

WEATHER REPORT FOR THE YEAR 1st JUNE 1961, TO 31st MAY, 1962

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General Scope of Report

As in previous years this weather report deals with the rainfall data from 54 well scattered centres throughout the sugar belt, but other meteorological data such as temperatures, evaporation and hours of sunshine refer to the South African Sugar Association Experiment Station at Mount Edgecombe which is however reasonably centrally situated and reflect the conditions prevailing within the Industry fairly well.

The rainfall recorded during the year June, 1961 to May, 1962 will be discussed in some detail but reference will also be made to the rainfall of the previous year, for it too will have some effect on the crop to be harvested during the 1962-63 season.

In Table 1 the annual rainfall data for the past five years are given for each of the 54 recording stations.

Table 2 gives the rainfall by magisterial districts, and also for the three main divisions for each month of the year from June, 1961 to May, 1962.

Table 3 gives the calculated mean rainfall for the past 38 years and the monthly percentage distribution. The actual rainfall for the year now under review is also given as are the evaporation data taken at the Experiment Station, Mount Edgecombe.

Table 4 gives the rainfall distribution according to growing periods for the past two years for all magisterial districts and the three main sub-divisions of the Industry.

Table 5 gives the monthly rainfall for 54 centres for the past 4 years, the evaporation from an open water tank at the Experiment Station for the same period and the amount by which evaporation exceeded rainfall for each month.

TABLE 1
Rainfall for 54 Centres

	Rainfall for year 1st June 1957 to 31st May 1958	Rainfall for year 1st June 1958 to 31st May 1959	Rainfall for year 1st June 1959 to 31st May 1960	Rainfall for year 1st June 1960 to 31st May 1961	Rainfall for year 1st June 1961 to 31st May 1962
Port Shepstone					
Mehlomnyama	50.41	46.46	39.17	48.21	36.25
Umzinto					
Hibberdene	50.10	46.05	35.87	54.56	34.40
Mtwalume	42.86	47.64	30.26	41.32	25.76
Sezela Mill	54.31	38.10	36.16	45.84	32.06
Esperanza Mill	55.50	40.72	35.38	46.60	35.97
Renishaw Mill	58.00	36.73	35.26	48.06	37.79
Dumisa	44.11	47.71	30.43	46.82	31.42
Durban, Camperdown, etc.					
Illovo Mill	49.46	31.82	30.84	43.18	39.64
Umbumbulu	41.2	42.61	28.39	42.46	29.40
Thornville	38.39	36.57	26.30	43.06	26.64
Inanda					
Mount Edgecombe—					
Milkwood Kraal	49.65	28.93	26.08	35.64	27.75
Experiment Stn.	51.11	28.22	27.81	38.91	30.83
La Lucia	53.62	29.18	30.01	42.34	33.88
La Mercy	49.81	28.06	28.42	46.52	28.12
Canelands	46.28	29.48	26.29	50.51	31.74
Tonga—					
Frosterly	48.23	32.81	31.91	46.09	31.02
Inyanninga	46.65	31.94	32.95	43.86	31.97
Inanda	52.14	46.06	38.53	48.62	32.42
Tonga—					
Mwawine	52.46	31.61	37.59	48.10	31.33
Lower Tugela					
Maidstone Mill	46.70	32.84	34.36	45.10	28.41
Sinembe	50.17	35.57	30.08	44.37	33.19
Upper Tongaat	58.04	42.42	37.55	49.46	35.63
Fraser's Estate	52.13	30.48	36.55	45.38	30.83
Chaka's Kraal					
Experimental Farm	55.83	32.31	34.42	42.79	32.51
Chaka's Kraal	56.76	38.21	33.30	42.01	29.98
Groutville	48.29	34.51	32.61	38.60	26.33
Kearsney	62.85	41.22	40.83	41.81	37.04
Doornkop Mill	44.97	34.47	32.74	38.89	28.79
Doornkop, Sprinz	61.04	48.88	41.95	52.48	40.05
Gledhow Mill	56.24	32.33	34.61	42.44	34.36
Darnall Mill	56.37	33.49	39.05	47.75	36.50
Tugela Mouth	66.27	36.44	45.40	54.04	43.49
Mtunzini					
Mandeni	62.53	31.05	37.63	41.94	35.49
Amatikulu Mill	60.63	28.47	40.03	48.29	32.98
Inyoni	50.07	31.44	39.02	50.90	31.54
Mtunzini	59.95	38.70	54.70	66.73	49.76
Blackburn	51.44	33.18	40.40	54.59	36.73
Eshowe					
Entumeni Mill	42.58	30.17	37.59	46.57	36.99
Eshowe	53.92	35.96	40.56	50.12	39.19
Nkwaleni	39.47	20.14	29.66	37.30	20.54
Lower Umfolozi					
Felixton Mill	63.97	37.43	57.81	68.67	49.98
Empangeni West	46.32	26.00	36.25	48.31	31.70
Empangeni Mill	45.92	28.14	40.15	61.50	36.72
Logoza	51.25	27.07	42.67	60.93	39.56
Ukulu Properties	47.30	24.37	36.65	57.45	29.68
Mposa	47.96	24.71	37.13	54.91	39.19
Kwambonambi	51.92	28.42	36.67	54.49	47.11
Eteza	45.78	27.30	37.08	43.12	44.84
Hlabisa					
Mtubatuba Mill	48.00	25.43	32.67	36.24	39.50
U.L.O.A.	60.57	33.26	49.91	47.76	55.90
Nyalazi River	50.86	24.87	36.53	31.66	33.83
Hluhluwe	42.09	21.23	31.28	32.27	23.18
Ubonbo					
Mkuzi	32.21	20.18	24.47	39.01	23.36
Piet Retief					
Pongola	28.26	27.07	25.89	28.67	18.24
Mean	50.43	33.34	35.66	46.43	34.10

