Symposium on Effective Alkalinity

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History

The term "Effective Alkalinity" was originated by H. Bruniche-Olsen of the Danish Sugar Company, who first reported on this work in the October, 1947, issue of "Sugar" in an article entitled "The Physical Chemistry of Second Carbonation." Soon after this article was published we of the Amalgamated Sugar Company began an investigation of the principles of effective alkalinity in order that we might apply them to our carbonation process. Mr. Olsen and A. Brieghel-Muller further explained this concept in the April, 1949, issue of "Sugar."

Definition

Effective alkalinity is measured on first carbonation juice and is that alkalinity which is active in binding carbon dioxide and deliming the juice. It is computed by measuring the alkalinity of the juice to 9.25 pH and subtracting from this value the lime content of the juice as measured by either the soap or versenate method.

Uses

1. The value of effective alkalinity will stand as a record of juice quality.

2. Knowing the value of effective alkalinity, one can control second carbonation properly both as to the correct corbonating point and, if necessary, the proper amount of soda ash to add. When we say proper control of second carbonation we are referring to that control which will provide the lowest possible limesalts.

Results at Nampa

In the 1948 campaign at Nampa, Idaho, where this concept was strictly adhered to, we realized a reduction in residual limesalts of 34 percent, which resulted in an increase of 46 percent in tons of beets processed for each evaporator body boil-out.

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