

ANNUAL SUMMARY OF AGRICULTURAL DATA FOR THE SUGARCANE CROP, 1955-56

By J. L. DU TOIT

Once again this report is based mainly on the *Special Census of Sugarcane Plantations, 1955-56* compiled by the Government Department of Census. Valuable information obtained from *Survey of Cane Production* by the Sugar Industry Central Board is also included. Other data are obtained from the Annual Summary of Laboratory Reports by Mr. G. M. Perk, monthly and annual weather reports by the Experiment Station and returns made to the Experiment Station by the Fertilizer Traders' Association on the amount of fertilizer used in the Industry.

RAINFALL AND YIELD

The rainfall for the year ended 31st May, 1955, was 47.24 inches, compared with a mean of 37.89 inches. The Industry, therefore, had a rainfall of practically 10 inches above normal. There were in fact, for the first time in ten years, two successive years with rainfalls above average. There were alternating dry and wet spells, but the last serious drought experienced was ended during August, 1953. Since then good, and on the whole, well distributed rains have fallen, with exceptionally heavy rains during October, 1954. The crop benefited greatly from these favourable weather conditions and the average yield recorded for the 1955-56 season was 34.27 tons cane per acre, which is for the second year running an all-time record yield for the Industry.

The following table gives the average yield over the past 16 years, as well as the average rainfall—

TABLE I

Year	Yield in Tons Cane per Acre	Rainfall in Inches
1942	25.49	34.09
1943	30.87	48.94
1944	29.08	38.60
1945	25.70	41.10
1946	21.99	27.06
1947	24.47	34.15
1948	26.80	39.25
1949	24.70	31.45
1950	26.41	38.92
1951	23.28	25.42
1952	26.29	36.40
1953	28.75	33.88
1954	32.53	39.08
1955	34.27	47.24
1956	31.29*	38.33
1957	33.97†	48.88

* From Central Board data

† Central Board estimate

Yields given here are taken from either the Government Census or the Central Board and apply to European growers only.

The replacement of old varieties by new and more prolific varieties, the increase in fertilizer usage and improved agricultural methods, all had their effect in improving the yield of cane per acre, but the above table shows conclusively how dependent our crop is on rainfall.

The rainfall distribution for the year 1st June, 1954, to 31st May, 1955, was as follows—

TABLE II

	June	July	Aug.	Sept.	Oct.	Nov.
This period ...	1.08	0.46	1.02	4.86	10.96	3.59
Computed mean	1.55	1.09	1.41	2.40	3.45	4.25
	Dec.	Jan.	Feb.	Mar.	April	May
This period ...	1.91	7.94	3.23	8.13	2.91	1.15
Computed mean	4.76	4.22	4.75	5.42	2.53	2.06

It will be seen that the rainfall for the important growing months of September to April was good, with the exception of December, which was fairly dry.

The rainfall for the 1956 crop was down, however, and so is the crop yield according to the Central Board. The estimated crop yield for 1957 is comparable with that of 1955 and so is the rainfall. The rainfall to-date for the 1958 crop has been excellent and a record crop may well be expected.

TOTAL YIELDS AND ACRES

During the crushing season 1955-56 a record total of 938,980 tons of sugar was made and 8,005,990 tons of cane were crushed. The *Special Census of Sugarcane Plantations, 1955-56* deals with returns totalling 6,748,057 tons cane or 84.7 per cent of the total crop and, according to the Central Board, 92.1 per cent of the total European production.

The Central Board surveys reveal the marked difference in yields obtained by Europeans and non-Europeans. Thus during the year 1955-56 the average yield for Europeans, according to the Central

Board, CB 46/10, was 34.14 tons cane per acre, for non-Europeans it was 21.43 and for the whole Industry 32.64 tons per acre.

