Anton Paar

Quality Analysis of **Sugar Beet**

Betalyser

Perfect Your Sugar Beet Reception
Every Day

Sugar beet quality is essential for the economic success of sugar manufacturers and seed growers. A rating system for the sugar beet should be based on objective, quality parameters regarding the sugar content, as well as the molasses-forming ingredients.

Betalyser is the ideal solution for analyzing the clarified extracted sugar beet brei filtrate on these ingredients – i.e. sugar, sodium, potassium, and α-amino nitrogen – in compliance with the corresponding ICUMSA* methods. It calculates the sugar yield, molasses sugar content, and alkalinity, and supports sugar factories as well as seed growers to determine the true value of sugar beet.

Sugar factories: Improve your sugar beet quality and your profitability
As a forward-thinking sugar factory, Betalyser system enhances the processing quality of the delivered sugar beet by analyzing the recoverable sugar content. Offer incentives to farmers who produce high-quality sugar beet and always be sure to pay a fair price for the quality of beet delivered. Betalyser pays for itself within a few years. By giving advice to your farmers on optimal fertilization and cultivation techniques, your sugar beet quality will be increased and your profits maximized.

Seed growers: Develop your highest-yield sugar beet
As a leading seed growing company you can use using the Betalyser system to generate better sugar beet varieties with high sucrose content and improved white sugar yield. This requires accurate measurements of large quantities of samples to obtain statistically relevant data for a successful selection of the best possible seed. Betalyser provides you with the capability of running several thousand samples with limited manpower which will save you lots of time and money.

* ICUMSA = International Commission for Uniform Methods of Sugar Analysis

Highlights
of Betalyser

FIND OUT MORE

www.anton-paar.com/apb-betalyser

Optimized measurements ensure quality results
Betalyser is capable of analyzing lead-clarified and aluminum-clarified beet brei filtrates or filtrates clarified by other methods. This ensures that you can use Betalyser independent of the clarifier, even if you change your clarifier in the future.

Unmatched sample throughput
With Betalyser you can measure several thousand samples per day at a measuring speed of 30 seconds per sample with limited manpower to keep up with the speed of your automated sample preparation system. Additionally, you will push your downtimes close to zero thanks to the long-life LED light source of the MCP Sucromat saccharimeter – you won't have to replace your lamp for years.

Elimination of human error
All instruments are connected to a PC to control the analysis cycle, record data and calculate the expected sugar yield. Only minimal user interaction is required. We can adapt the BeetLab operating software to meet your special requirements upon request.

Setup based on your needs
Betalyser can either work as a stand-alone system or can be integrated into automated mix/filtration tracks. Even data exchange with your existing PLC (Programmable Logic Controller) or process control system is no problem. Please contact us in case we can help with an engineering contractor.

Simplicity at every step
Sugar beet reception laboratories often work with seasonal staff, so our software takes the lead and guides the operator with clear and understandable instructions displayed on the computer screen. On the instrument, all parts the operator needs to access are located on the front to allow fast replacement and cleaning during the campaign, ensuring the shortest downtimes.

Support next door
First-class user support is guaranteed as all instruments are developed and manufactured Anton Paar, ensuring fast and competent supply, service, and support from the same source around the globe. Anton Paar factory-certified service teams which speak your language are available in your country on-site to ensure seamless support. With a guaranteed response time of 24 hours, you can lead a seamless, fully-optimized sugar beet campaign.

Betalyser

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BETALYSER SYSTEM	
Analysis time	30 s/sample
Sample throughput	120 samples/hour

MCP 5300 SUCROMAT AUTOMATIC SACCHARIMETER FOR DETERMINATION OF THE SUGAR CONTENT (POL, °Z)	
Methods	ICUMSA Method GS6-1 ICUMSA Method GS6-3
Measuring range	±259 °Z, International Sugar Scale
Accuracy	±0.01 °Z
Repeatability	±0.01 °Z
Wavelength	589 nm
Light source	LED light source, average lifetime of 100,000 hours

FP-5 FLAME PHOTOMETER FOR DETERMINATION OF POTASSIUM (K) AND SODIUM (Na) CONTENT	
Principle of operation	Flame emission measurement of potassium (K) at 768 nm and sodium (Na) at 589 nm in comparison to internal lithium standard at 671 nm
Method	ICUMSA Method GS6-7
Measuring ranges	0 mmol/kg beet to 199.9 mmol/kg beet (K and Na)
Sensitivity	0.1 mmol/kg beet (K and Na)
Accuracy	1.5 % or 0.5 mmol/kg beet, whichever is greater
Data ports	RS232 serial interface port
Fuel	Pure propane or mix of pure propane/butane gas at 50 mbar (0.73 psi)
Compressed air	Dust- and oil-free, 2 bar to 4 bar (28 psi to 58 psi)

TESTAMIN 5 DOUBLE-BEAM PHOTOMETER FOR DETERMINATION OF α-AMINO NITROGEN BY THE "BLUE NUMBER METHOD," CAPABLE OF ANALYZING LEAD-CLARIFIED AND ALUMINUM-CLARIFIED SUGAR BEET EXTRACTS	
Principle of operation	Double-beam filter photometer with automatic compensation of sample color by measuring the difference of relative transmittance at 610 nm in the measuring and reference channel
Method	Method GS6-5, Blue Number Method
Light source	LED light source, average lifetime of 100,000 hours
Measuring range	0 mmol to 100 mmol α-amino nitrogen/kg beet
Sensitivity	0.1 mmol α-amino nitrogen/kg beet
Accuracy	±0.5 mmol α-amino nitrogen/kg beet
Sample cells	Two flow-through type cells made of stainless steel, length: 40 mm One cell in the measuring channel, the other cell in the reference channel

DATA PROCESSING AND CONTROL	
Hardware specifications	Upon request
Software	BeetLab standard operating program for Betalyser with the choice of five methods for computing sugar beet quality data: - New Braunschweig Method - Wieninger & Kubadinow Method - Reinefeld & Winner Method - Hellenic sugar (EBZ) - One customer-definable method

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