

INVERSION OF CANE SUGAR IN SYRUPUS.*

(SECOND PAPER.)

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In a paper on this subject read before the New York State Pharmaceutical Association, June, 1915 (*JOURNAL A. PH. A.*, August, 1915, p. 945), I called attention to the fact that *syrupus* made by either cold percolation or heat contained practically no invert sugar, but that after standing, both syrups contained a large amount of reducing sugar; the sample made without heat containing more invert sugar than the other one. The samples were originally made January 28, 1915, and contained the following amounts of invert sugar:

Cold Process Syrup	0.174 percent invert sugar
Hot Process Syrup	0.138 percent invert sugar

The cane sugar from which they were made was tested the same day and contained 0.111 percent invert sugar, thus showing that practically no inversion took place in the manufacture of the samples.

The tabulated results of the tests, which were made bimonthly, showed that the percentage of invert sugar in both samples kept on increasing; the last date reported being June 3, 1916, at which time the cold process syrup contained 6.586 percent and the hot process syrup 5.751 percent.

Since that time I have tested the samples very frequently, the results being as follows:

		Cold process.	Hot process.
July	3, 1915	10.480 percent invert sugar	8.801 percent invert sugar
August	5, 1915	17.750 percent invert sugar	13.800 percent invert sugar
September	23, 1915	27.111 percent invert sugar	19.597 percent invert sugar
October	4, 1915	28.320 percent invert sugar	20.671 percent invert sugar
November	1, 1915	31.034 percent invert sugar	21.492 percent invert sugar
December	6, 1915	32.684 percent invert sugar	23.421 percent invert sugar
June	3, 1916	41.097 percent invert sugar	31.565 percent invert sugar

The method of analysis was that employed in connection with the results reported in the former paper—Munson and Walker's "Uniform Method for Determining Reducing Sugars in General" (*U. S. Dept. of Agr., Bur. of Chem., Bull. 107, rev. page 241 and 242*).

These remarkable results prove, as those reported last year did, that samples of *syrupus*, while practically free from invert sugar when made, become inverted upon standing; the inversion being greater in the cold process syrup than in that in which heat is employed in the manufacture, and that reporting the presence of commercial glucose as an adulterant of *syrupus* merely on the presence of a large amount of reducing sugar is an unsafe procedure.

I am still at work on the subject and hope in my next paper to present further results of the investigation.

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