The table on page 591 gives the yields and areas dealt with by the Government Census returns and by the Central Board survey. Obviously the Central Board figures will be closer to that of the total industry, for it includes both European and non-European growers—

TABLE III

	Special Census Returns	Central Board Survey
Total cane harvested (<i>Tons</i>)	6,748,057	8,015,862*
Tons cane per acre	34.27	32.64
Area in acres harvested ...	196,923	245,610
Area under cultivation 30th April, 1956	442,775	562,427

* Includes non-quota and unclaimed cane

The following table is based on results from the Central Board survey for the 1955-56 crop—

TABLE IV

	Yield per acre	Per cent of crop	Per cent Cane Cut
European planters ...	34.76	66.3	62.3
European miller - cum - planters	32.65	25.9	25.9
Indian Planters	21.49	6.2	9.4
Bantu planters	21.19	1.5	2.3

VARIETY AND YIELD

The 1955-56 Census returns list N:Co.339 as a separate variety for the first time and it gave the excellent average yield of 43.9 tons cane per acre, but the area under this variety was small and most of the crop was high yielding plant cane. The following table gives the total acreage and the yield per acre of the main varieties for 1955-56—

TABLE V

	Acres Cut	Yield per acre
Co.301... ..	39,909	25.8
Co.331... ..	52,064	31.1
N:Co.310	95,578	39.4
N:Co.339	3,083	43.9

The following table gives the percentage area cut and the percentage area under plant cane for the different varieties on the 30th April, 1956—

TABLE VI

	Per cent Area Cut	Per cent Area under Plant Cane, April, 1956
Co.301... ..	20.3	3.9
Co.331... ..	26.4	19.5
N:Co.310	48.5	55.4
N:Co.339	1.6	10.1

From this table it is apparent that N:Co.310 is still increasing in popularity and that on the 30th April, 1956, more than half the total area under plant cane was N:Co.310. Co.301 is now disappearing rapidly, while Co.331 is also decreasing. The increase in N:Co.339 is spectacular, but unfortunately the areas under N:Co.293, N:Co.292 and N:Co.376 are not known, although as can be seen from the table, the total of these varieties together with the remnants of the older varieties not listed here amounted to only about 11 per cent of the area under plant cane on the 30th April, 1956.

YIELD FROM DIFFERENT AREAS

The yield of cane per acre for 1955-56 was an all-time record of 34.27. Similarly, the yield on the North Coast, 35.20 tons cane per acre was a record, bettering the previous record yield of 34.09 tons cane per acre in 1943 by more than a ton cane per acre. Zululand had the excellent record yield of 39.43 tons cane per acre, or more than two tons better than the previous best yield of 1954 when it was 37.08 tons cane per acre and more than eight tons better than the 1943 yield. The districts, Lower Umfolozi, Hlabisa and Piet Retief all averaged over 40 tons cane per acre and Piet Retief nearly 50 tons cane per acre. The yield on the South Coast was, however, only 22.84 tons cane per acre, or more than one ton less than the previous year and well below the record yield of 1939 when the South Coast averaged 27.00 tons cane per acre.

The following table gives the yields recorded for the Industry and its main sub-divisions—

TABLE VII

	Average Yield 1938-42	Average Yield 1943-47	Average Yield 1948-52	Average Yield 1955
South Coast ...	22.60	21.37	19.69	22.84
North Coast ...	27.88	29.15	27.34	35.20
Zululand... ..	27.94	26.65	26.96	39.43
Total Industry	26.60	26.42	25.50	34.27

GENERAL INFORMATION

The Special Census of Sugarcane Plantations, 1955-56, gives returns from 810 individuals with a total farm area of 778,355 acres, of which 400,756 acres were under cane on 30th April, 1956. During the year 5,562 acres of virgin land were planted and there were still 43,467 acres of virgin land considered suitable for planting cane. Like the previous year more than half the virgin land planted to cane was in the Lower Tugela and Lower Umfolozi districts and these two districts with Hlabisa still had the largest areas of suitable virgin land. During the year there were 42,019 acres under long fallow and 26,209 acres under short fallow. The average age of cane at ploughing out was 6.4 years.

Of the 400,756 acres under cane given, the following areas and percentage areas were under plant cane and ratoons.

