
Fertiliser Consumption Patterns in Ceylon*

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INTRODUCTION

FERTILISER use on agricultural land in Ceylon has almost doubled over the decade, 1953 to 1962. During this period, agricultural research workers have intensified their investigations with a view to refining fertilizer recommendations for each crop and for the agroclimatic zones in which they are grown. Agriculturalists, too, are now concerned not only with increasing yields but also to ensure a more rational use of fertiliser. A study of the patterns of fertiliser consumption is, therefore, appropriate to determine the progress which has been made in the general use of fertilisers.

HISTORICAL BACKGROUND

The commercial fertiliser industry began a little over a 100 years ago. But the extensive use of commercial fertilisers in most countries, especially in the developing countries of today, took place within the last 50 years. The earliest analyses in Ceylon, undertaken as early as 1900¹ by Bamber on tea, laid the foundations for increased productivity in tea by fertiliser application on an intensive scale. Later Joachim and his collaborators extended these investigations to other crops. The information so obtained by the Research Institutes on the main export crops and by the Department of Agriculture on the non-export crops has resulted in the development of clear and significant patterns of fertiliser consumption in Ceylon.

The use of commercial fertilisers during the 1930's was almost confined to the three main export crops—tea, rubber and coconut. No evidence of manuring of rubber² or of coconut is available for this period and it can be assumed that nearly all the fertilizer imported was used on tea. Technological advances apart, the poor prices received for all export crops during this period when the financial depression was at its worst, discouraged the use of commercial fertilisers on any major scale. The volume of total annual imports

¹ Petch T. "Facts about fertilisers". *The Tea Quarterly Vol. 1 (1928)*

² Constable D. H. "Manurial diagnosis for *Heavea Brasiliensis*". Progress Report of the Agronomy Department for 1951-54. *R. R. I. Bulletin No. 55.*

* Paper read at the 1963 sessions of the Ceylon Association for the Advancement of Science.

of fertilisers during the two years preceding the outbreak of World War II in 1939 was only in the region of 95,500 tons³. A system of fertiliser rationing was in force during the war years, and despite this there is every reason to believe that the volume of fertilisers used during this period exceeded that of the pre-war years. Improved prices and the priority given to the production and export of plantation crops would have no doubt stimulated the use of fertilisers in great measure, during the war period 1939-1945.

The trends in fertiliser consumption patterns in Ceylon during the last decade (1953 to 1962) are examined in this paper against the historical background outlined above. The main sources of data for this study were the five fertilizer firms dealing in the import of fertilisers, the Customs Returns and the Administration Reports of the Commissioner of Agrarian Services, the Director of Agriculture and the Rubber and Tea Commissioners.

OVERALL FERTILISER USE

Most of the fertiliser firms are unable to furnish accurate data for the fertilizers supplied by them in respect of each of the crops prior to 1958. Several firms are also unable to provide detailed and accurate figures in respect of supplies for crops other than tea, coconut and rubber. Under these circumstances, the import figures in the Customs Returns have been used in order to develop an index of the total annual use of all fertilisers for all crops. Table I gives the import figures of fertilisers from 1953-1962.

Two factors have been considered in using annual import figures to indicate the volume of fertilizers used annually. First, all the imports of fertilisers for any given year are not necessarily used on the land. At the end of every year there is a closing or carry-over stock remaining with each firm. Similarly, at the beginning of each year, stocks which are not issued in the previous year are brought forward. These quantities have to be deducted from the annual import figures or added to the import figure of the ensuing year. Not all fertiliser firms are able to provide accurate data in regard to their annual opening and closing stocks. Table I will indicate that there is in fact a general upward trend in the volume of annual imports of fertilisers. It will also be seen that no cyclical patterns are visible in these imports. It is, therefore, assumed that the opening and closing stocks of the firms have been constant and that the total annual imports have in fact been used on agricultural land. Subject to these assumptions it will be seen that fertiliser use

³ Eden T. "The supply and use of fertilisers in war time". *The Tea Quarterly* Vol. 12 (1939).

has increased from 153,000 tons in 1953 to 279,000 tons in 1962. This constitutes an increase of 82 per cent over the ten years with an average rate of increase of 8.7 per cent per year.

