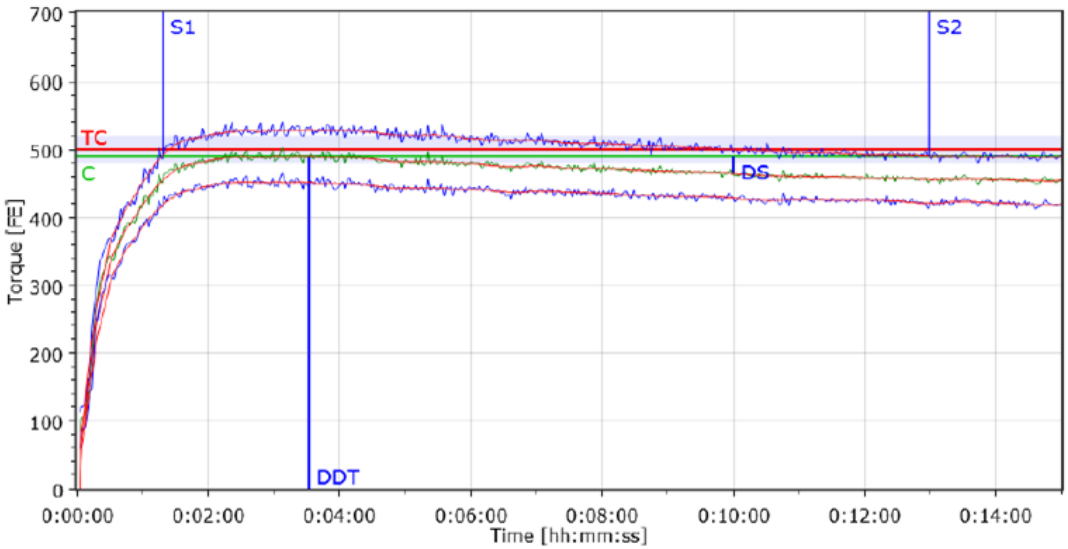
Examples automatic tration curves

WS	WP
50,0	57,1
53,0	57,2
55,0	57,3
56,0	57,3
57,4	57,2

WS – Water Start
WP – Water Prognosis



Point	Value	Unit	Description
T	00:15:00	hh:mm:ss	Measuring time
DT	28.5	°C	Dosing temperature
DDT	00:03:32	hh:mm:ss	Development time
C	490	FE	Consistency
WZ	57.4	%	Water added
WAC	57.2	%	Water absorption corr. for default consistency

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Time saving – the benefit from the combination Farinograph-TS - Aqua-Inject?

Lab technician working time until now:

Preparation Farino sample and titration curve *)	12 min
Cleaning	5-10 min
Preparation Farino sample and start of the test	5 min
Approx.	24 min

*) Depends from the flour

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Time saving – the benefit from the combination Farinograph-TS - Aqua-Inject?

Lab technician working time in the future:

Preparation Farino sample and start	5 min
Cleaning	5-10 min
Preparation Farino sample and start	5 min
Approx.	17 min

10 Farino per day: 70 min.
20 Farino per day: 140 min.
time for other lab work

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The Brabender® MetaBridge® Controller

- Connects the MetaBridge® with its advantages to older devices
  - Farinograph®-E/-AT
  - Extensograph®-E
  - Amylograph®-E
  - Viscograph®-E
  - MVAG®
- USB is essential
- Allows to use Farino-E with Aqua-Inject

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Brabender® GlutoPeak Rapid-Flour-Check

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The Principle

- Preparing of a slurry with flour and water
- Gluten will be separated during mixing and aggregates
- After a time (dependent upon the property of the sample), the gluten aggregates
- A uniform gluten network is formed, which results in a strong increase of the torque curve.
- Further mixing destroys the network, the torque decrease

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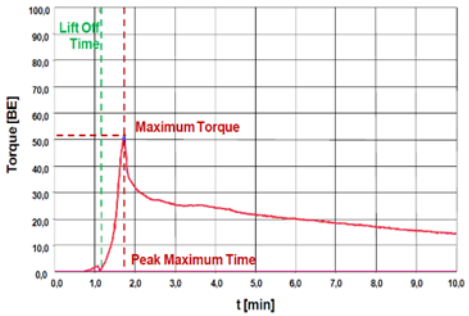
The Principle



- Most important are
  - the peak time and
  - the peak maximum
- Strong gluten: short peak times with high peaks
- Weak gluten: late peak times with low or even no peaks
- The peak time is between 60 and 600s (1-10min).