TABLE VIII

	Area in Acres	Per cent of Area under Cane
Plant cane	111,736	27.9
First Ratoons	124,837	31.1
Second ratoons	104,261	26.0
Third ratoons	44,904	11.2
Fourth ratoons	11,359	2.8
Other ratoons	3,659	0.9
Total under cane ...	400,756	100.0

Compared with the results of the previous year there has been an increase in the areas under third and later ratoons, but most of the cane is still ploughed out after a second ratoon, which agrees with the average age of 6.4 years at the time of ploughing out.

IRRIGATION

The Sugar Industry Central Board in CB 46/11, CB 238 of 16th October, 1957, gives interesting data on the area under irrigation in the Industry. On 30th April, 1957, there were 12,504 acres out of a total of 12,597 acres under irrigation at Pongola and 9,326 acres or 74 per cent of the area under cane was to be cut during the 1957-58 season at an estimated yield of 48.5 tons cane per acre and sucrose content of 14.30 per cent. At Nkwaleni, 8,328 acres out of 8,615 were under irrigation. Natal Estates still have the largest total area under irrigation, there being 14,971 acres in this category. On the South Coast nearly all the irrigation is confined to Illovo, where there are 1,659 acres.

The following table gives further details of irrigation on 30th April, 1957—

TABLE IX

	Area under Cane	Area under Irrigation	Percentage under Irrigation
European planters ...	354,833	35,885	10.1
Miller-cum-planters ...	145,177	19,504	13.4
Indian growers	59,547	1,536	2.6
Bantu growers	13,189	0	0
Total area	572,746	56,925	9.9

FERTILIZER USED

During 1957 the Sugar Industry used the following amounts of fertilizers—

	Tons
Mixtures... ..	23,412
Nitrogenous straight fertilizer ...	19,382
Phosphatic straight fertilizer ...	8,099
Potassic straight fertilizer	8,746

Fertilizer usage during recent years within the Industry is reflected by the following table—

TABLE X

	1951	1954	1956	1957
Tons N	2,135	4,516	7,397	6,875
Tons P ₂ O ₅	6,526	6,004	4,505	3,415
Tons K ₂ O... ..	842	2,813	5,786	7,389

It will be seen that the use of potash continues to increase rapidly, but after a satisfactory increase in nitrogen in recent years it has fallen slightly in 1957, which is certainly not in the best interest of the Industry. Phosphate usage continues to decrease and the amount now used appears to be rather low.

Total yields of cane in the Industry are known and the amount of N, P₂O₅ and K₂O added annually per ton of cane produced can therefore be calculated and is given in the following table—

TABLE XI

	1951	1953	1955	1957
Total tons of cane	4,805,249	6,221,531	8,005,990	8,594,618
Lb. N per ton cane	0.89	1.07	1.46	1.60
Lb. P ₂ O ₅ per ton cane	2.72	1.84	1.29	0.79
Lb. K ₂ O per ton cane	0.35	0.55	0.14	1.72

Fertilizer usage can still be profitably increased and the decrease in phosphates should now be arrested.

**AREA OF CANE HARVESTED AND YIELDS FOR DIFFERENT VARIETIES AND RATOONS
(EUROPEAN PLANTERS ONLY) 1955-1956**

Compiled from Union Department of Census Returns

VARIETY	PLANT CANE		FIRST RATOON		SECOND RATOON		THIRD RATOON		FOURTH RATOON		OTHER RATOONS		TOTAL	
	Acres	Tons/ Acre	Acres	Tons/ Acre	Acres	Tons/ Acre	Acres	Tons/ Acre	Acres	Tons/ Acre	Acres	Tons/ Acre	Acres	Tons/ Acre
Co.301	3,862	34.8	12,834	28.2	12,861	23.9	7,904	22.9	1,752	18.9	696	17.5	39,909	25.8
Co.331	16,974	34.8	18,802	30.4	12,570	28.2	2,512	25.8	840	27.4	366	34.7	52,064	31.0
N:Co.310	34,172	43.2	31,695	38.6	22,104	34.2	5,457	38.5	1,802	47.1	348	39.5	95,578	39.4
N:Co.339	2,854	44.9	99	38.4	111	20.8	11	35.0	—	—	8	87.1	3,083	43.9
Other varieties	2,426	40.0	979	30.2	1,262	19.9	953	20.6	421	31.4	248	29.7	6,289	30.5
TOTAL	60,288	40.3	64,409	30.1	48,908	29.6	16,837	28.3	4,815	32.1	1,666	28.1	196,923	34.3