OVERALL USE OF BASIC PLANT NUTRIENTS NPK

The conversion of total imported fertilisers into the basic plant nutrients nitrogen (N), phosphoric acid (P_2O_5) and potash (K_2O) by weight is given in Table I. Fertiliser imports were classified into nitrogenous, phosphatic and potash groups, and each kind of fertiliser which constituted these groups was converted into its absolute N P K contents according to the standard composition of each fertiliser. The annual average ratio of consumption of the basic nutrient groups N, P_2O_5 , K_2O for the year from 1953 to 1962 was 5.5 : 2.7 : 1.7. There has, however, been a significant change in the use of these N, P_2O_5 , K_2O groups from the ratio of 5.7 : 2.8 : 1.5 in 1953 to 6.6 : 2.0 : 1.4 in 1962. Hence, there is evidence to indicate that there has been an increase in the consumption of nitrogenous fertilizers, a drop in the use of phosphoric acid and that the rate of use of potash has been constant. This conclusion is supported by the analysis of the use of each of these types of fertilizer as given below :—

(a) *Nitrogenous Fertilisers*

Nitrogenous fertilisers, which constitute the largest single group of fertilisers used, increased from 87,800 tons in 1953 to 182,500 tons in 1962, an increase of 105 per cent, over the past ten years. The average annual rate of this increase was 10 per cent. The nitrogenous fertilisers used in 1953 constituted 57 per cent of all the fertilisers used while in 1962 this percentage increased to 66.

The total quantity of nitrogen used in 1953 was 17,190 tons. This has increased to 36,230 tons in 1962, a rise of 108 per cent., over the ten-year period. The annual rate of increase of nitrogen consumption during this period was 10 per cent.

(b) *Phosphatic Fertilisers*

The use of phosphatic fertilisers increased from 42,605 tons in 1953 to 57,245 tons in 1962, an increase of 34.2 per cent. The average annual rate of increase of phosphatic fertilisers was 4.9 per cent. Phosphatic fertilisers constituted 28 per cent of the total fertiliser imports in 1953 but dropped to 20 per cent in 1962. There is therefore a downward trend in the use of phosphatic fertilisers in relation to total fertiliser consumption. Nitrogen appears to be displacing part of the phosphoric acid in overall fertiliser use.

The total quantity of phosphoric acid used in 1953 was 11,075 tons and this has increased to 15,500 tons in 1962. This indicates an increase of 38.6 per cent., the average annual rate of increase of phosphoric acid consumption over the ten-year period being 6.6 per cent.

(c) *Potash Fertilisers*

Potash fertilisers constitute the smallest group of imported fertilisers. Total potash fertiliser imports in 1953 were 23,005 tons and this has increased to 38,735 tons in 1962. This shows an increase of 68.3 per cent. in the use of potash fertilisers during the ten year period. All potash fertilisers constituted only 15 per cent, of the total fertiliser imports in 1953 while this percentage increased progressively to 19 in 1961. The percentage of potash fertilisers used in 1962 was, however, only 14. Despite this drop, the general trend indicates that the proportion of potash fertilisers which are used in Ceylon is fairly constant. In regard to potash, 11,300 tons were used in 1953. This figure increased to 19,300 tons in 1962, which means an increase of 70 per cent. The annual average rate of increase in the use of potash was 8.7 per cent.

FERTILISER USE ON CROPPED AGRICULTURAL LAND

Cropped agricultural land in Ceylon consists mainly of rice, coconut, rubber and tea. The other crops are minor export crops like cocoa, citronella, cinnamon and cardamoms, subsidiary crops on arable land like tobacco, chillies, onions, vegetables etc., and the *chena* crops. The amount of fertiliser used on minor export crops and subsidiary crops is very small. Fertiliser consumption in *chena* land is nil. Data regarding the small quantities of fertiliser applied on crops other than rice, coconut, rubber and tea are not available. Therefore, for the purpose of evaluating fertiliser use on agricultural land, it is assumed that the quantities of fertilisers used on minor export crops and upland subsidiary crops are negligible. Table 2 shows the breakdown of agricultural land under the main fertiliser consuming crops, tea, coconut, rubber and rice, as well as fertiliser use patterns in the years 1953 to 1962. It will be seen that the average fertiliser use on agricultural land as defined above on the basis of annual imports, was 101.7 lb. per acre of all fertilisers for the year 1953, and 159.9 lb. per acre in 1962. An increase of 57 per cent per acre is therefore indicated over the ten years.

A further analysis of the use of NPK fertilizers on agricultural land indicates that 58.2 lb./acre of nitrogen were used in 1953 while in 1962 this figure had increased to 104.8 lb. per acre. This shows an increase of 80 per cent. Similarly, 28.2 lb/acre of P_2O_5 were used in 1953 and this figure rose to 32.9 lb. per acre in 1962, an increase of 17 per cent. The figure for potash in 1953

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was 15.3 lb. per acre which increased to 22.2 lb./acre in 1962, an increase of 45 per cent. The use of NPK per acre of cropped agricultural land was 11.3 lb., 7.3 lb. and 7.50 lb. respectively, while in 1962 it increased to 23.7 lb. 10.2 lb. and 13.1 lb. respectively.

