

TWENTY-FOURTH ANNUAL SUMMARY OF CHEMICAL LABORATORY REPORTS

SOUTH AFRICAN SUGAR FACTORIES, SEASON 1948-49

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The 1948-49 sugarcane crop is the first since 1944 not to have been very seriously affected by drought, although the general average rainfall for 1948 was again considerably below the average for the fourth time in the past five years.

The three intervening crops were all more or less seriously affected by the drought cycle that extended from November, 1944, to December, 1946.

There was a record winter drought in 1948 also from May to September inclusive, when the total rainfall was only 1.52 inches or 17.6 per cent. of the average. But this came too late to affect the 1948 crop except to some extent late in the season, and in any case the consequences of a winter drought are not as far-reaching as those of severe drought during summer.

The total crop for 1948-49 was 5,216,144 tons of cane, which was surpassed in the years 1939, 1940, 1943 and 1944; this yielded 607,845 tons of sugar, only surpassed in the record year of 1944 when it was 614,158 tons.

As in all recent years, the crop was no doubt adversely affected to an undetermined extent by the continued deficiency of fertilizers. This has lately been relieved to some extent by a better supply of superphosphate, but the scarcity of the equally important nitrogenous fertilizer is still very acute.

The very dry weather during May to September in 1948, though affecting very adversely the young cane due to be cut the following season, probably benefited the 1948 crop by promoting a high sucrose content of cane for the greater part of the season, more than it injured the crop by reducing the yield of cane, or hampered recovery of sugar by promoting high fibre content of cane and low purity of juice. Thus the average sucrose content of the crop was 13.89 per cent. of cane, which is considerably above the average for this country. The average sucrose content of the preceding ten seasons, since Coimbatore cane varieties formed a predominant part of the crop, is 13.63 per cent.

The ratio of cane to sugar was 8.55, corresponding to a yield of sugar on cane of 11.70 per cent. and of sucrose of 11.57, which was surpassed only during the 1945 and 1946 seasons when the average sucrose content of cane was over 14 per cent.

Because of the relatively large cane crop a considerable proportion of it was harvested during May

and June, or later than November. Consequently no more than 70 per cent. of the crop was cut during what we call the optimum period of July to November, and the difference in factory yields is usually much to the disadvantage of the cane cut before or after this period, though not quite so much this year as in some.

Comparison of results from cane harvested during the July-November period, compared with those of earlier and later months of the harvesting season.

	Per cent. total Cane.	Ratio Cane/Sugar.	Sucrose per cent.	Fibre per cent.	Purity Mixed Juice.
Mean, 1928/1942—					
Optimum period	73.01	9.03	13.77	15.31	85.88
Balance of crop	26.09	10.15	12.56	15.65	84.50
1944					
Optimum period	66.57	8.43	14.00	15.78	86.58
Balance of crop	33.43	9.20	13.01	15.93	85.41
1945					
Optimum period	73.75	8.06	14.66	16.03	86.33
Balance of crop	26.25	9.01	13.21	15.88	85.95
1946					
Optimum period	85.64	8.27	14.33	16.20	85.88
Balance of crop	14.36	8.96	13.49	16.27	85.74
1947					
Optimum period	77.07	8.65	13.58	15.78	86.48
Balance of crop	22.93	9.57	12.45	15.87	85.43
1948					
Optimum period	70.48	8.30	14.26	15.83	86.02
Balance of crop	29.52	9.22	13.01	16.07	85.68

It is greatly to be hoped, however, that the introduction of labour-saving devices in the field and factory, and the installation of new and larger factory equipment now becoming procurable, will in future seasons enable more of the crop to be harvested and processed during the period when it is most profitable to do so.

As usual, the peak month for sucrose content of cane was September, when it was as high as 14.90 per cent. For May it was no more than 12.52 per cent.

The fibre content of cane for the crop was 15.90 per cent., a figure surpassed only in 1927, 1935, 1945 and 1946 in our records. The highest on record is 16.27 per cent. in 1927.

The fibre content was at its lowest in July, when it was 15.63 per cent., but there was very little difference between July, August and September in this respect. After September the fibre content of cane rapidly increased to an average of 16.41 per cent. for December, which is among the highest ever recorded for any month in this country. The absolute maximum in our records is 16.70 per cent. for June, 1927, closely followed by 16.69 for January, 1945, both of which also occurred during extremely dry weather.

Over the past 22 years the lowest monthly average fibre content of cane was in September with 15.37 per cent., and the highest in January with 15.97 per cent.

The purity of mixed juice did not follow the normal course of a steady increase to a peak value in October or September, but in 1948 the maximum purity was 86.59 for June, after which it decreased to 85.66 for August and then showed a rise to 86.22 for October and a rapid fall for December to 85.01. The average for the season was 85.92, close to the average for the preceding ten years of 86.09.

Taking the past 22 years into account, the best month for juice purity is October, 86.34, closely followed by September with 86.31, and January the lowest with 84.00.

The reducing sugar ratio of mixed juice of 3.67 for the season is the highest since 1940, when it was 3.81, and is appreciably higher than the average for the preceding ten years of 3.29.

Following the usual converse course of the purity of juice, it was at its lowest in June (3.28) instead of in October as usual, and increased greatly in December to 3.98.

The ratio of cane to sugar, which as stated above was no more than 8.55 for the season, followed the usual course to a minimum of 7.97 for September, corresponding to a yield of sugar on cane of 12.55 per cent. This ratio was lower in this country only in September of 1945, when it was 7.87.

Cane Varieties.

The proportion of the older varieties, Uba, Co.290, Co.281, continues to fall, as has been the case for the last few years, and there was also a fall in the percentage of P.O.J. canes this year. The newer released varieties Co.301 and Co.331 have increased further, and N:Co.310 has been milled in small quantities (approximately 3,650 tons) for the first time.

The changes over recent years are as follows:—

Variety.	1943-49.	1947-48.	1946-47.	1945-46.	1944-45.	1943-44
Uba...	0.72	1.53	1.91	2.83	4.25	6.50
Co.281 ...	56.94	58.69	63.25	67.77	66.49	64.40
Co.290 ...	0.98	1.54	2.65	4.36	7.23	11.23
Co.301 ...	36.06	33.11	28.16	21.09	18.07	14.06
Co.331 ...	2.54	1.66	0.65	0.60	0.13	0.05
N:Co.310 .	0.07	—	—	—	—	—
P.O.J. ...	2.69	3.46	3.37	3.34	3.83	3.76

"P.O.J." implies P.O.J.2725 with a small but variable content of P.O.J.2878.

The next table shows the proportions of cane varieties milled by months:—

Variety.	May 29, 1948.	June 26, 1948.	July 31, 1948.	Aug. 28, 1948.	Oct. 2, 1948.	Oct. 30, 1948.	Nov. 27, 1948.	Jan. 1, 1949.
Uba ..	0.83	1.53	0.80	0.79	0.67	0.44	0.42	0.38
Co.281 ..	65.75	65.37	60.90	54.70	54.43	53.45	53.57	51.04
Co.290 ..	0.90	0.56	0.89	0.78	1.21	1.16	1.14	1.29
Co.301 ..	31.35	31.15	33.90	38.08	37.29	37.77	38.06	40.58
Co.331 ..	0.91	1.01	1.94	3.17	3.14	3.95	3.17	2.20
N:Co.310 ..	—	—	—	—	0.02	0.06	0.11	0.37
P.O.J....	0.26	0.37	1.57	1.88	3.23	3.18	3.53	4.13

As usual, the percentage of P.O.J. canes increased as the season progressed. This is largely due to Umfolozi factory, which crushes the bulk of P.O.J. varieties and generally starts crushing late in the season and ends when many other factories have closed down; but even in the returns from the Central Board, which do not include Umfolozi, this tendency to crush P.O.J. canes late in the season is noticeable, and advantage is apparently taken of the good keeping qualities of the sucrose content of the P.O.J. canes by keeping them to supply the mills towards the end of the season during November to January. This, however, must adversely affect the average sucrose content of this variety compared with, say, Co.301, which is harvested largely during the peak months.