AREA OF CANE HARVESTED AND YIELDS BY DISTRICTS (EUROPEAN PLANTERS ONLY) 1955-1956

Compiled from Union Department of Census Returns

DISTRICTS	Co.301		Co.331		N:Co.310		N:Co.339		Other varieties		Totals	
	Acres	Tons/ acre	Acres	Tons/ acre	Acres	Tons/ acre	Acres	Tons/ acre	Acres	Tons/ acre	Acres	Tons/ acre
PORT SHEPSTONE	520	23.0	587	22.9	1,950	25.6	110	28.1	460	6.1	3,627	22.5
UMZINTO	11,276	18.3	9,085	24.8	8,098	23.9	190	31.5	548	28.3	29,197	22.3
DURBAN AND PINETOWN	1,361	20.9	3,600	20.4	3,546	31.4	24	47.2	64	19.2	8,595	25.1
Total South of Umgeni River	13,157	18.8	13,272	23.6	13,594	26.2	324	31.5	1,072	18.3	41,419	22.9
INANDA... ..	6,227	32.0	4,754	40.1	9,539	40.0	257	56.7	275	37.5	21,052	37.8
LOWER TUGELA	13,318	28.2	15,784	33.1	25,427	37.3	1,080	44.9	1,208	37.9	56,817	34.2
Total North Coast between Umgeni and Tugela Rivers	19,545	29.5	20,538	34.8	34,966	38.0	1,337	47.3	1,483	37.8	77,869	35.2
Total for Natal South of the Tugela	32,702	25.2	33,810	30.3	48,560	34.7	1,661	44.2	2,555	29.6	119,288	31.0
MTUNZINI	2,410	29.0	8,612	30.4	12,623	39.3	799	38.4	711	38.3	25,155	35.3
ESHOWE	821	25.1	3,740	26.4	5,950	33.7	121	32.9	770	36.2	11,402	30.9
LOWER UMFOLOZI	3,464	30.5	4,542	41.2	19,910	48.8	378	54.1	1,062	32.5	29,356	44.9
HLABISA	442	22.5	1,235	31.1	6,088	47.1	124	56.1	1,169	22.5	9,058	40.7
PIET RETIEF	70	27.6	125	43.9	2,447	51.0	—	—	22	13.2	2,664	49.7
Total North of Tugela	7,207	28.8	18,254	32.5	47,018	41.6	1,422	43.7	3,734	31.0	77,635	39.4
TOTAL FOR UNION	39,909	25.8	52,064	31.0	95,578	38.1	3,083	43.9	6,289	30.4	196,923	34.3

YIELDS OF CANE HARVESTED BY DISTRICTS (EUROPEAN PLANTERS ONLY)