TABLE 2
Rainfall in Inches by Districts for Months of June, 1961, to May, 1962 inclusive

District	No. of Centres	1961							1962					Total June 1961 to May 1962
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Port Shepstone ..	1	1.43	2.03	0.16	3.56	2.36	4.85	1.86	4.60	2.15	11.14	0.91	1.20	36.25
Umzinto	6	1.34	1.74	0.33	2.95	2.16	4.24	2.19	5.14	5.04	5.83	1.26	0.66	32.88
Durban, Pinetown, etc.	3	1.56	0.72	0.22	2.90	2.30	2.90	2.70	6.68	3.82	5.70	1.71	0.68	31.89
Mean: S. Coast ..	10	1.42	1.46	0.28	3.00	2.22	3.90	2.31	5.55	4.39	6.32	1.36	0.72	32.93
Inanda	9	3.54	1.02	0.78	3.04	3.28	3.70	2.21	3.96	2.45	4.38	1.82	0.83	31.01
Lower Tugela ..	13	3.65	0.50	0.93	3.43	3.97	3.81	3.07	3.95	3.10	4.70	1.74	0.77	33.62
Mean: N. Coast	22	3.61	0.71	0.87	3.27	3.69	3.76	2.72	3.95	2.84	4.57	1.77	0.79	32.55
Mean: S. of Tugela	32	2.92	0.94	0.68	3.18	3.23	3.81	2.59	4.45	3.32	5.12	1.64	0.77	32.65
Mtunzini	5	5.09	1.09	1.13	3.40	4.79	4.75	3.54	3.25	3.13	4.33	1.65	1.13	37.28
Eshowe	3	2.04	0.30	0.47	3.87	3.59	5.61	4.41	3.78	1.92	4.08	1.61	0.54	32.22
Lower Umfolozi..	8	5.21	1.75	1.15	3.08	4.34	5.30	2.60	4.30	1.64	5.69	3.37	1.43	39.86
Hlabisa	4	7.96	1.98	0.96	2.69	4.04	3.15	2.45	3.07	0.62	7.88	2.68	0.62	38.20
Ubombo	1	2.36	0.06	0.93	3.12	3.10	3.98	0.83	1.68	2.24	3.72	1.34	Nil	23.36
Piet Retief	1	2.33	0.02	0.15	2.78	2.07	2.26	1.48	1.69	0.35	2.25	2.83	0.03	18.24
Mean: Zululand and Piet Retief	22	4.99	1.29	0.96	3.18	4.13	4.63	2.90	3.53	1.80	5.31	2.50	0.96	36.18
General Mean ..	54	3.76	1.08	0.80	3.18	3.60	4.14	2.72	4.08	2.70	5.20	1.99	0.85	34.10