The following is a summary of the arithmetic averages of the sucrose per cent. cane of the different varieties tested by the Sugar Industry Central Board Services, and includes about 64 per cent. of the total crop.

Variety.	Per cent. of total cane.	Sucrose per cent. cane.
Uba ...	0.34	13.57
Co.281...	59.86	14.17
Co.290...	1.20	13.46
Co.301...	34.52	14.02
Co.331...	3.22	13.65
P.O.J....	0.77	14.26

Tests done on the very small proportion of N:Co.310 have been excluded as being too unrepresentative in judging the sucrose content of this variety.

The peak of sucrose content of cane was, as usual, in September in the case of each variety excepting N:Co.310 and P.O.J., where the quantities of cane harvested during some months were too small to be representative.

The following table gives the percentage varieties tested by the Central Board during the different periods:—

Variety.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan
Uba ..	0.24	0.47	0.50	0.28	0.42	0.17	0.23	0.22	0.75
Co.281 ..	69.95	69.70	62.65	55.74	55.76	54.68	57.35	55.90	72.56
Co.290 ..	1.05	0.69	1.04	0.98	1.47	1.49	1.31	1.69	0.37
Co.301 ..	27.30	27.44	32.80	38.38	37.20	33.18	35.45	37.39	23.42
Co.331 ..	1.14	1.15	2.62	3.94	3.92	4.61	4.45	3.28	0.71
N:Co.310 ..	—	0.01	0.01	0.01	0.02	0.08	0.23	0.43	0.79
P.O.J. ...	0.32	0.54	0.38	0.67	1.21	0.79	0.99	1.09	1.40

Tonga Sugar Co. Ltd. crushed 13.5 per cent. of the total crop and Natal Estates Ltd. 10.6 per cent., and as the sucrose results of neither of these two factories are included in Central Board returns, it may be of interest to tabulate the sucrose percentages of the more common varieties at these two centres:—

Variety.	Tonga Sugar Co. Ltd.		Natal Estates Ltd.	
	Per cent. of crop.	Sucrose per cent. cane.	Per cent. of crop.	Sucrose per cent. cane.
Uba....	0.85	13.54	3.20	13.46
Co.281 ...	44.50	14.17	50.06	13.76
Co.301 ...	52.64	13.96	44.28	13.44
Co.331 ...	1.49	13.81	1.89	13.22

General Factory Performance.

The number of factories in active operation remains at 20, of which 18, producing 99.1 per cent. of the total output, are represented in our detailed reports. The ratio of cane to all sugar produced, including the two small factories that do not supply detailed reports, is 8.58, instead of 8.55 which includes only those factories giving detailed returns. In the latter figure a certain amount of sugar which is made into syrup is accounted for, which is not the case with the former.

The identity of the symbols used in the detailed table of manufacturing results, with the factories represented and the former code numbers, are as follows:—

Name of Factory.	Owners.	Former code No.	Index reference for tables.
Mount Edgecombe	Natal Estates Ltd. ...	1	NE
Umfoloji	Umfoloji Cooperative Sugar Planters, Ltd. ...	2	UF
Entumeni	Entumeni Sugar Milling Co., Ltd....	3	EN
Gledhow	Gledhow - Chakas Kraal Sugar Co., Ltd. ...	4	GL
Maidstone	Tonga Sugar Co., Ltd. ...	5	TS
Empangeni	Zululand Sugar Millers & Planters, Ltd. ...	6	ZM
Illovo	Illovo Sugar Estates, Ltd.	8	IL
Doornkop	Doornkop Sugar Estates, Ltd....	9	DK
Felixton	Sir J. L. Hulett & Sons, Ltd.	10	FX
Sezela	Reynolds Bros., Ltd. ...	11	SZ
Darnall	Sir J. L. Hulett & Sons, Ltd.	12	DL
Amatikulu	Sir J. L. Hulett & Sons, Ltd.	14	AK
Renishaw	Crookes Bros., Ltd. ...	15	RN
New Guelderland	New Guelderland Sugar Factory ...	16	NG
Umzimkulu...	Umzimkulu Sugar Co., Ltd.	17	UK
Chaka's Kraal	Gledhow - Chaka's Kraal Sugar Co., Ltd. ...	18	CK
Melville	Melville Sugar Co., Ltd. ...	19	MV
Esperanza	Reynolds Bros., Ltd. ...	21	ES

During the 1948-49 season the average extraction was 93.32. This is slightly less than for the preceding season, when it was 93.44, but is higher than for any other year. The reduced extraction, based on an assumed fibre content of cane of 12.5 per cent., is 94.95, also slightly lower than for the corresponding ratio last year, but only surpassed by two other countries, as far as we are aware.

The average boiling-house recovery of 89.14 has been surpassed four times in the last five years, and

is no doubt partly associated with the lower average purity of juice, and partly with the lower proportion of the total crop harvested from July to November. The average reduced boiling-house recovery, based on an assumed purity of 85 in mixed juice, is 88.31.

For the same reasons the overall recovery of 83.19 is not quite up to those of 1943, 1945 and 1947, but is superior to those of all other years. The reduced overall recovery of 83.85 was surpassed only in 1947.

The overall recovery of course corresponds to a percentage of losses of sucrose in cane during manufacture of 16.81, and is only surpassed by a select few cane sugar manufacturing countries.

The purity of final molasses has been brought down to 41.53, which was only lower in 1947 in this country. It is in this respect, also in the moisture content of the bagasse, that there is still most room for improvement in South Africa.

Extraction reached its highest in July and August this season, fibre being lowest at this time, and boiling-house recovery and overall recovery also reached their peak in July, but, as stated above, the ratio of cane to sugar was at its best at the usual period of September.

The average imbibition was 34.06 per cent. of cane, which is slightly less than in recent years; two factories used more than 40 per cent., and three others less than 30.

Individual Factory Performance.

As in the previous season, Umzimkulu and Esperanza recorded the highest sucrose contents of cane, 14.80 and 14.77 per cent. respectively. Only one mill, Umfolozi, had less than 13 per cent. sucrose, drawing most of their cane supply from alluvial flats.

For the same reason, and also because a high percentage of P.O.J. canes is harvested, Umfolozi had as usual much the lowest fibre content of cane, 14.16 per cent. Amatikulu had a fibre content of cane of 17 per cent. to contend with.

Esperanza had the highest purity of mixed juice, 89.04, and the lowest reducing sugar ratio, 2.67, of those recording it.

Natal Estates, as last year, gained the highest extraction, 95.26, also the lowest extraction ratio, 29.66, and the lowest sucrose per cent. bagasse, 1.90.

New Guelderland also, as last year, gained the highest boiling-house recovery, 91.50, followed by Esperanza with 91.22.

