

KWS BEETROMETER® – Beet Quality Analysis For The 21st Century

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To be competitive, sugar factories need to always optimize their sugarbeet processing by reducing energy consumption and material usage, improving throughput and quality, as well as reducing manual labor and waste. Due to its versatility the KWS BEETROMETER® successfully runs in tare houses, receiving labs and on harvesters, but it could in principle be run on any homogeneous stream of chopped beets, also inside the factory. The KWS BEETROMETER® is a solution allowing real-time measurement for quality assessment of sugarbeets on the way to further digitalization of processes in the factory.



Standardized sample preparation replaces brei production



In-flow NIRS measurement includes the whole heterogeneity of beets and replaces mixing



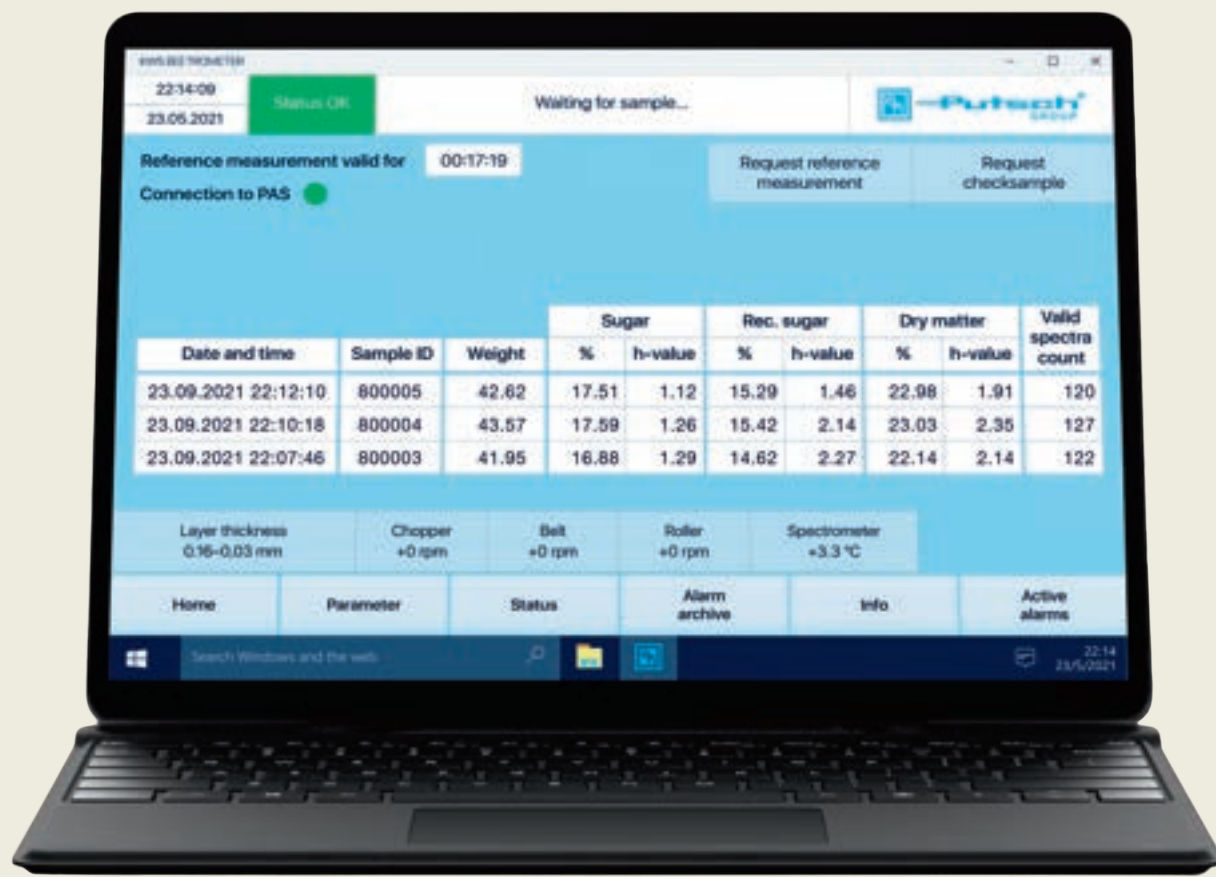
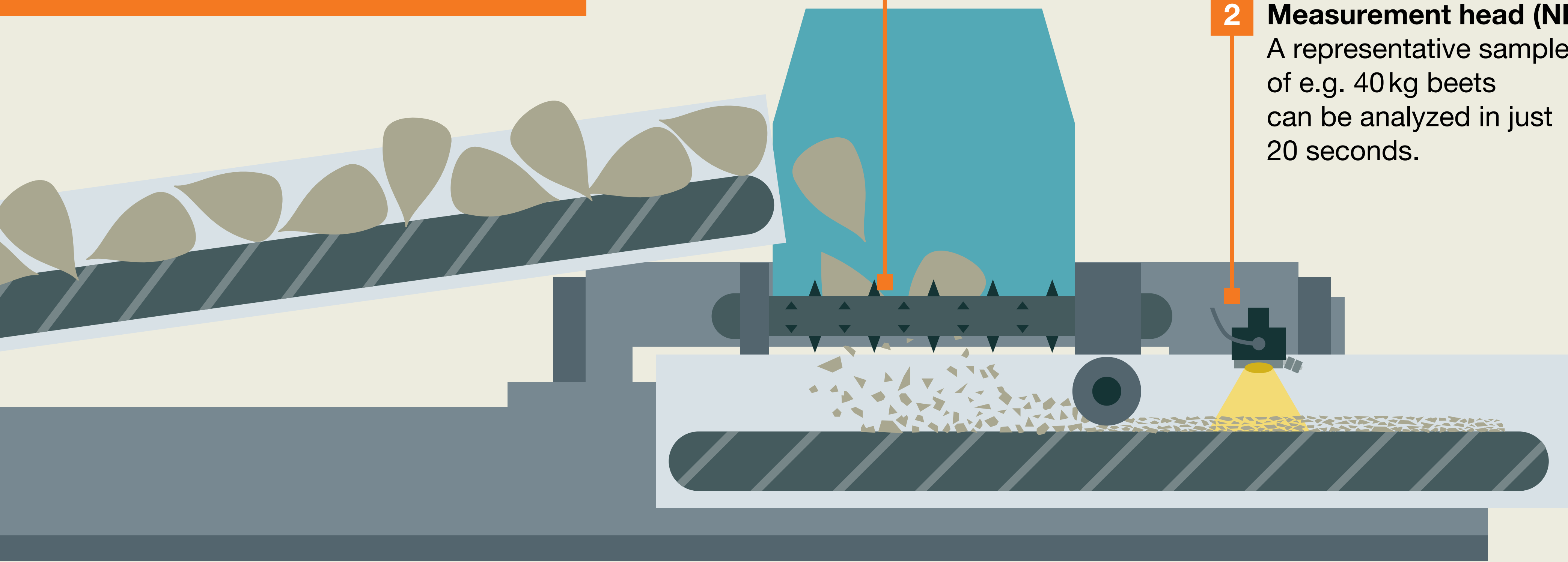
Raw data is recorded and stored to allow re-evaluation

KWS BEETROMETER®

Spectrometer	Process Spectrometer with DAD (PSS 1721)
Wave length range	850–1650 nm
Integration time	40 ms
Measurement time	20 s

1 Chopper
In the system developed by KWS the sugarbeets are chopped into uniform pieces.

2 Measurement head (NIRS)
A representative sample of e.g. 40 kg beets can be analyzed in just 20 seconds.



Real-time data analysis is performed by an automated system:

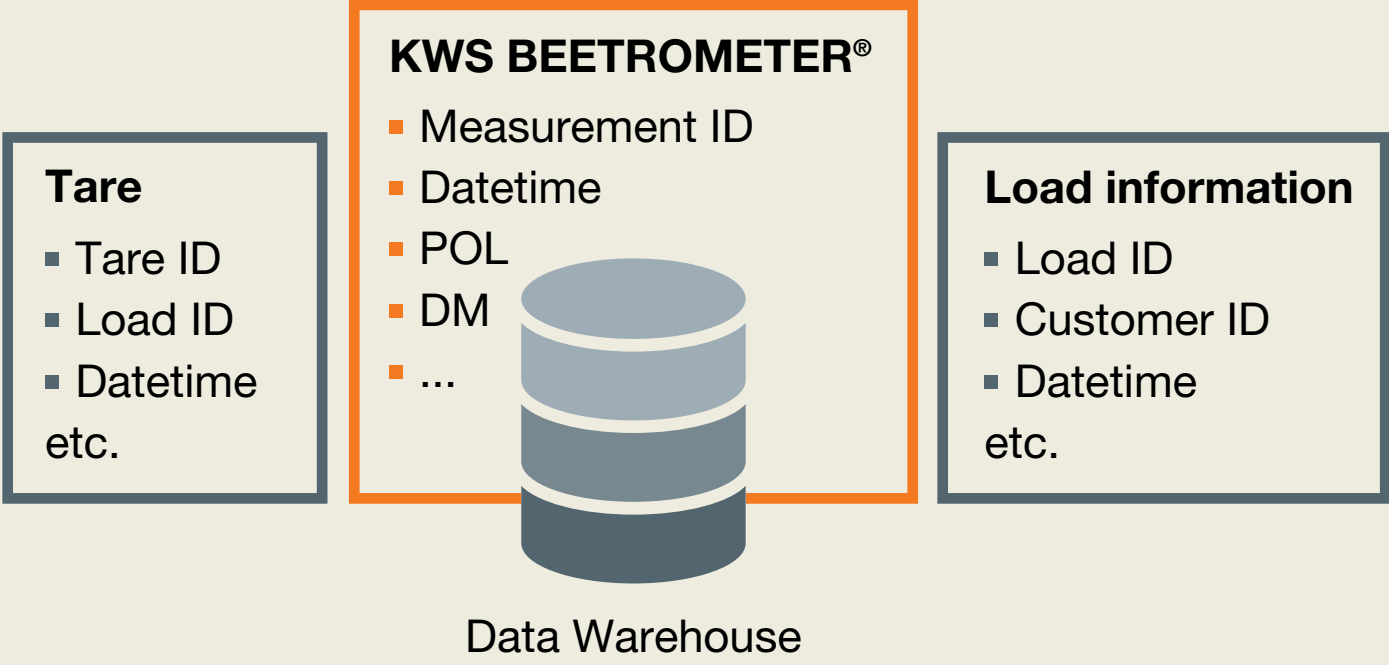
- Sophisticated data pre-treatment
- Online chemometric predictions
- Warning and alarm thresholds
- Flexible data interface

Performance of the calibrations

	Calibration range			Validation	
	min	max	SD	SEP	R
Polarisation	10.4	23.6	2.0	0.34	0.98
Recoverable Sugar	8.1	21.9	2.1	0.39	0.97
Dry Matter	14.4	30.1	2.5	0.34	0.98

Operational benefits

- Fast analysis in 20 seconds.
- Patented chopper design, no brei production.
- Fully automated, no human errors.
- No chemicals, lower costs, eco-friendly.
- Easy software and hardware integration, data transfer.
- Data storage for later re-analysis.



Reporting can be incorporated into existing databases and QM systems

The flexible automated system can be implemented in the whole value chain in quality analysis of sugarbeets



Factory unit



Harvester unit



Mobile unit



More information:
www.kws-beetrometer.com