These figures provide an approximate index of fertiliser consumption per acre per annum on cropped agricultural land, as fertiliser use on crops other than tea, rubber, coconut and rice is insignificant.

FERTILISER USE ON TEA, COCONUT AND RUBBER

The only data available for studies of fertiliser use in the three main export crops of tea, rubber and coconut were furnished by the five firms dealing with fertiliser imports. Three of these firms handle nearly 85 per cent. of the total imports. They were in a position to provide detail figures of their supplies of fertilisers in terms of quantities issued to each crop as well as an average percentage of the NPK composition of their mixtures. The data supplied by the two other firms were not precise and certain assumptions have been made in regard to their supplies to each crop as well as the NPK composition of their mixtures. These assumptions are :—

- (i) that their supplies of fertilisers were equally distributed among the three crops ; and
- (ii) that their fertiliser compositions were similar to those of the big firms.

Subject to these assumptions, an analysis was made of fertiliser consumption patterns in the three main export crops. Table 3, 4 and 5 indicate the total supplies of fertilisers made to tea, rubber and coconut and the general pattern of fertiliser use by each of these crops.

(a) *Tea*

132, 620 tons were used on tea in 1958, giving a total fertiliser consumption of 518 lb. per acre. Total consumption has increased to 150,000 tons in 1962 with an average of 568 lb. of fertiliser per acre.

It is interesting to note that the use of nitrogen has increased from 65 lb. per acre in 1958 to 77 lb. per acre in 1962. It will be evident from Table 3 that there has been a significant upward trend in the use of nitrogen in tea.

27 lb. per acre of phosphoric acid were used in 1958. This figure declined to 23 lb. per acre in 1962. This decrease is significant and in fact confirms the observation made earlier that the rate of consumption of phosphoric acid has declined while the rate of nitrogen used has increased.

The consumption of potash indicates an application of 41 lb. per acre in 1958 compared with a higher figure of 48 lb. in 1962.

(b) Rubber

Rubber consumed 20,620 tons of fertilisers in 1958 at an average rate of 69 lb. per acre. In conformity with the general pattern of an upward trend in fertiliser use, these figures too have risen to 27,300 tons and 91 lb. per acre respectively in 1962.

The amounts of N, P₂O₅ and K₂O used were 6 lb., 7 lb. and 5 lb. per acre respectively in 1958 and these too have increased to 8 lb., 9 lb. and 6 lb. in 1962. Unlike in tea there is an upward trend in the use of phosphoric acid in rubber.

(c) Coconut

The total coconut acreage has been considered as 1.1 million acres due to the lack of precise data. This acreage, of course, includes plants in home gardens and miscellaneous small plots of varying performance.

Coconut has used 38,459 tons in 1958 with an average rate of consumption of 78 lb. per acre. As in the other two main export crops, coconut, too, has registered an increased consumption of fertiliser. 44,975 tons have been used in 1962 and the average rate of application in this year has risen to 92 lb. per acre. N, P₂O₅ and K₂O used per acre in 1958 was 6 lb., 6 lb. and 14 lb. respectively and these figures too have risen to 7 lb., 7 lb. and 16 lb. in 1962. Table 5 gives detailed figures of this analysis.

FERTILISER USE ON RICE

A comprehensive study of past patterns of fertiliser consumption in rice is not possible as detailed and accurate data regarding fertilisers applied on rice prior to 1960-61 are not available. Particulars of fertiliser consumption outside the Government Fertiliser Subsidy Scheme are not available even for the current year. Since the Government subsidy for fertilisers on rice is substantially high and is available to either the tenants or owners of well over 90 per cent. of the total rice acreage in Ceylon, it is assumed for purposes of this study that all the fertilisers used on paddy land have in fact been subsidised. The source of data for this study in regard to fertiliser application in rice production is, therefore, the Commissioner of Agrarian Services who handles the rice fertiliser subsidy scheme. The years 1960-61 and 1961-62 are considered for an analysis of the present pattern of fertiliser consumption in Ceylon. Before this analysis is attempted, it is necessary to determine when rice cultivation received an impetus for increased fertiliser use. While