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Description how to run the new test

Please visit our booth

or have a look into

the Brabender YouTube Channel

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Brabender® GlutoPeak

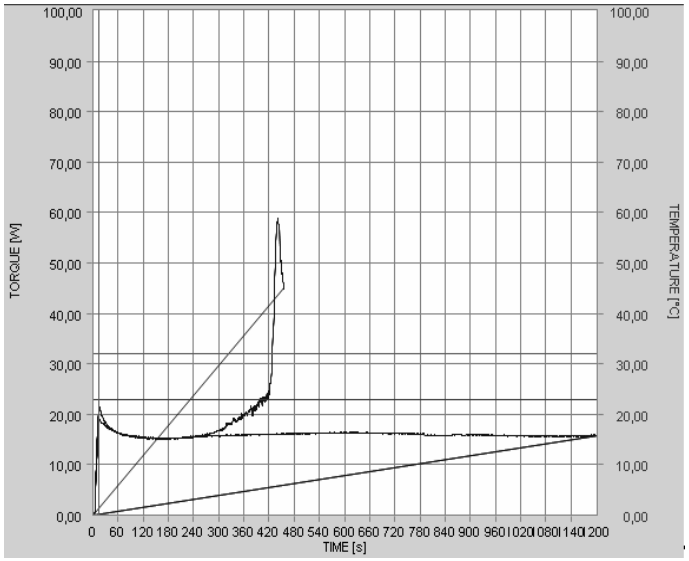
Flour or wholemeal flour

Liquid

Suspension High Speed

TORQUE

PC



Results by

- Evaluation software
- Correlation software

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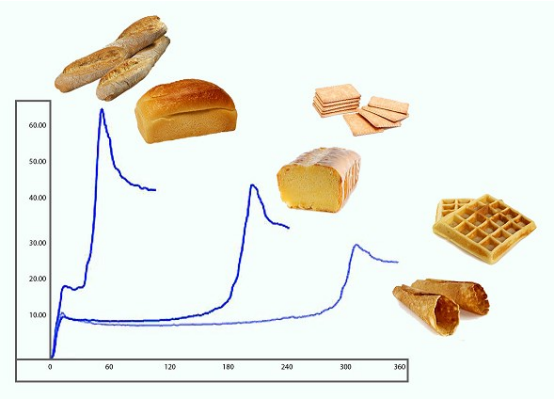
Brabender® New Methods
GlutoPeak Rapid-Flour-Check (RFC)

GlutoPeak RFC method features:

- Analyze flour and gluten quality fast and precisely
- Small samples size
- Benefits for
  - ✓ breeders
  - ✓ wheat traders
  - ✓ millers
  - ✓ bakers
  - ✓ research



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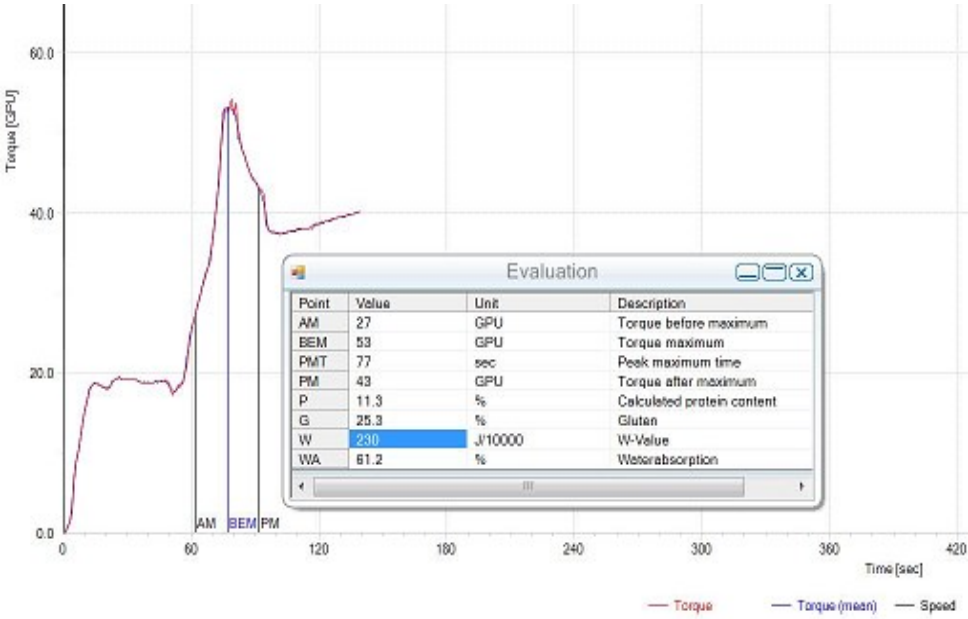
The Brabender GlutoPeak
The new flour method „ Rapid Flour Check“

What is characteristic about this new method?