Esperanza again had the highest overall recovery, 86.32, followed by New Guelderland with 85.67, and Umzimkulu with 85.33.

Umzimkulu gained a ratio of cane to sugar of 7.76 or 7.60 based on an assumed polarization of 96°, while Esperanza had 7.79, or 7.53 on the 96° basis.

The lowest sucrose per cent. cane lost in manufacture was gained by Umfolozi with 1.98.

The lowest moisture content of bagasse was gained by Umzimkulu with 44.34 per cent., followed by Doornkop with 46.60 per cent.

The lowest purity (apparent) of final molasses was gained by Doornkop with 37.51, followed by Sezela with 37.79. The lowest clerget purity of final molasses was gained by Gledhow with 38.10.

Esperanza has the lowest sucrose content of filter cake, 0.22 per cent., but Illovo has the lowest loss of sucrose in filter cake by a very slight margin, because of a lower weight of filter cake per cent. cane.

As was to be expected in view of the average decrease in extraction and recovery from the previous season, only a minority of factories showed increases in these figures.

Of the seven mills that improved their extraction over the 1947-48 season, Umfolozi with 0.64, Sezela and Renishaw each with 0.46, gained increases of over 0.4 units.

There were also seven factories that increased their boiling-house recovery, the following by more than 0.8 units: Umfolozi 1.47, Entumeni 1.42, Sezela 1.34 and Doornkop 0.81.

Of the eight factories that recorded improved overall recovery, Umfolozi 1.95, Sezela 1.67, and Doornkop 0.97 were outstanding.

This is the second successive season in which Sezela has recorded similar gains, having increased their overall recovery the previous season also, by 2.06 units.

Maidstone factory of the Tongaat Sugar Co. Ltd. has for the second successive season created a new South African record in output of sugar, having produced 84,925 tons of sugar from 704,743 tons of cane. This cane was crushed at the average rate of 159.33 tons per hour, also a South African record. This corresponds to crushing 24.58 tons of fibre per hour throughout the season and making 19.20 tons of sugar containing 18.89 tons of sucrose.

The Natal Estates factory at Mount Edgecombe made 63,870 tons of sugar from 554,540 tons of cane at an average crushing rate of 138.60 tons per hour on a single train of mills. This is equivalent to crushing 22.15 tons of fibre per hour throughout and making 15.97 tons of sugar containing 15.91 tons of sucrose.

Sir J. L. Hulett & Sons Ltd. made a total of 152,498 tons of sugar and crushed 1,350,224 tons of cane at their three factories, Darnall, Amatikulu and Felixton, thus producing 25.09 per cent. of the total output of sugar. Darnall factory crushed 560,494 tons of cane to make 61,844 tons of sugar.

Reynolds Bros. Ltd., at their two factories Sezela and Esperanza, made 57,742 tons of sugar from 468,635 tons of cane.

Zululand Sugar Millers and Planters Ltd., at their factory at Empangeni, made 51,814 tons of sugar from 435,523 tons of cane.

Each of these factories, and in fact every one of the 18 factories reporting to us, made considerably more than the previous season.

World Production.

The total estimated world production of sugar, according to Willett and Gray, is 32,430,985 long tons, of which 21,714,700 tons, or 67 per cent., consist of cane sugar.

This will be the largest world output of sugar on record and an increase of over 3,000,000 tons on the previous year.

The South African crop of 542,719 long tons is thus 2.50 per cent. of the cane sugar, or 1.67 per cent. of the total world sugar.

The Cuban crop is estimated to be 5,461,000 tons, somewhat less than in 1947-48, when it was nearly six million tons. Otherwise American production of cane sugar remains about the same.

Besides Brazil and India, which as usual have produced well over a million tons each, Puerto Rico also does so for the first time for several years. Russia is estimated to produce three million tons of beet sugar, and Germany over one million for the first time since the 1944-45 season.

Crops not far short of a million tons are estimated from Australia and Hawaii.

Estimated production from the British Commonwealth for 1947-48 is as follows:—

	Long tons.	Per cent. of total.
India and Pakistan	3,800,000*	43.7
	1,500,000†	17.2
Australia... ..	910,000	10.5
British West Indies	563,700	6.5
South Africa	542,719‡	6.2
Great Britain... ..	535,000§	6.1
Mauritius	368,000	4.2
British Guiana	180,000	2.1
Fiji	136,000	1.6
Ireland	80,000§	0.9
Canada	79,285§	0.9
	<hr/> 8,694,704	

* Gur.

† White sugar.

‡ Actual production, not estimated.

§ As refined beet sugar.

Although the sugar production of Java has increased threefold to 250,000 tons, it is still much below its pre-war output. Taiwan and the Philip-

piners are, however, well on their way towards pre-war production.

All European countries except Germany have now approached or exceeded their pre-war production of beet sugar, but the U.S.A. estimates a considerable falling-off in beet sugar production from the past two years.

Besides comparative average factory results from Mauritius, British Guiana, Hawaii, Queensland and Trinidad that we have been enabled to publish in recent years, we are very pleased to have now received the necessary data to enable us to reinclude Puerto Rico and India.

Sugar Production in South Africa in Recent Years.

Production of cane and sugar over the past 20 years is tabulated in tons of 2,000 lbs.

Season.	Cane crushed.	Inches of rainfall.	Sugar produced.	Ratio Cane/Sugar.
1929/30	3,005,663	48.34	298,635	10.06
1930/31	3,803,883	37.30	393,205	9.67
1931/32	3,130,783	29.33	325,899	9.61
1932/33	3,489,960	48.37	358,905	9.72
1933/34	3,673,375	31.15	391,173	9.39
1934/35	3,874,215	44.74	358,738	10.80
1935/36	3,867,536	45.83	417,289	9.27
1936/37	4,180,973	50.13	446,409	9.37
1937/38	3,489,022	39.57	507,219	8.85

Experiment Station,
South African Sugar Association,
Mount Edgecombe.
March, 1949.

	Cane crushed	Inches of rainfall	Sugar produced	Ratio Cane/Sugar
1938/39	4,658,962	40.33	522,732	8.91
1939/40	5,346,006	47.68	595,556	8.98
1940/41	5,309,227	43.48	572,880	9.72
1941/42	3,921,436	26.18	452,119	8.67
1942/43	4,704,430	49.40	524,975	8.96
1943/44	5,278,914	53.31	585,392	9.02
1944/45	5,351,945	36.45	614,158	8.71
1945/46	4,607,055	31.99	553,074	8.33
1946/47	3,990,017	32.02	474,769	8.36
1947/48	4,543,255	44.83	512,005	8.85
1948/49	5,216,144	35.25	607,845	8.58

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We have much pleasure also in acknowledging our obligations to the following sources of information concerning the sugar industries of their respective countries: The Experiment Station of the Hawaiian Sugar Planters' Association, the Bureau of Sugar Experiment Stations of the Queensland Department of Agriculture, the Sugar Manufacturers' Association of Trinidad, the Sugar Producers' Association of Puerto Rico, the Sugar Technologists' Association of India, the Joint Chemical Control, British Guiana, and the Sugar Industry Reserve Fund of Mauritius.

FINAL MANUFACTURING RESULTS, NATAL SUGAR FACTORIES, SEASON 1948/49.