TABLE 3
Rainfall and Evaporation Data

Month	Mean Percentage Rainfall Distribution 1924-1961	Computed Mean Rainfall for 54 Centres 1924-1961	Actual Rainfall for 54 Centres June, 1961, to May, 1962	Evaporation at Experiment Station	
				Mean 1936-1961	June, 1961, to May, 1962
June	3.88	1.49	3.76	2.34	2.15
July	2.76	1.06	1.08	2.52	2.51
August	3.57	1.37	0.80	2.93	3.60
September	6.78	2.60	3.18	3.62	4.14
October	9.17	3.52	3.60	4.19	4.97
November	11.21	4.30	4.14	4.75	5.13
December	12.43	4.77	2.72	5.32	6.07
January	11.21	4.30	4.08	5.62	5.80
February	12.41	4.76	2.70	4.76	5.07
March	13.68	5.25	5.20	4.48	5.28
April	7.58	2.91	1.99	3.36	4.30
May	5.32	2.04	0.85	2.80	3.34
	100.00	38.37	34.10	46.69	52.36

TABLE 4
Rainfall in Inches by Districts for the Two-year Period June, 1960 to May, 1962 inclusive

	No. of Centres	1960 Winter Growth June to August	1960 Early Growth Sept. and October	1960-1961 Optimum Growth Nov. to March	1961 Late Growth April and May	1961 Winter Growth June to August	1961 Early Growth Sept. and October	1961-1962 Optimum Growth Nov. to March	1962 Late Growth April and May	Total for Two Years June, 1960 to May, 1962
Port Shepstone	1	1.38	7.13	27.11	12.59	3.62	5.92	24.60	2.11	84.46
Umzinto	6	1.76	6.33	27.70	11.44	3.41	5.11	22.44	1.92	80.11
Durban, Pinetown, etc. ..	3	0.78	6.32	26.57	9.22	2.50	5.20	21.80	2.39	74.78
Mean: South Coast	10	1.42	6.40	27.30	10.88	3.16	5.22	22.47	2.08	78.93
Inanda	9	1.84	5.31	26.19	11.27	5.34	6.32	16.70	2.65	75.62
Lower Tugela	13	2.29	5.81	27.63	9.27	5.08	7.40	18.63	2.51	78.62
Mean: North Coast	22	2.12	5.60	27.05	10.08	5.19	6.96	17.84	2.56	77.40
Mean: South of Tugela ..	32	1.90	5.86	27.11	10.34	4.54	6.41	19.29	2.41	77.86
Mtunzini	5	1.47	5.87	31.81	10.77	7.31	8.19	19.00	2.78	87.20
Eshowe	3	1.93	5.34	31.26	6.13	2.81	7.46	19.80	2.15	76.88
Lower Umfolzi	8	2.64	4.38	40.33	8.83	8.11	7.42	19.53	4.80	96.04
Hlabisa	4	1.35	4.55	26.91	4.17	10.90	6.73	17.17	3.30	75.08
Ubombo	1	0.55	3.35	29.77	5.34	3.35	6.22	12.45	1.34	62.37
Piet Retief	1	0.91	4.57	20.54	2.65	2.50	4.85	8.03	2.86	46.91
Mean: Zululand and Piet Retief	22	2.45	4.84	33.34	7.62	7.24	7.38	18.17	3.46	84.43
General Average	54	2.12	5.44	29.65	9.22	5.64	6.78	18.84	2.84	80.53
Computed Mean for 38 years		3.92	6.12	23.38	4.95	3.92	6.12	23.38	4.95	76.74

