

- ✓ precise
- ✓ flexible
- ✓ easy
- ✓ time-saving
- ✓ space-saving



Brabender Farinograph®-TS with Aqua-Inject

Our new, small Farino®

- Brabender at a glance
- Farinograph – what is it about?
- Water dosage System 'Aqua-Inject'
- New Measuring Mixer S 300
- Metabridge Software
- New Method – Gluten free and pseudo cereals
- Conclusion



- Founded in 1923
- Family-run enterprise, headquartered in Duisburg (Germany)
- One of the world's first supplier of grain and wheat flour testing instruments
- World market leader for food quality testing instruments, also provides instruments for the chemical industry
- Instruments for sample preparation, grain reception, quality control and extrusion
- Application laboratory for customers
- High focus on service and customer-individual software development

Brabender® GmbH & Co. KG

The leading supplier for food quality testing instruments



...where quality is measured.

Brabender®



1928:
The First Farinograph®
World's first wheat and
wheat flour quality tester



1998:
Farinograph®-E
The Farinograph® has been
continuously developed



2017:
Farinograph®-TS
Still the most-used
instrument of its kind

The Brabender® 3-Phase-System simulates the production of bakery products on a laboratory scale – integrated and practice-oriented

- ✓ Phase 1 – Farinograph®: gives information about the flour water absorption and the mixing characteristics of dough
- ✓ Phase 2 – Extensograph®: determines the stretching properties of dough and baking behaviour during baking
- ✓ Phase 3 – Amylograph®: measures the gelatinization properties of starch and the enzyme activity in flour



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- Laboratory mills for sample preparation
- Instruments for grain reception tests (e. g. moisture testing)
- Instruments for flour quality tests
- Rheological equipment for dough quality testing
- Starch quality testing instruments
- Laboratory extruders



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- Brabender® GmbH & Co. KG as the holding company
- Two sister companies located in Duisburg
- Subsidiary in South Hackensack (New Jersey, USA), further subsidiary in Russia planned
- 450 employees in total
- 80 sales agents represent Brabender® in 116 countries
- Export share of over 80 %



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Brabender Farinograph®-TS with Aqua-Inject

State of the art quality control

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What does it measure?

The Farinograph® measures the flour water absorption and the kneading characteristics of dough.

Why is this important?

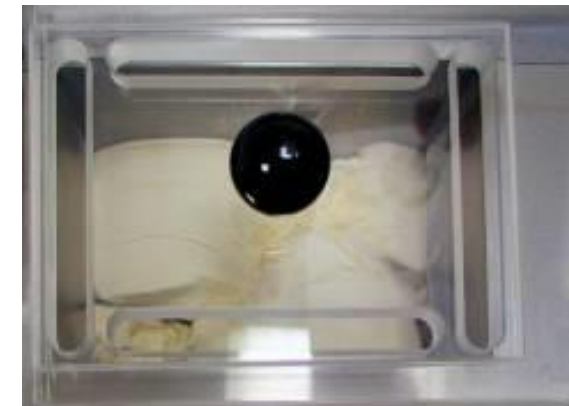
- ✓ Estimation of the optimum water amount for a flour to form a dough
- ✓ Prediction how a flour will react in different stages of production and baking
- ✓ Definition of flour specifications for a given purpose
- ✓ Assurance of stable product quality