FACTORY NUMBER	...	...	...	...	NE.	UF.	EN.	GL.	TS.	ZM.	IL.	DK.	FX	SZ.	DL.	AK.	RN.	NG.	UK.	CK.	MV.	ES.	SEASON
Crushing period	From	...	...	...	19.5.48	1.7.48	18.6.48	11.5.48	14.5.48	17.5.48	19.5.48	28.5.48	5.5.48	19.5.48	28.4.48	28.4.48	1.6.48	1.6.48	18.6.48	6.5.48	3.6.48	25.5.48	28.4.48
	To	...	...	...	11.12.48	1.2.49	16.11.48	22.12.48	1.1.49	14.1.49	4.12.48	9.12.48	8.1.49	21.12.48	30.12.48	11.1.49	23.12.48	26.11.48	8.12.48	30.12.48	28.12.48	1.12.48	1.2.49
Tons of 2,000 lbs. Cane crushed	...	...	...	...	554,540	351,004	40,998	315,633	704,743	435,523	173,431	99,943	394,770	288,249	560,494	394,960	160,172	116,521	86,148	183,450	125,709	180,386	5,166,674
Cane crushed—metric tons	...	...	...	...	503,078	318,430	37,193	286,342	639,343	395,106	157,337	90,668	358,135	261,499	508,480	358,308	145,308	105,708	78,153	166,426	114,043	163,646	4,687,201
Tons of 2,000 lbs. Sugar bagged and estimated	...	...	...	...	63,870	38,780	4,875	36,813	84,925	51,814	20,814	11,936	42,927	34,598	61,844	47,727	19,333	14,169	11,102	21,202	14,206	23,144	604,079
Sugar bagged and estimated—metric tons	...	...	...	...	57,943	35,181	4,423	33,397	77,044	47,006	18,882	10,827	38,943	31,387	56,105	43,298	17,539	12,854	10,072	19,234	12,888	20,996	548,019
Tons Cane per ton of Sugar	...	...	...	...	8.68	9.05	8.41	8.57	8.30	8.40	8.33	8.37	9.20	8.33	9.06	8.28	8.28	8.22	7.76	8.65	8.85	7.79	8.55
Tons Cane per ton of Sugar calculated as Sugar of 96° Pol	...	...	...	...	8.37	8.84	8.11	8.29	8.10	8.22	8.33	8.09	8.86	8.04	8.79	8.05	8.01	8.02	7.60	8.38	8.57	7.53	8.31
Time Crushing per cent. Available Time (no allowance for cane shortage)	...	...	...	...	96.81	85.98	88.31	97.74	93.18	94.87	86.68	92.18	95.18	84.09	94.62	94.38	90.89	95.13	94.54	93.17	91.26	97.81	93.19
Tons of 2,000 lbs. of Cane per hour Actual Crushing	...	...	...	...	138.60	93.42	16.11	70.33	159.33	93.92	51.08	28.20	81.48	82.33	118.62	79.57	43.67	33.89	26.58	40.94	32.60	48.46	93.83
Tons of 2,000 lbs. White Sugar made	...	...	...	...	53,543	4,956	3,635	24,663	—	—	19,352	8,935	40,145	24,459	28,328	9,627	12,526	—	28	7,101	7,474	16,762	261,534
Tons of 2,000 lbs. No. 2 Grade Sugar made	...	...	...	...	10,327	10,597	1,240	11,149	7,661	45,170	46	2,700	175	10,139	430	18,775	6,339	5,707	4,343	13,891	4,773	6,382	159,844
Tons of 2,000 lbs. Raw Sugar made	...	...	...	...	—	23,227	—	1,001	77,264	6,644	—	299	2,607	—	33,086	19,325	469	8,462	6,731	—	1,959	—	181,074
Sucrose per cent. Cane	...	...	...	...	13.60	12.83	14.55	13.86	14.04	14.36	13.60	14.13	13.28	14.16	13.83	14.08	14.32	13.97	14.80	13.97	14.09	14.77	13.89
Fibre per cent. Cane	...	...	...	...	15.98	14.16	16.61	15.98	15.43	16.55	16.65	14.95	16.46	15.39	16.23	17.00	15.60	15.97	15.56	15.32	15.95	15.84	15.90
Java Ratio	...	...	...	...	77.48	76.10	75.79	76.61	76.91	77.71	76.90	78.23	76.40	78.46	75.51	76.38	77.45	77.97	78.64	77.76	77.54	77.86	76.98
*Extraction Ratio	...	...	...	...	29.66	40.96	57.31	49.12	43.16	44.77	31.35	41.87	41.56	40.42	54.84	37.47	35.83	39.82	37.66	48.69	52.29	33.90	42.01
Imbibition per cent. Cane	...	...	...	...	38.83	32.44	39.47	31.56	26.22	34.24	42.03	34.86	36.39	36.40	36.53	35.89	29.70	34.60	40.44	30.91	27.59	35.50	34.06
Extraction (Sucrose in Mixed Juice % Sucrose in Cane)	...	...	...	...	95.26	94.20	90.48	92.15	93.34	92.59	94.78	93.74	93.16	93.78	91.10	93.63	94.41	93.63	94.14	92.54	91.66	94.63	93.32
Sucrose per cent. Bagasse	...	...	...	...	1.90	2.38	3.87	3.07	2.72	2.92	2.09	2.94	2.51	2.67	3.25	2.42	2.43	2.73	2.89	3.14	3.36	2.43	2.67
Moisture per cent. Bagasse	...	...	...	...	50.20	51.01	48.64	50.82	51.57	50.66	48.00	46.60	51.12	49.56	52.95	50.98	49.38	49.21	44.34	49.81	49.93	48.20	50.53
Sucrose per cent. Cane lost in manufacture	...	...	...	...	2.12	1.98	2.72	2.29	2.18	2.68	2.08	2.26	2.45	2.22	2.90	2.15	2.34	2.00	2.17	2.51	2.89	2.02	2.33
Overall Recovery (Sucrose in Sugar % Sucrose in Cane)	...	...	...	...	84.88	84.59	81.34	83.53	84.43	81.37	84.71	83.98	81.55	84.36	79.03	84.70	83.65	85.67	85.33	82.00	79.44	86.32	83.19
Recovery on Mixed Juice (Sucrose in Sugar % Sucrose in Mixed Juice)	...	...	...	...	88.58	89.81	89.90	90.65	90.46	87.88	89.37	89.59	87.54	89.95	86.74	90.46	88.60	91.50	90.64	88.61	86.67	91.22	89.14
Sucrose in Bagasse per cent. Sucrose in Cane (A)	...	...	...	...	4.74	5.80	9.52	7.85	6.66	7.41	5.22	6.26	6.84	6.22	8.90	6.37	5.59	6.36	5.86	7.46	8.34	5.37	6.68
Sucrose in Filter Cake per cent. Sucrose in Cane (B)	...	...	...	...	0.49	0.24	1.03	0.22	0.15	0.30	0.09	0.29	0.10	—	0.80	0.23	0.16	0.23	1.01	1.14	0.53	0.08	0.36
Sucrose in Molasses per cent. Sucrose in Cane (C)	...	...	...	...	8.07	8.93	—	7.13	—	9.13	9.26	7.03	10.48	—	9.76	8.03	—	6.68	—	8.32	7.50	6.26	—
Undetermined Sucrose per cent. Sucrose in Cane (D)	...	...	...	...	2.32	0.44	8.11	1.27	8.76	1.79	0.72	2.44	1.03	9.42	1.51	0.67	10.60	1.05	7.80	1.08	4.19	1.97	9.77
Sucrose lost in Boiling House per cent. Sucrose in Cane (B)+(C)+(D)	...	...	...	...	10.88	9.61	9.14	8.62	8.91	11.22	10.07	9.76	11.61	9.42	12.07	8.93	10.76	7.96	8.81	10.54	12.22	8.31	10.13
Sucrose in total Losses per cent. Sucrose in Cane (A)+(B)+(C)+(D)	...	...	...	...	15.62	15.41	18.66	16.47	15.57	18.63	15.29	16.02	18.45	15.64	20.97	15.30	16.35	14.33	14.67	18.00	20.56	13.68	16.81
FIRST EXPRESSED JUICE.																							
Brix	...	...	...	...	20.33	19.50	21.08	20.57	20.79	20.83	20.30	20.29	19.86	20.29	20.76	20.68	20.84	20.20	21.10	20.25	20.62	20.85	20.47
Purity (apparent)	...	...	...	...	86.31	87.36	91.08	87.90	87.80	88.70	87.09	89.00	87.50	88.90	88.20	89.10	88.72	88.73	89.20	88.71	88.10	91.00	88.12
LAST EXPRESSED JUICE.																							
Brix	...	...	...	...	2.15	1.68	2.72	4.48	3.55	3.33	2.48	3.00	3.23	2.15	4.32	3.11	3.47	3.66	3.20	3.54	4.32	3.42	3.21
Purity (apparent)	...	...	...	...	74.11	63.70	82.71	76.60	77.60	76.80	75.00	80.00	73.90	73.23	78.60	76.60	77.20	72.06	76.20	81.84	76.60	75.10	75.54
Purity drop from First Expressed Juice	...	...	...	...	12.20	23.66	8.37	11.30	10.20	11.90	12.09	9.00	13.60	15.67	9.60	12.50	11.52	16.67	13.00	6.87	11.50	15.90	12.58
MIXED JUICE.																							
Brix	...	...	...	...	14.54	14.38	14.28	15.37	16.51	15.71	14.16	14.57	14.62	14.87	14.83	15.40	16.25	14.89	14.50	15.09	16.14	15.26	15.20
Purity (Clerget)	...	...	...	...	84.88	83.08	88.71	86.40	86.40	86.50	84.11	86.80	84.50	86.25	86.04	86.64	85.96	86.15	87.00	87.58	86.40	89.04	85.92
Reducing Sugar Ratio	...	...	...	...	3.91	3.69	3.48	3.26	—	3.78	3.88	—	4.10	3.47	3.66	3.77	—	2.78	—	—	4.20	2.67	3.67
Purity drop from First Expressed Juice	...	...	...	...	1.43	4.28	2.37	1.50	1.40	2.20	2.98	2.20	3.00	2.65	2.16	2.46	2.76	2.58	2.20	1.13	1.70	1.96	2.20

