

and peptones were then added and the solutions sterilized at 100° C. When they were cool they were inoculated and kept at 29-31° C. in a thermostat. At the end of four days the solutions were filtered and the sugar again determined, taking into account the slight concentration of the liquor during the fermentation. The loss in sugar was considered as the amount fermentable. As about 4 per cent of the amount of sugar consumed is converted into glycerine, instead of alcohol, and as 180 grams of sugar produce 92 grams of alcohol, we find that 49 per cent of the fermentable sugars gives us the theoretical production of alcohol.

The results of the analysis are given in Table 2.

TABLE 2

Sample.	1	2	3	4	5	6	7	8	9	10	11	12
	Acid Value 20 cc. = cc. N 10 Alk. th.	Sp. Gravity at 15° C.	Total Solids grams per 100 cc.	Ash grams per 100 cc.	Org. Matter grams per 100 cc.	Total Sugars as Glucose, grams per 100 cc.	Organic matter made up of Sugars, per cent.	Fermented Sugars, grams per 100 cc.	Total Sugars Fermentable, per cent.	Alcohol, grams per 100 cc.	Alcohol, per cent by volume.	Pentoses as Xylose, grams per 100 cc.
1	11.65	1.027	6.1	0.48	5.63	1.5	26.6	1.12	75.0	0.55	0.70	0.593
+			10.2		9.4	2.5		1.86		0.91	1.15	
2	6.1	1.016	3.4	0.22	3.18	0.98	30.9	0.65	66.3	0.32	0.41	0.408
+			10.2		9.35	2.9		1.95		0.95	1.20	
3	16.8	1.043	10.4	0.66	9.74	2.77	28.4	1.98	70.7	0.97	1.23	1.105
4	33	1.045	10.0	0.75	9.25	2.50	27.2	1.7	68.0	0.83	1.05	0.926
5	15	1.047	10.3	1.20	9.1	1.32	14.4	0.86	65.1	0.42	0.53	0.562
6	16.0	1.046	10.8	0.94	9.86	2.02	20.5	1.39	68.8	0.68	0.86	0.695
7	13.9	1.037	7.9	0.81	7.09	1.47	20.7	0.96	65.3	0.47	0.59	0.587
+			11			2.02		33		0.65	0.82	
8	16	1.047	10.5	1.34	9.16	1.67	18.2	1.02	61.2	0.50	0.63	0.673
9		1.048	11.2	1.07	10.13	2.1	20.7					
10		1.048	11.32	1.12	10.20	2.0	19.6					
11	12.6	1.0475	11.0	1.11	9.89	2.07	20.9	1.32	63.0	0.65	0.82	0.741
12	19	1.051	12.34	1.11	11.23	2.02	18.0	1.34	66.3	0.66	0.84	0.673

† Corrected to the average total solids of the other liquors supplied by this mill.

On examining the specific gravity and total solids it seems apparent that samples 1, 2, and 7 had been diluted before they reached the laboratory; consequently, they were corrected in the