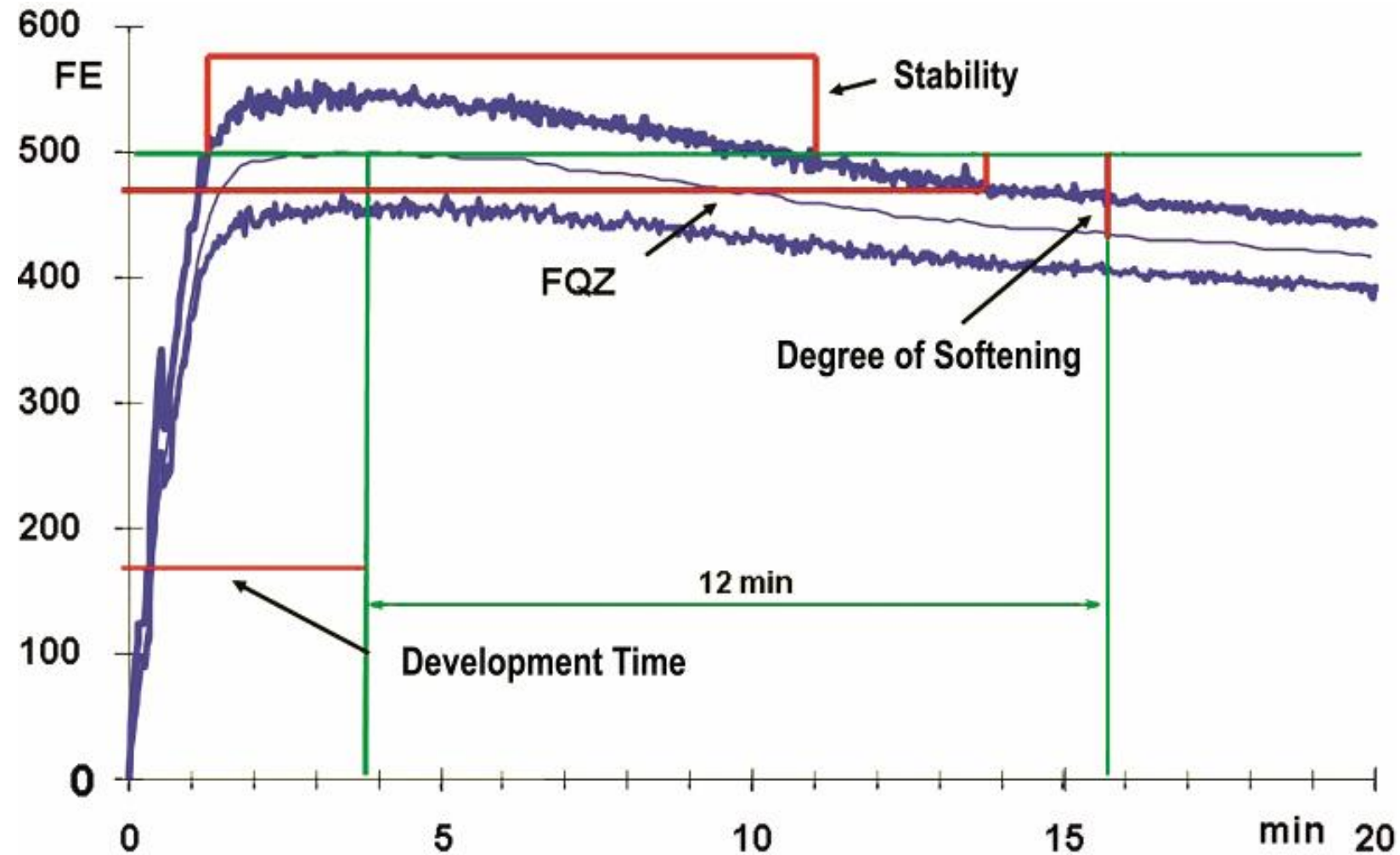


...where quality is measured.

The test procedure:

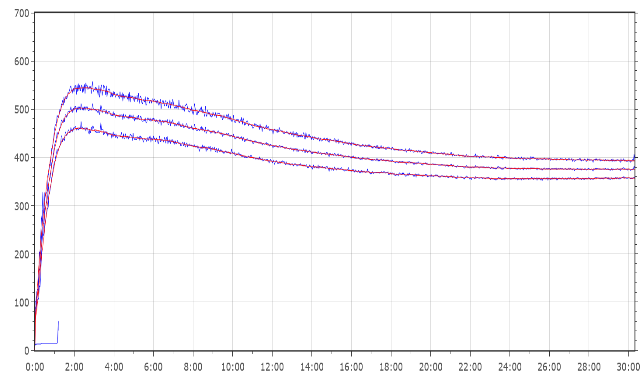
- A flour sample of is weighed and placed into a mixing bowl
- Water is added to the flour and mixed to form a dough
- A curve is recorded, according to the resistance of the dough against the mixing action
- The shape of the curve gives information about:
 - ✓ the water absorption of the flour
 - ✓ the dough stability
 - ✓ the development time
 - ✓ the degree of softening