Compiled from Union Department of Census Returns

DISTRICT	TONS CANE PER ACRE												
	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
PORT SHEPSTONE	31.32	22.95	19.18	19.26	22.68	21.45	19.42	19.24	19.44	16.33	17.94	21.60	22.44
UMZINTO... ..	24.68	24.18	19.51	17.59	19.70	22.13	19.76	18.63	17.60	20.48	21.69	24.96	22.22
DURBAN, UMLAZI, ETC.	24.01	24.16	20.11	19.05	20.47	20.69	18.66	21.16	18.03	20.47	20.21	22.33	25.10
Total South of Umgeni River ...	25.07	24.07	19.59	18.01	20.12	21.79	19.48	19.23	17.90	20.03	20.99	23.94	22.84
Ratio to 1926 (=100)	135.95	130.53	106.24	97.67	109.11	118.18	105.64	104.28	97.07	108.62	113.83	129.83	123.86
INANDA	40.45	37.51	32.32	27.20	30.42	31.58	29.10	28.36	26.38	29.92	33.55	34.21	37.92
LOWER TUGELA	31.10	29.49	26.58	22.77	24.90	27.78	28.85	27.66	23.33	28.20	30.25	31.97	34.20
Total for North Coast between the Umgeni and Tugela Rivers...	34.09	32.14	28.57	24.23	26.72	29.03	26.92	27.85	24.23	28.67	31.13	32.54	35.20
Ratio to 1926 (=100)	183.18	172.70	153.52	130.20	143.58	155.99	144.65	149.65	130.20	154.06	167.27	174.85	189.15
Total for Natal South of the Tugela	30.64	29.08	25.35	21.90	24.43	26.41	24.23	24.84	21.97	25.68	27.59	29.60	30.86
Ratio to 1926 (=100)	165.18	156.77	136.66	118.06	131.70	142.37	130.62	133.91	118.46	138.44	148.73	159.57	166.36
MTUNZINI	30.71	27.19	23.73	18.02	22.01	25.47	24.11	26.62	21.74	24.73	30.85	35.96	35.28
ESHOWE	27.46	27.27	22.68	20.27	21.35	24.34	23.13	26.42	21.59	23.77	25.96	30.61	30.86
LOWER UMFOLOZI	33.45	31.47	30.07	25.83	27.39	30.11	27.45	31.57	26.72	27.93	29.23	39.05	44.97
HLABISA	30.79	29.00	25.52	23.68	25.64	27.52	25.75	31.51	35.88	36.70	40.00	40.02	40.74
PIET RETIEF	—	—	—	39.16	38.15	48.11	39.52	40.21	32.79	33.32	39.89	41.90	49.76
Total North of the Tugela	31.28	29.08	26.30	22.15	24.54	27.46	25.49	29.05	25.47	27.27	30.60	37.08	39.43
Ratio to 1926 (=100)	131.26	122.03	110.37	92.95	109.98	115.23	106.97	121.91	106.88	114.44	128.41	155.60	165.46
GRAND TOTAL FOR UNION	30.87	29.08	25.70	21.99	24.47	26.80	24.70	26.41	23.28	26.29	28.75	32.53	34.27
Ratio to 1926 (=100)	151.03	142.27	125.73	107.58	119.72	131.12	120.84	129.21	113.89	128.62	140.66	159.15	167.66
Rainfall of all Districts (inches) <i>(Average from 54 centres, year ending 31st May)</i>	48.94	38.60	41.10	27.06	34.15	39.25	31.45	38.92	25.42	36.40	33.88	39.08	47.24

YIELDS OF CANE HARVESTED BY DISTRICTS (EUROPEAN PLANTERS ONLY)

Compiled from Union Department of Census Returns

DISTRICT	PER CENT. OF TOTAL TONNAGE												
	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
PORT SHEPSTONE	2.0	1.6	1.3	1.8	1.9	1.8	1.8	1.6	2.0	1.4	1.3	1.4	1.2
UMZINTO	14.1	14.9	12.6	13.9	12.8	13.5	12.2	10.6	11.4	11.1	10.8	10.2	9.6
DURBAN, UMLAZI, ETC.	4.0	3.4	3.2	3.9	3.7	3.3	4.0	3.7	3.8	3.7	3.6	3.7	3.2
Total South of Umgeni River ...	20.1	19.9	17.2	19.6	18.3	18.6	17.9	15.9	17.2	16.2	15.7	15.3	14.0
INANDA	16.8	16.8	17.6	16.4	17.1	15.7	15.6	12.1	13.5	12.5	12.4	10.7	11.8
LOWER TUGELA	27.5	26.7	27.2	27.9	28.7	28.2	28.3	30.8	28.4	31.4	30.7	29.4	28.8
Total for North Coast between the Umgeni and Tugela Rivers...	44.3	43.5	44.8	44.3	45.8	43.9	44.0	42.9	41.9	43.9	43.2	40.1	40.6
Total for Natal South of the Tugela	64.4	63.4	62.0	63.9	64.1	62.5	61.9	58.8	59.1	60.1	58.9	55.4	54.6
MTUNZINI	11.0	11.4	11.1	9.6	10.3	11.5	12.1	12.8	10.9	12.1	13.2	13.1	13.1
ESHOWE	5.5	6.0	5.6	5.7	5.4	5.8	6.0	6.3	5.5	5.4	5.2	5.5	5.2
LOWER UMFOLOZI	15.6	15.7	17.7	16.6	16.2	16.7	16.2	18.1	17.5	15.8	16.0	18.4	19.6
HLABISA	3.5	3.5	3.7	3.9	3.6	3.2	3.5	3.8	6.8	6.4	6.4	5.7	5.5
PIET RETIEF	—	—	—	0.3	0.5	0.4	0.3	0.2	0.2	0.1	0.3	1.9	2.0
Total North of the Tugela	35.6	36.6	38.0	36.1	35.9	37.5	38.1	41.2	40.9	39.9	41.1	44.6	45.4
GRAND TOTAL FOR THE UNION ...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