- Sample amount of 9 g dist. water and 9 g flour
- Speed: 2750 rpm
- Temperature: 36°C
- Test time: < 5 min.
- New evaluation: “RFC”
  - Protein
  - Gluten (wet gluten)
  - W-Value
  - Water absorption



Evaluation

Point	Value	Unit	Description
AM	27	GPU	Torque before maximum
BEM	53	GPU	Torque maximum
PMT	77	sec	Peak maximum time
PM	43	GPU	Torque after maximum
P	11.3	%	Calculated protein content
G	25.3	%	Gluten
W	230	J/10000	W-Value
WA	61.2	%	Waterabsorption

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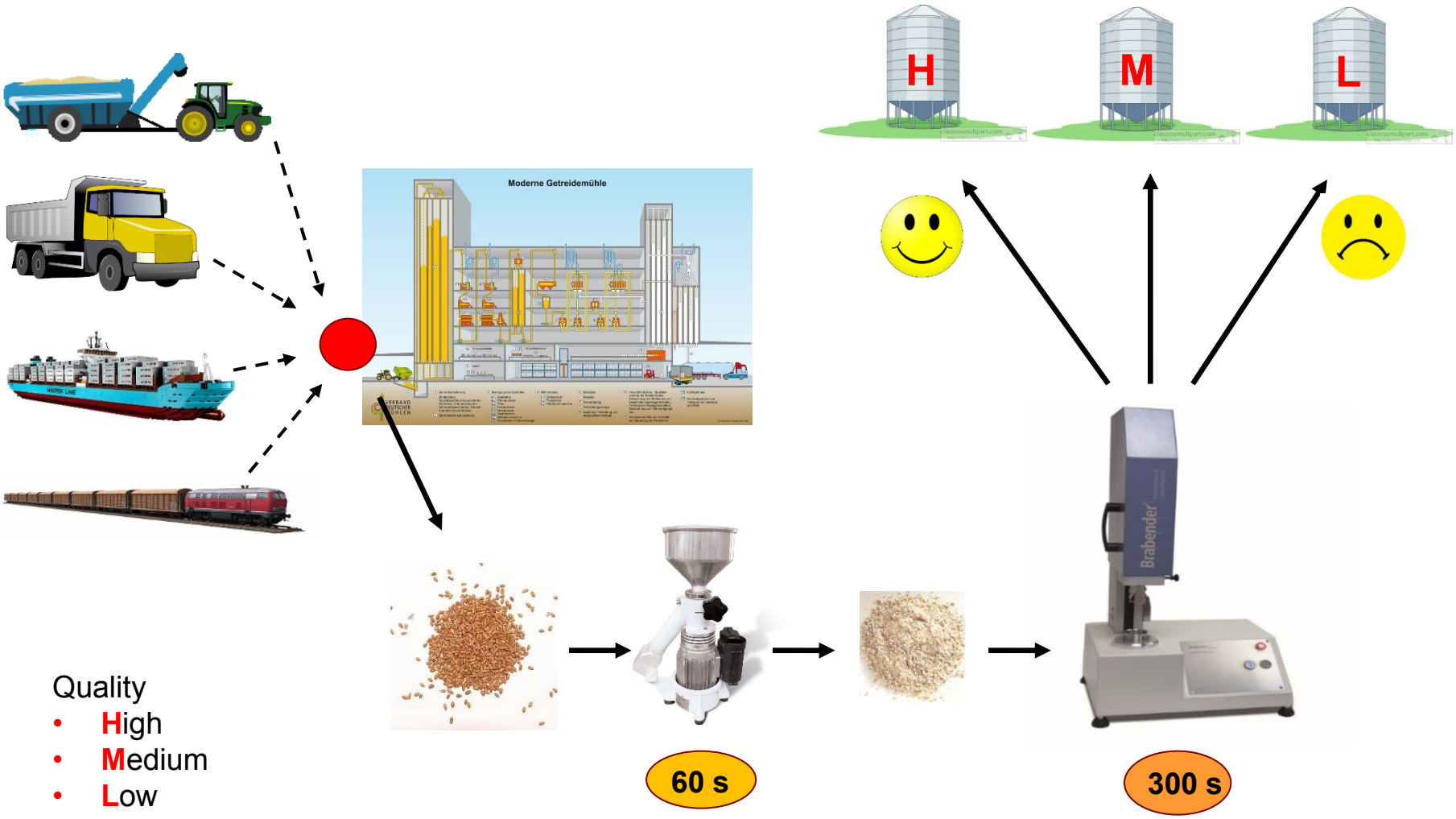
The Brabender GlutoPeak
Simpify your grain reception