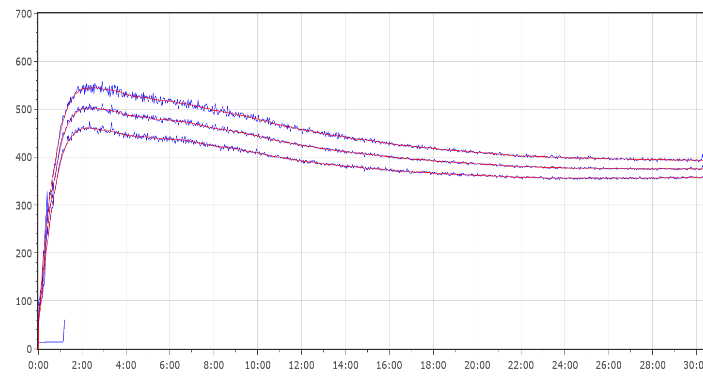


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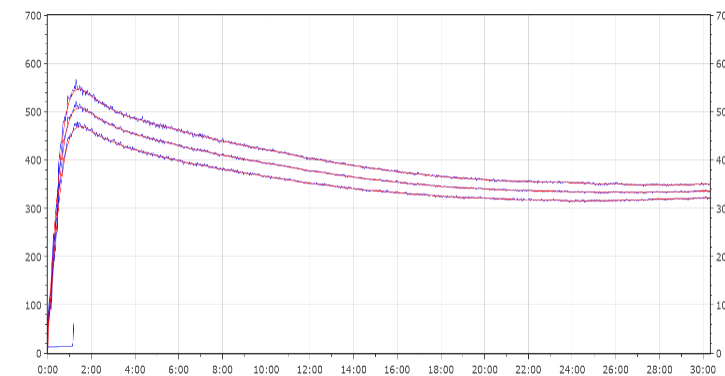
The Farinograph helps you to determine the right application for the analyzed flour



Rolls and bread



Toast



Biscuit & cake

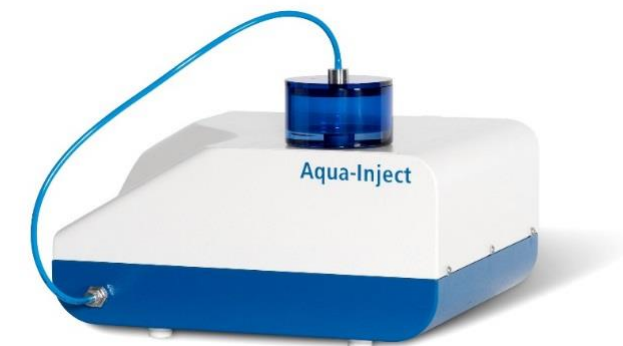


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Working without glass burette:

The Aqua-Inject is an add-on instrument for use with a Brabender Farinograph-TS and can be used for the Measuring Mixer S 300.

- Automatic dosing of water (0,3-2000 ml)
- High reproducibility
- Precise temperature control of the dosing water – no additional thermostat



Advantages

- ✓ High accuracy (better than 0,1%)
- ✓ Electronically controlled, constant water temperature of 5° (with external thermostat) to 50°C ($\pm 0,2^{\circ}\text{C}$)
- ✓ Dosable quantity of water (0,3-2000 ml)
- ✓ Easy servicing and cleaning



Advantages

- Enhanced usability: Slim design and low overall weight
- Optimized temperature control
- Sensor technology upon customer request



New mixer



Old mixer

The new MetaBridge® software:

- ✓ Ready to use: no installation necessary
- ✓ User-friendly interface
- ✓ Accessible by multiple users from different locations
- ✓ Compatible with different types of end devices
- ✓ Updatable on-line



...where quality is measured.

The Brabender logo, consisting of the word "Brabender" in a bold, blue, sans-serif font, with a registered trademark symbol (®) to its right.

- ✓ Allow your colleagues to access the MetaBridge® and monitor tests simultaneously
- ✓ Conduct and manage measurement jobs on several instruments at a time




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Software compatibility

MetaBridge is compatible with all presently available tablets* and/or smartphones*:

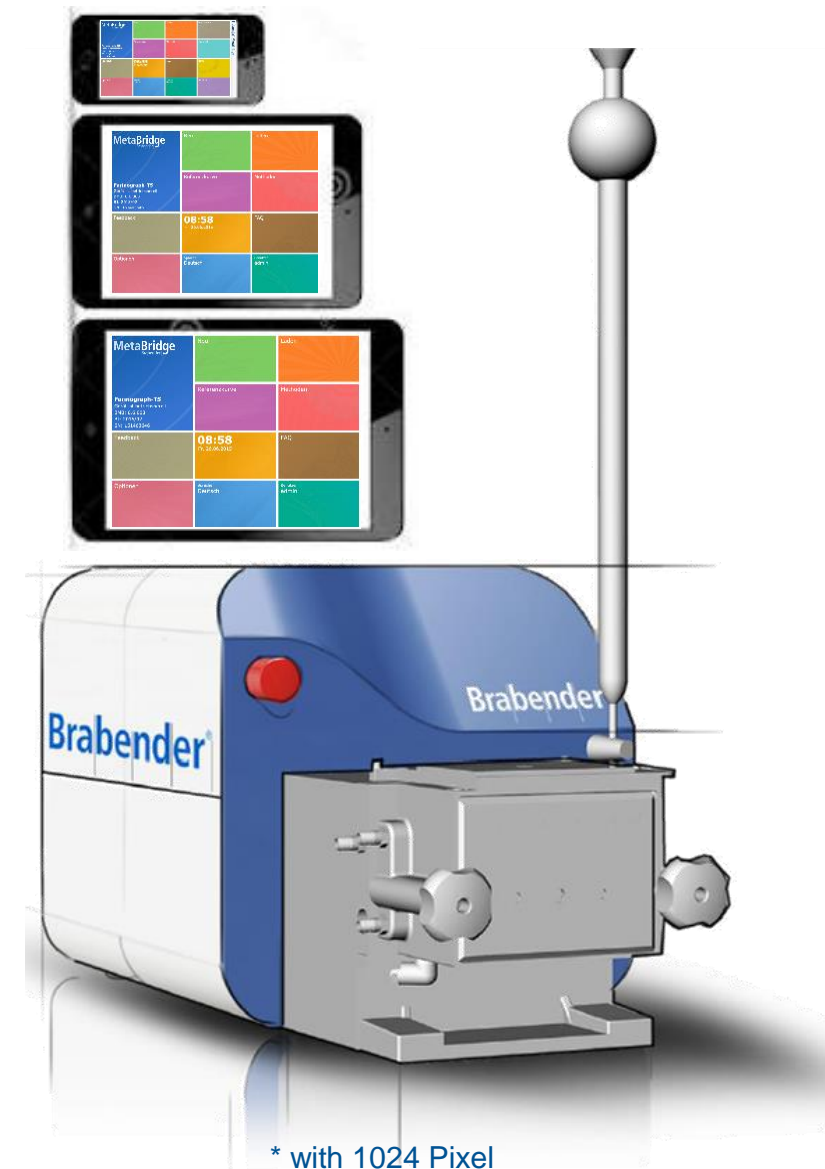
 Apple iOS, iPhone / iPad / Mac

 Windows 10 / Win 7, 8, XP

 Android all versions

 Linux all versions

 Blackberry

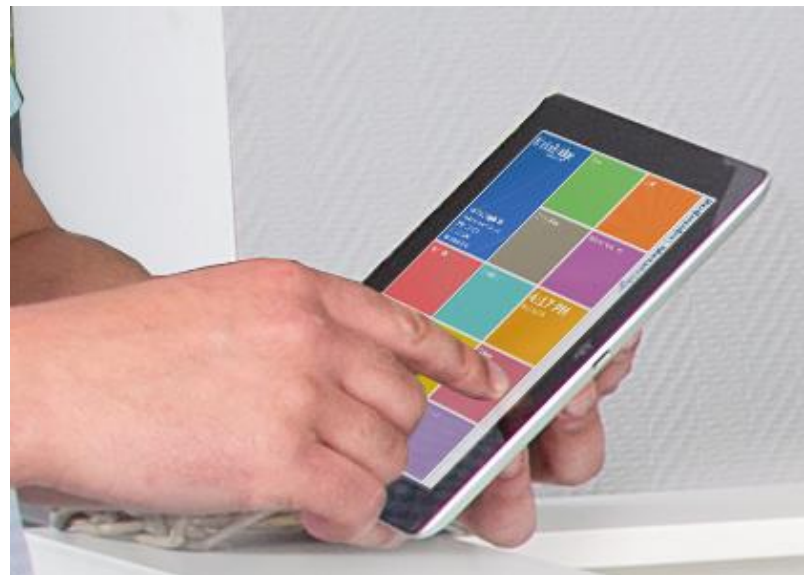


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Remote access for support services – saving time and money

- ✓ Problem rectification without on-site appointment: Our service technicians can rapidly access your instruments via the MetaBridge® in the event of a malfunction



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)



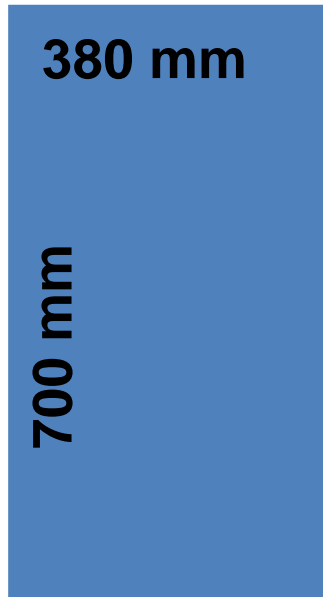
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Brabender® Farinograph®-TS

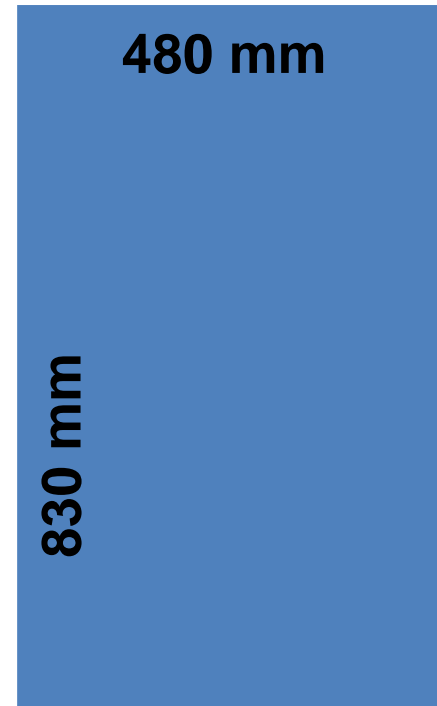
Benefits of the new Farinograph®

Small and compact housing

→ Low space requirements



Farino®-TS



Farino®-E / -AT



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Configure your ideal Farino from the basic to the comfort version