YIELDS OF CANE HARVESTED BY DISTRICTS (EUROPEAN PLANTERS ONLY)

Compiled from Union Department of Census Returns

DISTRICT	YIELD OF CANE IN TONS										
	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
PORT SHEPSTONE	79,993	57,630	67,743	78,890	82,825	80,330	83,333	90,643	68,794	86,716	81,398
UMZINTO	528,593	515,571	532,675	624,009	555,307	537,457	551,033	559,063	590,796	639,718	648,621
DURBAN, UMLAZI, ETC.	136,253	146,087	153,073	152,668	179,668	189,824	168,492	184,476	195,019	230,829	215,771
Total South of Umgeni River ...	722,476	729,401	764,638	859,287	815,305	810,614	770,168	814,559	854,609	957,262	945,790
Ratio to 1926 (= 100)	162.1	163.6	171.5	192.7	178.9	181.8	172.76	182.71	191.69	214.72	212.15
INANDA	737,413	608,736	714,066	722,790	709,790	616,033	602,855	625,034	678,481	668,879	798,168
LOWER TUGELA... ..	1,144,887	1,035,855	1,195,584	1,299,218	1,287,492	1,563,652	1,274,693	1,575,747	1,677,077	1,840,007	1,943,182
Total for North Coast between the Umgeni and Tugela Rivers ...	1,882,300	1,644,591	1,909,650	2,021,495	1,997,282	2,179,685	1,877,548	2,200,781	2,355,558	2,508,886	2,741,350
Ratio to 1926 (= 100)	227.3	198.6	230.6	244.1	241.2	263.2	226.72	265.75	284.44	302.96	331.29
Total for Natal South of the Tugela	2,604,776	2,373,992	2,674,288	2,880,782	2,812,587	2,990,299	2,647,716	3,015,340	3,210,167	3,466,149	3,687,140
Ratio to 1926 (= 100)	204.5	186.3	209.9	226.1	220.8	234.7	207.83	—	251.98	272.08	289.43
MTUNZINI	465,147	358,378	429,676	529,967	549,090	652,558	490,409	606,817	722,561	821,665	887,342
ESHOWE	236,115	211,170	225,903	266,752	273,448	318,883	244,590	273,070	285,158	341,815	351,903
LOWER UMFOLOZI	741,972	618,269	674,790	771,913	734,567	919,627	782,050	793,977	873,521	1,149,718	1,320,074
HLABISA	153,689	145,062	149,372	145,318	158,309	192,248	304,745	321,455	346,711	356,657	369,043
PIET RETIEF	—	9,321	18,886	17,511	14,937	10,858	11,442	5,598	17,750	117,962	132,555
Total North of the Tugela	1,596,923	1,342,200	1,498,627	1,731,461	1,730,351	2,094,174	1,833,236	2,000,977	2,245,701	2,787,817	3,060,917
Ratio to 1926 (= 100)	175.7	147.7	164.9	190.5	190.4	230.5	201.75	220.21	247.14	306.80	336.86
GRAND TOTAL FOR THE UNION	4,201,699	3,716,192	4,172,915	4,612,243	4,542,938	5,084,473	4,480,952	5,016,337	5,455,868	6,253,966	6,748,057
Ratio to 1926 (= 100)	192.5	170.3	191.2	211.3	208.1	233.0	205.30	229.83	249.97	286.53	309.17