CLARIFIED JUICE.

Brix ...	12.18	14.36	15.86	16.20	15.25	16.60	14.49	16.20	14.39	14.96	15.20	15.03	16.80	14.88	—	15.48	17.97	14.83	15.02
Purity (apparent) ...	90.39	86.07	90.17	87.30	87.90	87.00	85.99	88.80	85.70	86.92	86.74	87.10	87.10	87.25	—	88.34	86.40	89.56	87.48
Reducing Sugar Ratio ...	2.06	3.07	3.08	—	—	3.17	3.41	—	3.94	—	3.70	3.40	—	2.34	—	—	3.30	2.12	3.11
pH ...	7.19	7.28	6.79	6.97	7.50	7.49	—	—	6.99	7.20	7.00	7.10	—	7.45	7.40	—	—	7.21	7.22

FILTER CAKE.

Per cent. Sucrose ...	0.50	0.59	2.96	0.59	0.47	0.75	0.30	0.82	0.36	0.44	1.77	0.59	0.45	0.65	4.90	5.28	1.50	0.22	0.94
Weight per cent. Cane ...	13.19	5.14	5.14	5.12	4.98	5.78	3.99	4.96	3.91	—	6.21	5.51	5.12	5.00	3.01	3.00	5.00	5.48	5.90

SYRUP.

Brix ...	58.55	61.12	57.59	54.29	49.65	43.02	59.12	53.00	54.36	54.73	54.83	54.65	57.27	50.22	—	50.66	49.21	57.38	53.75
Purity (apparent) ...	90.52	86.17	89.62	87.40	87.90	86.60	85.82	89.00	85.70	87.36	87.21	87.20	86.69	87.27	—	88.54	86.30	89.50	87.54
Reducing Sugar Ratio ...	1.94	2.94	3.24	3.06	—	3.24	3.00	—	3.94	—	3.82	3.37	—	2.27	—	—	3.40	1.73	3.07
pH ...	7.18	6.92	6.56	6.87	—	7.05	—	—	6.79	6.91	6.80	6.90	—	7.18	—	—	—	7.06	6.95
Purity drop from First Expressed Juice ...	-4.21	1.19	1.46	0.50	-0.10	2.10	1.27	0.00	1.80	1.54	0.99	1.90	2.03	1.46	—	0.17	1.80	1.50	0.56
Purity increase from Mixed Juice ...	5.64	3.09	0.91	1.00	1.50	0.10	1.71	2.20	1.20	1.11	1.17	0.56	0.73	1.12	—	0.96	-0.10	0.46	1.64

FIRST MASSECUITE.

Brix ...	91.51	92.51	91.39	92.66	91.57	93.98	92.27	91.40	93.97	93.44	92.91	91.80	94.28	91.68	91.21	92.94	92.68	92.02	92.54
Purity (apparent) ...	91.18	85.86	87.11	87.50	87.50	84.30	84.58	86.50	84.20	83.50	83.83	82.50	84.60	86.62	81.10	85.10	85.30	84.82	85.69
Purity of Run-off ...	77.90	65.20	70.01	66.10	73.30	59.70	62.61	68.60	63.60	64.01	62.92	63.60	63.90	69.95	60.12	68.99	67.40	66.56	66.94
Cubic feet per ton of Sugar (all Masseccutes) ...	67.05	61.28	54.55	47.36	—	49.58	—	61.90	60.05	51.46	48.16	52.32	50.05	49.33	—	49.35	55.20	—	54.60

SECOND MASSECUITE.

Brix ...	94.53	93.48	93.75	96.32	95.18	97.02	93.93	94.40	97.26	96.30	96.87	94.20	97.27	96.22	93.06	94.15	95.70	95.51	95.52
Purity (apparent) ...	78.35	74.67	76.96	69.20	75.80	72.70	77.31	75.40	71.50	67.91	69.69	72.70	70.20	70.56	70.20	65.50	69.90	71.54	72.67
Purity of Run-off ...	56.40	50.71	54.68	44.20	53.80	49.40	54.00	50.50	45.70	43.69	44.92	50.00	46.00	46.47	48.30	49.19	46.80	48.07	49.39

THIRD MASSECUITE.

Brix ...	99.17	97.76	94.16	96.71	98.68	97.98	94.29	98.20	98.27	96.99	—	95.70	98.63	97.46	94.61	—	98.06	98.70	97.69
Purity (apparent) ...	68.38	61.44	66.18	57.10	63.00	64.60	66.96	61.40	60.00	62.69	—	61.90	59.10	58.62	60.11	—	56.70	59.13	62.40
Purity of Run-off ...	44.00	42.23	45.55	38.10	40.30	43.50	45.64	37.51	41.00	37.79	—	42.00	39.00	39.12	39.93	—	39.50	38.29	41.13

JELLY.