Screen configuration

Water dosing system configuration



Farino-TS without
touch screen



Farino-TS with
touch screen



Farino-TS with
burette



Farino-TS with
Aqua-Inject

Our new, small Farino® features:

- Modular design: touch screen or external screen
- New browser-based software: MetaBridge®
- Build-In-PC
- Small and compact housing
- State-of-the-art drive
- Aqua-Inject





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Gluten free Packaged Food, potential growth markets:

Bakery products 2014-2019

1. USA (15 % / Year)
2. UK / Australien / Italy
(each 7 % / Year)
3. Germany (5 % / Year)



Quelle: Euromonitor International, 2014

Noodles 2014-2019

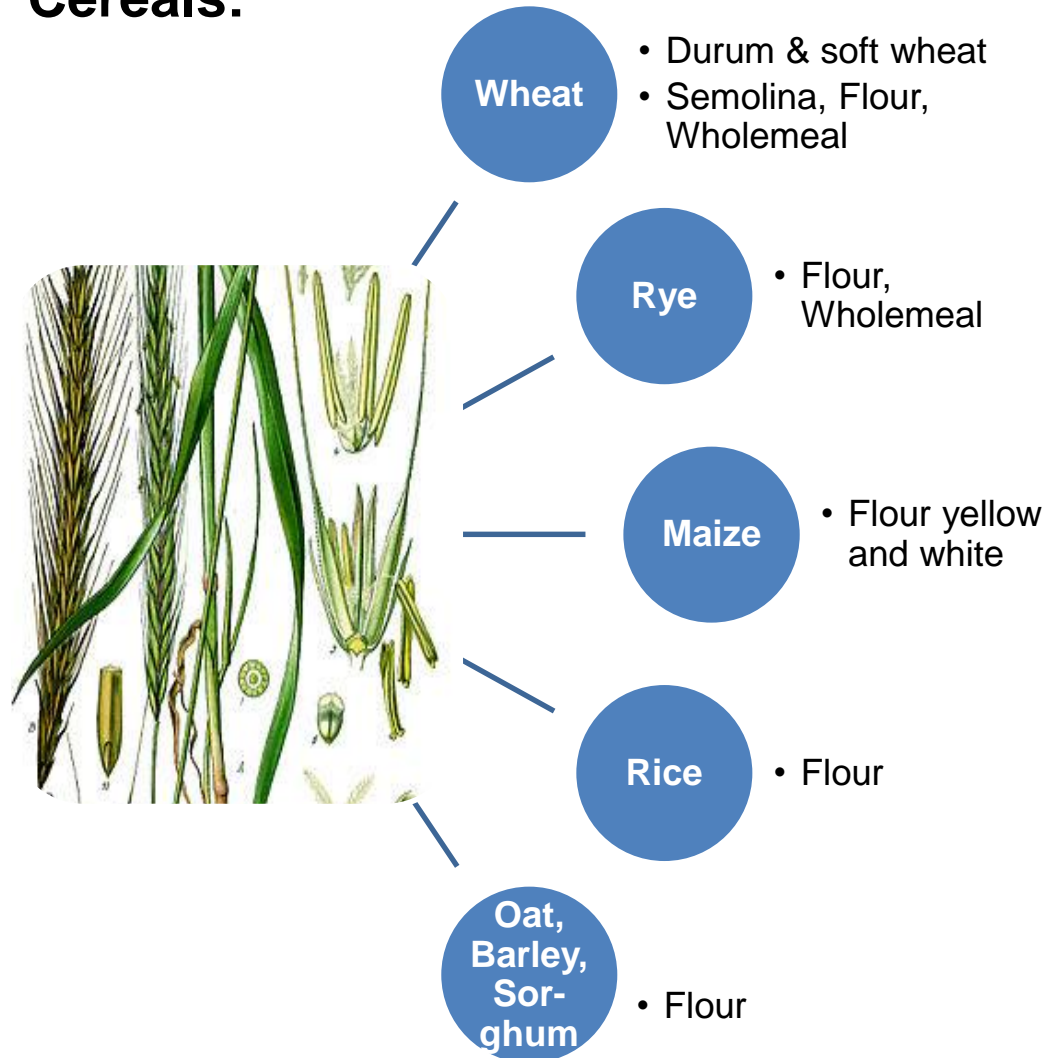
1. Italy (29 % / Year)
2. Germany (14 % / Year)
3. USA / Venezuela
(each 12 % / Year)