TABLE 5
Rainfall and Evaporation in Inches for the Past Four Years

Month	1958 - 1959			1959 - 1960			1960 - 1961			1961 - 1962		
	Evaporation	Rainfall	Rainfall Deficiency	Evaporation	Rainfall	Rainfall Deficiency	Evaporation	Rainfall	Rainfall Deficiency	Evaporation	Rainfall	Rainfall Deficiency
June	2.22	0.78	1.45	2.34	0.07	2.27	2.38	0.43	1.95	2.15	3.76	0.00
July	2.11	0.55	1.56	2.51	0.66	1.85	2.65	0.63	2.02	2.51	1.08	1.43
August	2.65	0.37	2.28	3.33	2.35	0.98	2.27	1.06	1.21	3.60	0.80	2.80
September	2.92	4.28	0.00	4.06	2.63	1.43	3.51	2.30	1.21	4.14	3.18	0.96
October	4.95	2.71	2.24	4.74	4.58	0.16	4.07	3.14	0.93	4.97	3.60	1.37
November	4.59	4.95	0.00	4.62	3.03	1.59	5.08	7.24	0.00	5.13	4.14	0.99
December	5.03	3.90	1.03	5.40	3.99	1.41	4.85	9.59	0.00	6.07	2.72	3.35
January	5.13	4.15	0.98	5.46	2.10	3.36	5.68	4.76	0.92	5.80	4.08	1.72
February	4.15	3.29	0.86	4.87	5.05	0.00	5.48	3.70	1.78	5.07	2.70	2.37
March	4.62	1.15	3.47	5.21	4.68	0.53	4.88	4.36	0.52	5.28	5.20	0.08
April	3.68	1.01	2.67	3.35	5.12	0.00	3.70	8.24	0.00	4.30	1.99	2.31
May	2.42	6.20	0.00	2.74	1.40	1.34	2.94	0.98	1.96	3.34	0.85	2.49
Total	44.47	33.34	16.54	48.63	35.66	14.92	47.49	46.43	12.50	52.36	34.10	19.87

TABLE 6

The following are the Screen Temperatures by Months in Degrees Fahrenheit at the Experiment Station for the Year June, 1961 to May, 1962, compared with the Means for the Period 1928 to 1961

Month	THIS PERIOD					AVERAGE 1928 TO 1961 INCLUSIVE				
	Maximum	Minimum	Mean	Plus or Minus Average	Daily Range	Maximum	Minimum	Mean	Daily Range	
June	73.6	56.7	65.1	+2.3	16.9	72.9	52.7	62.8	20.2	
July	72.3	55.4	63.9	+1.7	16.9	72.4	52.0	62.2	20.4	
August	72.3	53.1	63.5	-0.1	19.2	73.2	53.9	63.6	19.3	
September	74.1	59.5	66.9	+1.1	14.6	74.2	57.3	65.8	16.9	
October	73.2	58.3	65.8	-2.5	14.9	75.8	60.8	68.3	15.0	
November	76.6	63.3	70.0	-0.6	13.3	77.7	63.4	70.6	14.3	
December	77.5	64.0	70.9	-1.9	13.5	79.8	65.7	72.8	14.1	
January	79.3	66.9	73.2	-1.0	12.4	81.1	67.2	74.2	13.9	
February	81.1	68.4	74.8	+0.1	12.7	81.6	67.7	74.7	13.9	
March	81.3	66.2	73.8	+0.5	15.1	80.4	66.2	73.3	14.2	
April	78.1	62.6	70.3	0.0	15.5	78.2	62.3	70.3	15.9	
May	74.3	55.8	65.1	-1.4	18.5	75.9	57.1	66.5	18.8	
Mean	76.1	60.9	68.5	-0.2	15.2	76.9	60.5	68.7	16.4	

TABLE 7

The following table gives the mean monthly earth temperatures

Month	Experiment Station 1935-61			Experiment Station June 1961 to May 1962		
	1 foot	2 feet	4 feet	1 foot	2 feet	4 feet
June	64.1	66.6	69.5	65.7	66.9	69.6
July	62.7	64.6	66.9	64.8	65.7	67.8
August	64.5	65.6	66.7	64.0	64.9	66.7
September	67.6	68.1	68.2	68.0	68.4	68.2
October	70.7	70.8	70.2	68.9	69.3	69.4
November	73.5	73.3	72.6	72.1	71.8	70.7
December	76.3	76.1	74.5	74.5	74.1	72.7
January	78.7	78.9	76.7	77.2	76.8	75.2
February	79.5	79.5	78.0	78.4	78.1	76.6
March	78.2	78.9	78.2	77.5	77.7	76.8
April	74.7	76.1	76.6	74.7	75.7	76.3
May	69.3	71.5	73.5	68.4	70.0	72.5
Mean	71.7	72.5	72.6	72.0	71.6	71.9