Brix ...	—	—	—	—	—	96.02	89.27	—	97.32	95.26	93.33	90.60	—	—	—	90.64	—	92.90	93.7₀
Purity (apparent) ...	—	—	—	—	—	47.70	46.21	—	44.30	42.94	45.26	46.30	—	—	—	51.76	—	41.56	45.6₉

FINAL MOLASSES.

Brix ...	86.23	01.31	85.89	84.35	93.15	91.39	87.70	90.00	91.72	90.79	87.64	87.91	91.81	89.05	85.28	86.88	86.40	86.59	89.17
Purity (Clerget) ...	44.85	42.23*	45.55†	38.10	40.30†	43.50	43.13	37.51†	41.70	37.79†	44.00	41.98	39.39	39.40	39.93†	41.41†	39.50	38.29†	41.53
Weight per cent. Cane at 85.0° Brix ...	2.88	3.19	2.84	3.05	—	3.41	3.43	3.12	—	—	3.61	3.18	—	2.79	—	3.30	3.15	2.83	3.20

POLARIZATION OF SUGARS.

White Sugar ...	99.90	99.67	99.77	99.85	—	—	—	99.75	99.69	99.80	99.53	99.68	99.80	—	99.40	99.81	99.71	99.73	99.76
No 2 Grade Sugar ...	98.15	98.14	98.72	98.01	98.45	98.23	—	98.35	98.44	98.73	98.54	98.39	98.25	98.21	98.10	98.35	98.40	98.42	98.29
Raw Sugar ...	—	97.98	—	98.01	98.38	98.01	—	97.82	98.52	—	98.61	98.54	98.29	98.61	97.88	—	98.22	—	98.36
Average of all Sugars ...	99.62	98.24	99.51	99.24	98.39	98.20	—	99.39	99.61	99.49	99.03	98.72	99.25	98.45	99.97	99.09	99.06	99.37	98.93
SO ₂ in parts per million ...	—	104	—	66	—	68	—	—	—	39	51	84	—	57	—	—	—	39	—

VARIETIES CRUSHED.

Uba per cent. ...	2.90	0.30	—	0.28	0.85	0.25	0.15	—	0.04	0.35	0.41	0.08	2.23	0.73	0.14	0.41	1.62	0.49	0.72
Co.281 per cent. ...	47.80	56.53	93.49	34.15	44.50	85.07	53.94	30.39	67.12	59.10	53.65	67.69	68.04	38.66	98.03	51.86	44.18	73.04	56.94
Co.290 per cent. ...	—	1.25	—	1.79	0.43	0.59	0.82	0.07	2.58	1.12	1.58	0.49	1.75	1.28	0.75	1.40	0.66	0.63	0.98
Co.301 per cent. ...	47.10	9.90	1.33	59.81	52.64	11.91	44.05	56.37	19.63	36.28	41.81	26.54	26.89	56.56	0.99	43.23	52.14	25.50	36.06
Co.331 per cent. ...	1.80	0.72	5.17	2.05	1.49	0.52	0.48	13.17	7.17	3.14	2.49	5.17	0.48	2.78	—	2.96	1.40	0.24	2.54
N:Co.310 per cent. ...	—	0.01	0.01	0.37	—	0.12	0.03	—	0.28	—	0.02	0.01	0.26	—	—	0.07	—	—	0.07
P.O.J.2725 per cent. ...	0.40	31.29	—	1.55	0.09	1.54	0.53	—	3.17	0.01	0.04	0.02	0.35	—	0.09	0.07	—	0.10	2.69

FACTORY NUMBER ...	NE.	UF.	EN.	GL.	TS.	ZM.	IL.	DK.	FX.	SZ.	DL.	AK.	RN.	NG.	UK.	CK.	MV.	ES.	SEASON
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* Sucrose from reducing sugar determination before and after inversion.

† Apparent purity.

COMPARATIVE RESULTS FOR RECENT YEARS.

COUNTRY	NATAL										
YEAR	1938.	1939.	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.
CANE—											
Per cent. Sucrose	13.64	13.41	13.19	14.00	13.40	13.14	13.67	14.28	14.21	13.32	13.89
Per cent. Fibre	14.51	14.80	15.56	15.66	15.24	15.26	15.83	15.99	16.21	15.80	15.90
JUICES—											
Purity of First Crusher	88.37	88.45	87.44	87.94	88.27	88.70	88.35	88.36	88.22	88.48	88.12
Purity of Mixed Juice	86.36	86.46	85.34	85.67	85.96	86.56	86.19	86.23	85.86	86.24	85.92
Purity of last Roller Juice	76.86	77.07	76.15	77.46	76.86	76.44	75.75	75.94	75.14	75.03	75.54
Purity of Syrup	88.22	88.12	87.11	87.69	87.85	88.12	87.81	87.82	87.44	87.98	87.54
Drop in purity Crusher to Mixed Juice.. .. .	2.01	1.99	2.10	2.27	2.31	2.14	2.16	2.13	2.36	2.24	2.20
Drop in purity Crusher to last Roller	11.51	11.38	11.29	10.48	11.41	12.26	12.60	12.42	13.08	13.45	12.58
Drop in purity Crusher to Syrup	0.15	0.33	0.33	0.25	0.42	0.57	0.52	0.52	0.75	0.47	0.56
Increase in purity Mixed Juice to Syrup	1.86	1.66	1.77	2.02	1.89	1.57	1.63	1.61	1.60	1.75	1.64
Reducing Sugar Ratio of Mixed Juice	3.08	3.27	3.81	3.35	3.07	3.18	3.49	3.38	3.30	2.95	3.67
JAVA RATIO	78.87	78.70	77.94	77.74	77.67	77.78	77.38	77.36	77.03	76.99	76.98
BAGASSE—											
Per cent. Sucrose	3.30	3.11	3.02	3.03	2.88	2.76	2.73	2.77	2.79	2.54	2.67
Per cent. Moisture	52.17	51.79	51.60	51.50	51.24	50.80	50.23	50.19	50.32	50.46	50.53
EXTRACTION—											
Imbibition % Cane	31.70	31.28	32.59	34.76	32.82	31.62	33.70	34.96	35.25	34.37	34.06
Sucrose in Mixed Juice % Sucrose in Cane	91.90	92.24	91.91	92.37	92.69	92.97	93.13	93.28	93.07	93.94	93.32
Reduced Extraction (based on 12.5% Fibre)	93.18	93.62	93.72	94.13	94.19	94.42	94.78	94.96	94.88	95.01	94.95
FILTER CAKE—											
Per cent. Sucrose (Arithmetic average)	2.63	2.19	2.03	1.71	1.19	1.11	1.17	1.13	0.96	1.06	1.29
Weight % Cane	4.74	4.78	5.12	5.63	5.38	5.11	5.22	5.64	5.91	5.99	5.90
FINAL MOLASSES—											
Purity	43.12	42.67	42.91	43.45	43.24	41.81	42.37	41.98	41.75	41.10	41.53
RECOVERY—											
Sucrose % Cane lost in manufacture	2.55	2.42	2.52	2.57	2.34	2.16	2.30	2.42	2.42	2.16	2.33
Sucrose in Sugar % Sucrose in Cane	81.31	81.98	80.86	81.66	82.48	83.52	83.14	83.30	82.94	83.73	83.19
Reduced Overall Recovery (12.5% Fibre, 85° pur. Mixed Juice)	81.16	81.89	82.07	82.61	82.98	83.51	83.58	83.72	83.82	84.09	83.85
Sucrose in Sugar % Sucrose in Mixed Juice	88.48	88.88	87.98	88.40	88.98	89.84	89.27	89.29	89.12	89.61	89.14
Reduced Boiling House Recovery (based on 85° pur. Mxd. Juice)	87.10	87.47	87.57	87.76	88.10	88.45	88.18	88.16	88.34	88.51	88.31
YIELD—											
Tons Cane per ton Sugar	8.89	8.95	9.26	8.62	8.93	8.98	8.67	8.29	8.36	8.84	8.55
Tons Cane per ton Sugar of 96° Pol.	8.66	8.73	9.03	8.39	8.69	8.74	8.44	8.08	8.14	8.60	8.31
LOSSES—											
Sucrose in Bagasse % Sucrose in Cane (A)	8.10	7.76	8.09	7.63	7.31	7.03	6.87	6.72	6.93	6.56	6.68
Sucrose in Filter Cake % Sucrose in Cane (B)	0.91	0.78	0.60	0.52	0.41	0.36	0.37	0.35	0.28	0.32	0.36
Sucrose in Molasses % Sucrose in Cane (C)	—	—	—	—	—	—	—	—	—	—	—
Undetermined Sucrose % Sucrose in Cane (D)	9.68	9.48	10.43	10.18	9.80	9.09	9.62	9.63	9.85	9.39	9.77
Sucrose lost in Boiling House % Sucrose in Cane (B) + (C) + (D)	10.59	10.26	11.03	10.70	10.21	9.45	9.99	9.98	10.13	9.71	10.13
Sucrose in Total Losses % Sucrose in Cane (A) + (B) + (C) + (D)	18.69	18.02	19.12	18.34	17.52	16.48	16.86	16.70	17.06	16.27	16.81
SUGAR—											
Average Polarization of all Sugars	98.60	98.36	98.44	98.58	98.65	98.59	98.62	98.73	98.70	98.83	98.93