(except: goods which do not contain natural gluten)

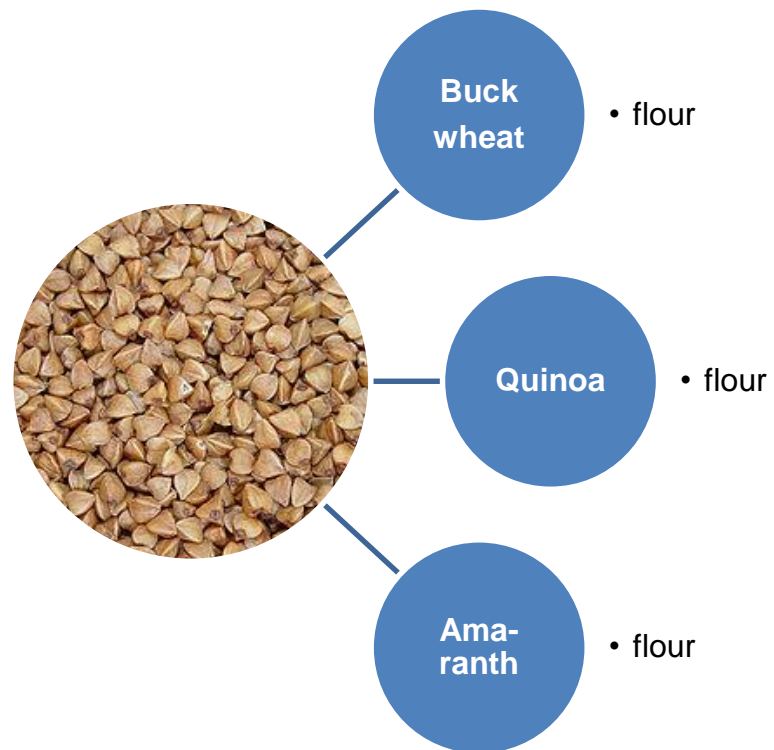
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Cereals:

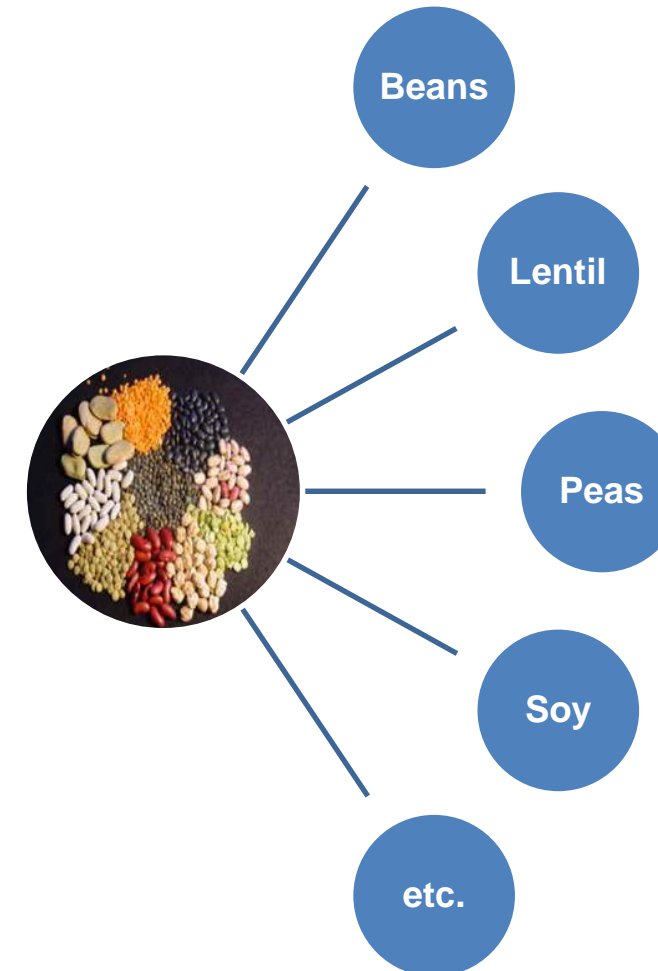


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Pseudo cereals:



Legumes:



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Measuring the water absorption on kneadable (Gluten free) doughs with the Farinograph

General Requirements:

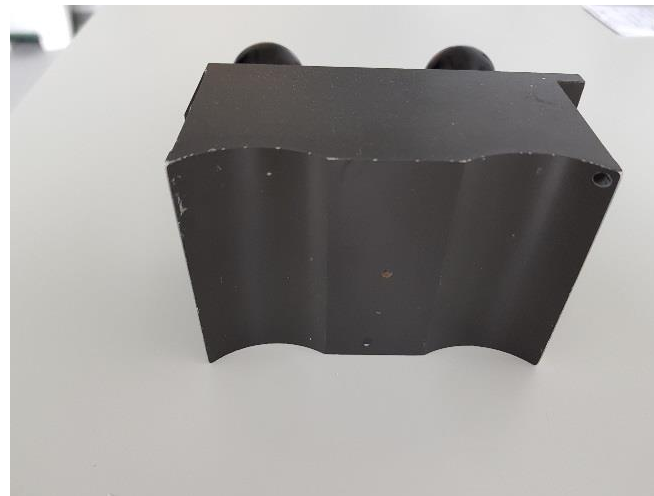
- Farinograph -E, -AT or -TS
- Thermostat
- Filling piece for 300 g Mixer

Parameter settings (sample):

- 30°C waterbath temperature
- 63 rpm speed
- 200g sample size
- 1000 BU target consistency

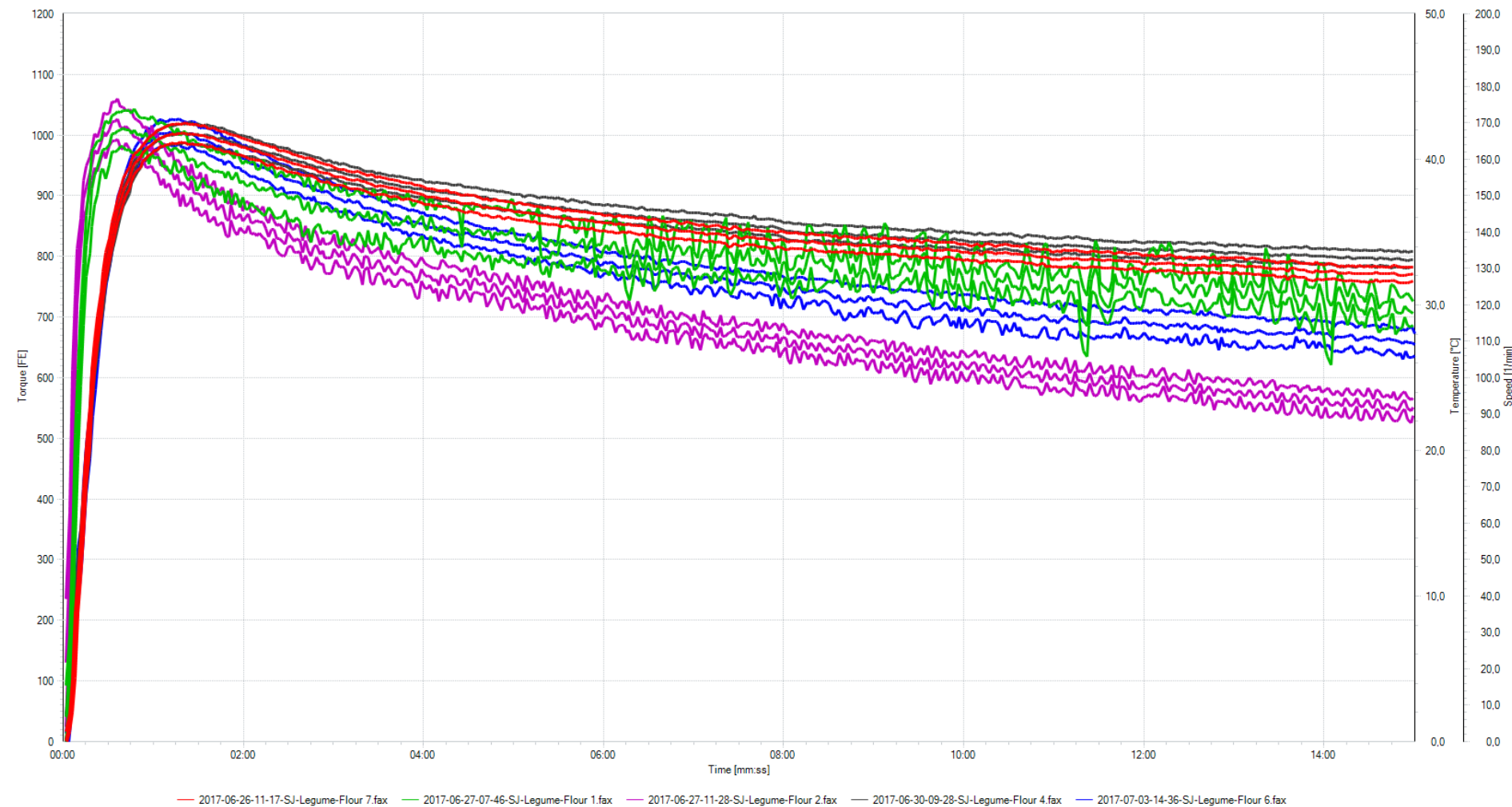


Details of the assembly unit at kneader S300 with filling piece



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Result for a test measurement with legume




