

Pollach, G.; Hein, W.; Rösner, G.:

New Findings towards Solving Microbial Problems in Sugar Factories.

Zuckerindustrie 124 (1999) No. 8, 622-637

Abstract:

This paper contributes to the existing body of knowledge on microbiology of beet extraction and thick juice storage, including new measures against microorganisms. A striking parallelism between nitrite limitation and acetic acid limitation in full-scale trials in which hop-acids were used led to laboratory trials, which showed that acetic acid was formed during nitrite formation. Further trials, which are important for pulp ensiling, showed a switch-over from an unwanted butyric acid formation to lactic acid formation on continuous β -acid dosage to press water. The authors point to successful trials abroad with full suppression of microorganisms, because rather high bacterial levels are necessary to run Austrian factories. During the last campaign, the suppression of microorganisms was improved by new hop products based on alkaline solutions. New investigations on the fate of β -acids showed a low carry-over of 25% of β -acids from extraction towers to the raw juice. With improved sensitive methods, white sugar samples showed low values of 0.02 mg/kg of β -acids.

As to thick juice storage, hop products were not successful as a surface treatment. Thus, treatment with caustic soda solution is recommended instead of a possible formalin application. Independent of the surface, the first positive results were obtained with hop-acid applications to the bulk of the thick juice as a means of controlling bacterial activity there.

The complete text is available in English and in German.