Comments on Rainfall

Although the crop now to be cut benefited from the excellent rains during the year June, 1960 to May, 1961, it was adversely affected by the deficient rainfall of the year June, 1961 to May, 1962, when only 34.10 inches of rain fell compared with our 38 years' mean of 38.37 inches. The distribution of rainfall was also relatively poor with the important growing months of December and February being very dry.

The Industry experienced unusually heavy rains during June, 1961 when an average fall of 3.76 inches was recorded. Uloa had no less than 13.33 inches for the month of which 8.12 inches fell within 30 hours causing considerable damage on the Umfolozi flats. Mtunzini had 10.25 inches and drainage became a real problem. The condition of the cane was excellent, temperatures were high but there was excessive flowering of cane in many areas. The rainfall during July was 1.08 inches and it was not until August with a rainfall of 0.80 inches that the Industry started suffering from a drought. It was therefore on the whole a very favourable winter and the rainfall from September to November averaging respectively 3.18 inches, 3.60 inches and 4.14 inches was quite satisfactory.

December was very dry with only 2.72 inches of rain or more than 2 inches below our 38 years' mean for the month. January, 1962 had a rainfall of 4.08 inches which is not much lower than the mean for January, but February with only 2.70 inches of rain was again very dry and more than 2 inches below our mean for the month. The drought was particularly bad in Zululand with an average rainfall of only 1.80 inches for the month. The rainfall for March was 5.20 inches which although nearly equal to the mean of the month did not make up for the deficient rainfall of December and February. The last two months i.e. April and May were both very dry with 1.99 inches and 0.85 inches of rain respectively. Since December, 1961 to May, 1962 the total rainfall was therefore only 17.54 inches compared to our mean rainfall of 24.03 inches for the 6 months. The Industry at the end of May was therefore suffering from a bad drought and the indications are that conditions may become quite serious during winter.

Summarising the rainfall over the past two years, it can be stated that the crop went through a normal winter drought in 1960. Fairly good rains fell towards the end of September and during October and exceptionally heavy rains fell during November and Decem-

ber. Satisfactory rainfall and growing conditions continued and during April the rainfall was again very high. Although May was relatively dry excellent rains fell in June and the crop experienced its first real set-back with the low rainfall of December. The important growing month of February was similarly deficient in rainfall. Although the rainfall during March was satisfactory, April and May were decidedly dry and at the end of May the Industry was in a drought with the crop prospects well below best.

Temperatures

The mean screen temperature for the year under review was 68.5°F at the Experiment Station. The mean screen temperature was thus 0.2°F below our 34 years' mean. June and July had mean screen temperatures well above the average for these months but October and May were relatively cool months.

Evaporation

Evaporation from an open water surface totalled 52.36 inches compared with our 26 years' mean of 46.69 inches. This exceptionally high total evaporation makes the rainfall deficiency even greater. There was only one month, June, 1961, when the average rainfall in the Industry exceeded the evaporation at the Experiment Station. The accumulated rainfall deficiency for the year i.e. the monthly total evaporation in excess of rainfall amounted to 19.87 inches. This is the highest rainfall deficiency we have had for many years and more than 60 per cent of this deficiency occurred during the last six months of the year under review.

Hours of Sunshine

The hours of sunshine for the year were 103.9 per cent of the 34 years' mean. The hours of sunshine for the period March to June, 1962 were 109.7 per cent of the mean. The year under review was therefore dry and sunny.

Conclusions

Although the first half of the year was on the whole favourable for sugarcane growth, the last six months were dry and excessive evaporation further desiccated the soil.

By the end of May the Industry was suffering from a bad drought which must affect cane yields adversely.