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Results for a tests measurement with legumes

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Farinograph® Correlation 5 - [Evaluation]

FileViewPrintTestToolsWindow?Export



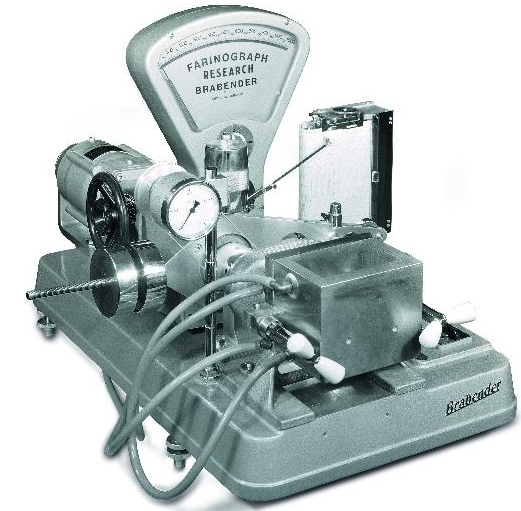
	Units	2017-06-26-11-17-SJ-Legume-Flour 7.fax	2017-06-27-07-46-SJ-Legume-Flour 1.fax	2017-06-27-11-28-SJ-Legume-Flour 2.fax
Stability	mm:ss	00:51	00:48	00:34
Development time	mm:ss	01:22	00:48	00:40
Consistency	FE	1015	1011	974
Measuring time	mm:ss	14:59	15:00	14:59
Degree of softening (10 min after beginning)	FE	192	232	381
Degree of softening (ICC / 12 min after max.)	FE	219	256	420
Farinograph quality number		22	13	10
Dosing temperature	°C	28.3	28.1	28.2
Water added	%	87.0	35.0	36.5
Water absorption corr. for default consistency	%	87.4	35.3	35.9
Water absorption corr. for default moisture content	%	87.4	35.3	35.9

2017-06-30-09-28-SJ-Legume-Flour 4.fax	2017-07-03-14-36-SJ-Legume-Flour 6.fax
00:53	00:50
01:22	01:17
997	1045
14:59	20:00
174	286
197	325
23	19
27.7	27.4
88.0	67.1
87.9	68.2
87.9	68.2

...where quality is measured.

The Farinograph® offers you lots of worthwhile benefits:

- ✓ Quality assurance:
 - ✓ Compliance with international standards
 - ✓ Optimization of flour quality
 - ✓ Constant product quality
- ✓ Cost saving:
 - ✓ Saving flour in production
 - ✓ Minimizing production losses
 - ✓ Optimized mixing time saves energy



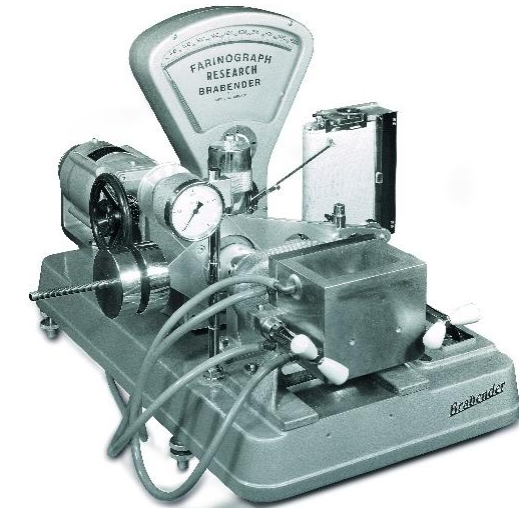
The Brabender® Farinograph® :
Reliable flour quality control since 1928

...where quality is measured.

Brabender®

The Farinograph® offers you lots of worthwhile benefits:

- ✓ Best profit:
 - ✓ higher flour price
 - ✓ more baking products and higher yield
 - ✓ Perfect dough
 - ✓ Satisfied customers



The Brabender® Farinograph® :
Reliable flour quality control since 1928



...where quality is measured.

Brabender®

- Raw materials do not have good or bad technological properties, but there is a right or wrong application for them.
- Brabender® is your partner when you want to find the right application for the supplied grain and the produced flour.



...where quality is measured.

Any questions?

Feel free to contact our team!

By the way, we cordially invite you to have a look at
the other Brabender® solutions presented at our booth!



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