Quality
- High
- Medium
- Low

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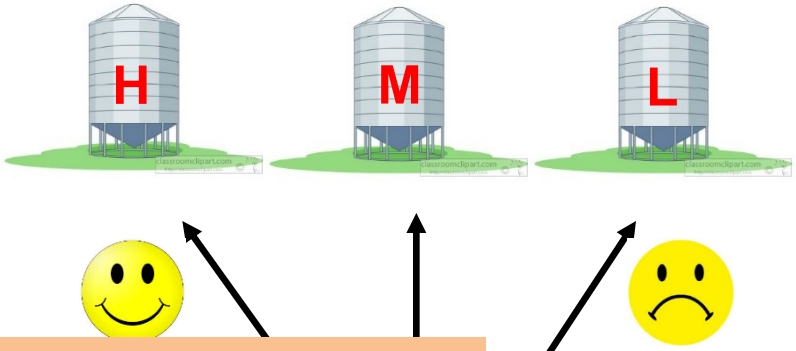
The Brabender GlutoPeak
Simpify your grain reception



Calculate your own time savings in the grain reception by using the GlutoPeak

Quality
- High
- Medium
- Low

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Time saving – the benefit from the combination GlutoPeak RFC - Farinograph-TS - Aqua-Inject?

Lab technician working time until now:

Preparation Farino sample and titration curve *)	12 min
Cleaning	5-10 min
Preparation Farino sample and start of the test	5 min
Approx.	24 min

*) Depends from the flour

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Time saving – the benefit from the combination GlutoPeak RFC - Farinograph-TS - Aqua-Inject?

Lab technician working time in the future:

Preparation GlutoPeak sample	3 min
GlutoPeak test and cleaning	5 min
Preparation sample Farino and start of the test	5 min
Approx.	13 min

10 Farino per day: 110 min.
20 Farino per day: 220 min.
time for other lab work

Additional benefit:
Good correlations of
- Wet gluten
- W-Value Alveograph
- Protein content

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Efficient precise flexible

time-saving easy

Brabender® MT-CA

The Moisture Tester „Advanced“

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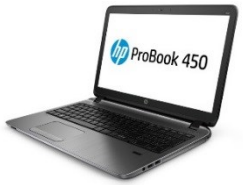
Brabender® MT-CA
The model versions

Modular design: touch screen or external screen



Both with intereated PC

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Features

- ✓ Rapid oven drying method
- ✓ 10 samples at the same time
- ✓ Accuracy better than 0.1 %
- ✓ Meets AACCI, ICC and ISO 712 requirements
- ✓ In-weighing 9-11 g
- ✓ Automatic reweighing after the test time
- ✓ Automatic calibration of the integrated balance
- ✓ Automatic calculation of moisture content

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Why rapid analyzer MT-CA?

MT-CA (130 °C / 60 min)

One test = 60 min.

Two tests = 63 min.

10 tests = approx. 90 min.

20 tests = approx. 180 min.

Drying balance (10 min)

One test = 10 min.

Two tests = 23 min.

10 tests = approx. 130 min.

20 tests = approx. 230 min.

Time for sample preparation: approximate 3 min. each

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Why rapid analyzer MT-CA?

MT-CA (155 °C / 20 min)

One test = 20 min.

Two tests = 23 min.

10 tests = approx. 60 min.

20 tests = approx. 120 min.

Drying balance (10 min)

One test = 10 min.

Two tests = 23 min.

10 tests = approx. 130 min.

20 tests = approx. 230 min.

Time for sample preparation: approximate 3 min. each

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The benefit for millers, e.g. from using the MT-CA

- ✓ High accurate results
- ✓ One working step in comparison to approx. 5-6
- ✓ Time saving because high automatic procedure

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THANK YOU
FOR YOUR ATTENTION!

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