

ZPF 2.0

ZORN INSTRUMENTS - always original



chemical-free cane juice filtration
ZORN Pressure Filter

ZPF 2.0

environmentally friendly & cost efficient

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Why NIRPOL?

Near Infrared Polarimetry (NIRPOL) analysis of cane juice has increasingly been used by mill laboratories as a safe and efficient method to test raw material quality and to determine grower payment.

NIRPOL has furthermore helped laboratories to avoid the occupational health risks and rising costs associated with the safe disposal of clarifying agents used in conventional pol analyses (e.g. lead acetate).



ZPF 2.0 Advantages



Pressure filtration with ZORN's ZPF 2.0 works much faster than conventional methods. Preparation of a juice sample takes less than one minute. Waiving of chemical clarifying agents allows for the pol and Brix analysis to be carried out with the same sample. Apart from the increase in efficiency use of the ZPF 2.0 further saves cost as the filter-cel grade diatomite (Kieselgur) used for filtration can be disposed of as standard, non-hazardous waste.



Background

Present-day NIR Polarimeters use near infrared light at a wavelength of 882.6 nm. At this wavelength light travels through even highly coloured solutions, thus eliminating the need for colour removal from the cane juice. Since pressure filtration does not remove any optically active components, it adds the advantage to NIRPOL that pol readings correspond to a solution that has not been chemically altered. It is for this reason that there are differences between conventional leaded pol and unleaded NIRPOL. In general NIRPOL values are lower than leaded pol values. That is because the higher level of fructose present in the solution in the absence of clarifying agents adjusts the angular rotation to the left, i.e. in the negative direction (laevorotatory) (Crees and Brotherton, 1991; Anon, 1999).

Procedure



Sample preparation needs a spoonful of diatomite (Kieselgur) only. Pour in juice sample, close the lid and start air compression. Approximately 30 seconds later, depending on product, the clear filtrate is ready for use in a NIR polarimeter. After decompression simply remove filter cake and start next filtration.



1 Insert filter paper



3 Apply compressed air



5 Remove filter cake



2 Pour in juice sample



4 Observe as filtration proceeds



6 Filtration finished



HOCHPRÄZISIONS

PRÜFTECHNIK



HOCHPRÄZISIONS

PRÜFTECHNIK