COMPARATIVE RESULTS FOR RECENT YEARS.

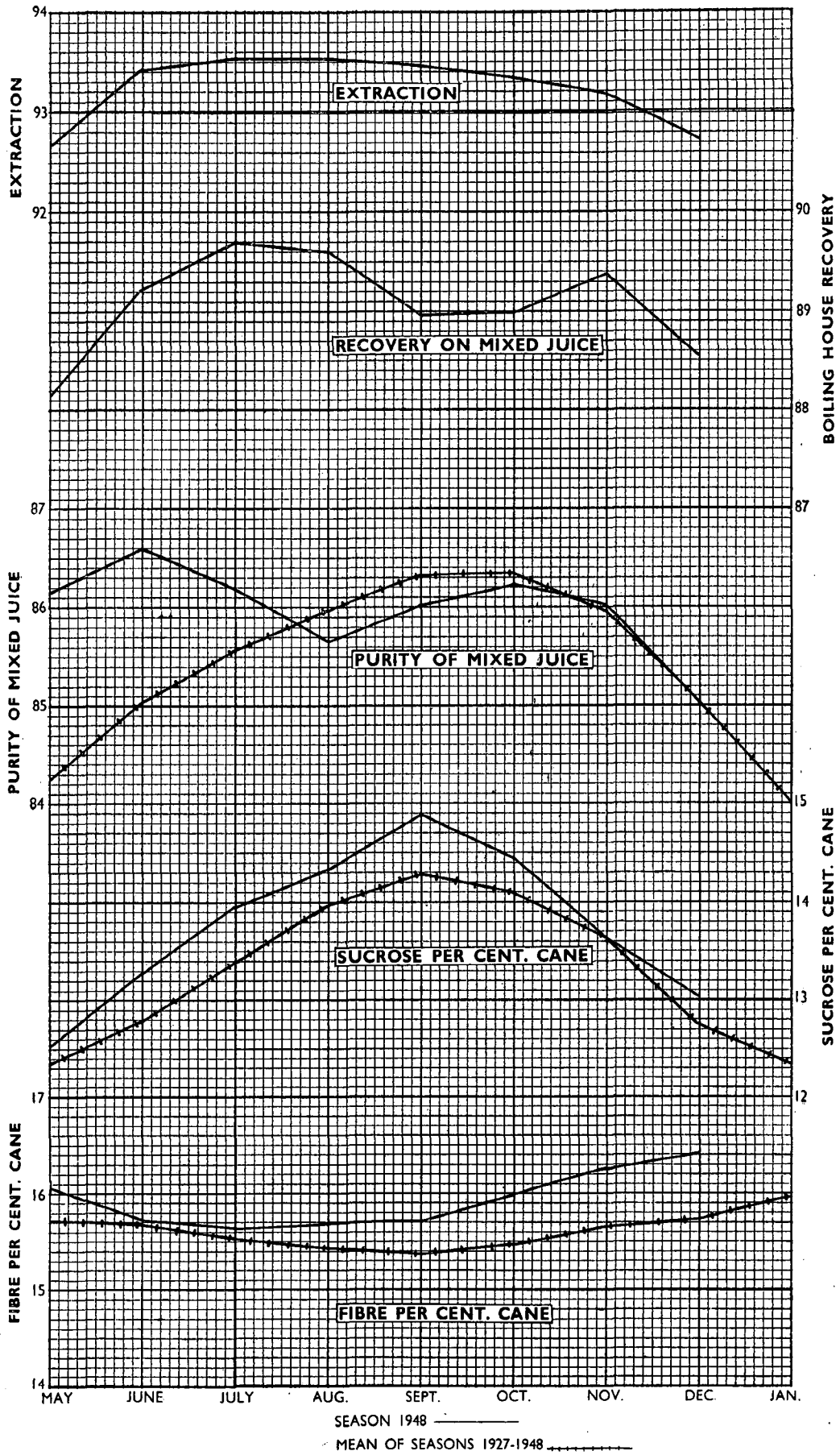
COUNTRY	MAURITIUS		BRITISH GUIANA		HAWAII		QUEENSLAND		TRINIDAD		PUERTO RICO	INDIA	
	YEAR	1946.	1947.	1946.	1947.	1946.	1947.	1946.	1947.	1946.	1947.	1947.	1947-48.
CANE—													
Per cent. Sucrose	13.56	14.37	11.45	11.24	12.59	12.22	14.91	15.30	12.44	12.11	13.09	12.48	
Per cent. Fibre	12.58	12.50	14.38	14.44	14.76	15.09	11.83	12.72	14.80	15.20	13.89	16.29	
JUICES—													
Purity of First Crusher	88.00	89.70	82.58	81.42	86.50	85.66	84.71	88.81	84.37	83.07	84.09	81.11	
Purity of Mixed Juice	85.20	87.00	80.69	79.40	83.67	82.89	—	—	82.29	81.01	—	—	
Purity of last Roller Juice	73.60	75.50	—	—	71.67	71.71	74.15	75.57	73.03	72.36	—	—	
Purity of Syrup	85.50	87.10	81.41	79.83	84.57	83.78	83.58	87.61	84.56	83.98	82.92	—	
Drop in purity Crusher to Mixed Juice..	2.80	2.70	1.89	2.02	2.83	2.77	—	—	2.08	2.06	—	—	
Drop in purity Crusher to last Roller ..	14.40	14.20	—	—	14.83	13.95	10.56	13.24	11.34	10.71	—	—	
Drop in purity Crusher to Syrup	2.50	2.60	1.17	1.59	1.93	1.88	1.13	1.20	-0.19	-0.91	1.17	—	
Increase in purity Mixed Juice to Syrup ..	0.30	0.10	0.72	0.43	0.90	0.89	—	—	2.27	2.97	—	—	
Reducing Sugar Ratio of Mixed Juice ..	4.10	3.40	—	—	—	—	—	—	8.24	9.03	—	—	
JAVA RATIO	79.72	79.61	78.69	78.66	—	—	83.53	82.23	77.40	76.79	—	—	
BAGASSE—													
Per cent. Sucrose	2.82	2.96	3.29	3.29	2.03	2.15	2.78	2.43	2.49	2.52	2.65	—	
Per cent. Moisture	44.80	44.90	46.34	46.20	42.80	43.66	50.15	48.49	48.15	48.12	48.66	—	
EXTRACTION—													
Imbibition % Cane.. .. .	21.60	22.90	23.07	22.39	35.37	34.08	—	—	23.97	21.96	25.47	22.07	
Sucrose in Mixed Juice % Sucrose in Cane ..	94.90	94.90	91.62	91.45	96.38	95.94	95.31	95.86	93.87	93.47	94.07	91.51	
Reduced Extraction (based on 12.5% Fibre) ..	94.90	94.90	92.87	92.76	97.01	96.74	94.93	95.90	94.96	94.80	94.75	93.66	
FILTER CAKE—													
Per cent. Sucrose	8.10	8.60	5.48	4.98	1.48	1.54	3.38	2.96	1.99	1.98	2.37	—	
Weight % Cane	1.61	1.58	2.03	2.04	5.98	6.00	3.55	3.31	2.63	2.65	3.97	—	
FINAL MOLASSES—													
Purity	39.20	39.10	32.77	33.10	39.83†	39.14†	46.42	47.67	31.59	31.38	30.99	33.68	
RECOVERY—													
Sucrose % Cane lost in manufacture	2.21	2.11	2.36	2.51	1.83	1.79	2.60	2.39	1.78	1.98	1.94	2.45	
Sucrose in Sugar % Sucrose in Cane	83.70	85.30	79.35	77.68	85.49	85.33	82.57	84.37	85.67	83.68	85.19	80.40	
Reduced Overall Recovery (12.5% Fibre, 85° pur. Mixed Juice)	83.51	83.42	83.71	83.26	87.09	87.59	—	—	88.15	87.33	—	84.96	
Sucrose in Sugar % Sucrose in Mixed Juice ..	88.20	89.80	86.63	84.95	88.69	88.94	86.67	88.00	91.26	89.53	90.56	87.85	
Reduced Boiling House Recovery (based on 85° pur. Mxd. Juice)	88.00	87.90	90.14	89.76	89.77	90.54	—	—	92.83	92.12	—	90.71	
YIELD—													
Tons Cane per ton Sugar	8.67	8.03	10.61	11.04	9.06	9.35	8.02	7.65	9.09	9.56	8.70	—	
Tons Cane per ton Sugar of 96° Pol.	8.46	7.83	10.56	10.99	8.92	9.21	7.80	7.44	9.01	9.47	8.61	9.57	
LOSSES—													
Sucrose in Bagasse % Sucrose in Cane (A) ..	5.10	5.10	8.38	8.55	3.62	4.06	4.69	4.14	6.13	6.53	5.93	8.49	
Sucrose in Filter Cake % Sucrose in Cane (B)..	0.96	0.95	0.97	0.89	0.70	0.76	0.68	0.53	0.42	0.43	0.72	0.83	
Sucrose in Molasses % Sucrose in Cane (C) ..	—	—	8.39	9.22	9.44	9.71	8.93	6.80	—	—	7.46	9.31	
Undetermined Sucrose % Sucrose in Cane (D)..	10.24	8.65	2.91	3.66	0.75	0.14	3.13	4.16	7.78	9.36	0.70	0.97	
Sucrose lost in Boiling House % Sucrose in Cane (B)+(C)+(D)	11.20	9.60	12.27	13.77	10.89	10.61	12.74	11.49	8.20	9.79	8.88	11.11	
Sucrose in Total Losses % Sucrose in Cane (A)+(B)+(C)+(D)	16.30	14.70	20.65	22.32	14.51	14.67	17.43	15.63	14.33	16.32	14.81	19.60	
SUGAR—													
Average Polarization of all Sugars	98.40	98.50	96.44	96.41	97.53	97.51	98.72	98.75	96.81	96.88	97.02	—	

† Refractometer sucrose Purity

Average Manufacturing Results by periods for Natal Sugar Factories Reporting to the Experiment Station, Season 1948/49.

Period ending	MAY 29, 1948.	JUNE 26, 1948.	JULY 31, 1948.	AUG. 28, 1948.	OCT. 2, 1948.	OCT. 30, 1948.	NOV. 27, 1948.	JAN. 1, 1949.	SEASON 1948-49.
Tons of 2,000 lbs. Cane crushed	296,772	588,682	842,367	680,141	843,228	641,720	634,249	544,687	5,166,674
Tons of 2,000 lbs. Sugar bagged and estimated	30,708	65,801	99,677	82,595	105,753	77,826	72,766	59,018	604,079
Tons Cane per ton Sugar	9.66	8.94	8.45	8.23	7.97	8.25	8.72	9.23	8.55
Tons Cane per ton of Sugar, calculated as sugar of 96° Pol.	9.38	8.68	8.20	8.00	7.74	8.01	8.47	8.97	8.31
Sucrose per cent. Cane	12.52	13.27	13.95	14.32	14.90	14.43	13.62	13.03	13.89
Fibre per cent. Cane	16.06	15.72	15.63	15.70	15.71	15.99	16.25	16.41	15.90
Java Ratio	77.44	77.63	77.59	77.44	77.34	76.96	76.08	75.33	76.98
Sucrose per cent. Bagasse	2.57	2.56	2.67	2.72	2.85	2.76	2.64	2.62	2.67
Moisture per cent. Bagasse	51.54	50.49	50.32	50.33	50.26	50.41	50.67	51.10	50.53
Imbibition per cent. Cane	35.63	34.18	33.91	34.25	34.16	34.13	34.20	32.65	34.06
Extraction	92.69	93.43	93.53	93.53	93.47	93.34	93.18	92.72	93.32
Recovery on Mixed Juice	88.15	89.23	89.69	89.60	88.97	88.99	89.37	88.55	89.14
Overall Recovery	81.70	83.37	83.89	83.80	83.16	83.07	83.28	82.10	83.19
Purity of Mixed Juice	86.15	86.59	86.19	85.66	86.01	86.22	86.00	85.01	85.92
Reducing Sugar Ratio	3.55	3.28	3.48	3.81	3.67	3.51	3.53	3.98	3.67
Purity of Syrup	87.55	88.05	87.83	87.20	87.49	87.81	87.82	86.54	87.54
Sucrose in Filter Cake (A)	1.06	0.88	1.28	1.22	1.07	1.35	1.35	1.16	1.29
Purity of Final Molasses	40.22	40.80	41.14	41.22	41.68	42.05	42.05	41.91	41.53
Average Polarization of Sugar	98.84	98.98	98.88	98.77	98.81	98.82	98.84	98.76	98.93

(A) Arithmetic averages.



EXTRACTION AND RECOVERY FIGURES 1937—48