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efforts were made since the outbreak of World War II to extend fertiliser application on rice, the results obtained were discouraging. The reasons for this failure are not far to seek. While technological information was forthcoming for the use of the Agricultural Extension Service, supporting facilities for the application of fertiliser, such as satisfactory distribution, were not available. It can now be stated with certainty that the dynamic force necessary for the extension of the use of fertilisers in rice was engendered by the institutional changes and land reform measures introduced by the Government in 1956. From this time onwards Government policies related to subsidies and institutional facilities: distribution through the Co-operatives was progressively refined and the pattern of fertiliser consumption in rice has now established an upward trend. There has also been a shift in rice production from subsistence levels to a market oriented pattern, as a direct consequence of the Guaranteed Price Scheme. These circumstances should ensure that the upward trend in fertiliser use in rice will not only be maintained but will also be accelerated. Table 6 indicates the quantities of fertilisers used by each district during the years 1960-61 and 1961-62, as well as the average use of fertilisers per acre during these years in each of the districts. It will be seen that the average in Ceylon in 1960-61 per cropped acre was 43 lb. and that it rose to 56 in 1961-62. The highest fertiliser consuming districts for 1960-61 were Kegalle with 98 lb., Kurunegala with 83 lb., Kandy with 74 lb. and Colombo with 72 lb. The lowest fertiliser consuming districts during the same year were Anuradhapura with 7 lb., Trincomalee with 10 lb., Kalutara with 11 lb. and Vavuniya with 12 lb.

The average rate of application in the Dry Zone during 1960-61 was 37 lb. while it was 52 lb. in the Wet Zone.

The corresponding figures for 1961-62 show a general increase in the use of fertilisers. The average for the Island has increased from 43 lb. to 56 lb. in 1961-62. The figure for the Wet Zone indicates an increase from 52 lb. to 67 lb. and that for the Dry Zone from 37 lb. to 48 lb. There was a significant increase in the consumption of fertilisers in the Matara district from 66 lb. to 89 lb., in the Mannar district from 63 lb. to 82 lb., in the Kalutara district from 11 to 44 lb. and in the Jaffna district from 37 to 72 lb. The highest fertiliser consuming districts in 1961-62 were Kandy and Matara with 89 lb. each and Colombo and Kurunegala with 83 lb. each and Mannar with 82 lb. The general pattern of fertiliser consumption in rice appears to conform to that of most other countries and there is a positive relationship between fertiliser rates of application and density of population of arable land⁴.

4. Lamer Mirko, *The World Fertiliser Economy—Chapter 6. Stanford University Press (1957)*.

FERTILISER USE ON UPLAND ARABLE LAND

A distressing feature of agriculture in Ceylon is the extremely poor rate of application of fertilisers on upland arable land. This is, of course, the direct result of the absence of a stable and intensive system of upland farming. The arable upland that is now being cultivated on a regular scale as distinct from the *chenas*, is confined generally to home gardens throughout the Island and to certain areas in the Jaffna, Vavuniya and Puttalam Districts, where sufficient-ground water is available for lift irrigation. It is significant that fertiliser application on arable upland is confined to such areas where sufficient irrigation is available. Considerable advances have in fact been made in developing techniques of cropping upland in the Dry Zone. However, the application of these techniques is hampered by a complex of socio-economic factors. Fertiliser use on these lands will not be an accomplished fact until systems of stable and diversified farming are developed. It can, however, be said that the strongest factor militating against such a development is the subsistence level of cultivation practised at present. Until and unless the present levels of subsistence farming develop into intensive methods of agriculture integrated with a well-developed marketing system, the prospects of fertiliser consumption on arable upland are not too promising.

No data are available on the application of fertilisers on arable upland even in areas like Jaffna, Vavuniya and Puttalam where such land is cultivated, In any event the use of fertilisers in these areas is significant in relation to overall fertiliser consumption in the Island.

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TABLE I

Import of Fertilisers from 1953 to 1962 (thousand tons)

Category	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
<i>Nitrogenous Fertilisers</i>	87.77	98.98	106.70	102.58	126.70	101.05	144.38	135.24	148.16	182.54
Percentage increase over preceding year	+60	+13	+8	-4	+24	-20	+43	-6	+10	+23
Percentage of total fertiliser imports	57	54	57	48	54	54	55	53	57	66
N content	17.19	19.52	21.18	20.58	25.56	20.43	29.48	27.29	29.58	36.23
Percentage increase of N over preceding year	+56.0	+13.6	+8.5	-2.8	+24.2	-20.0	+44.3	7.4	+8.4	+22.5
Percentage increase of N from 1953 to 1962	..	..	..	..	108	..	..	..	..	..
<i>Phosphatic Fertilisers</i>	42.60	52.80	51.63	63.41	68.35	51.34	73.94	78.58	63.17	57.24
Percentage increase over preceding year	+31	+24	-2	+23	+8	-25	+44	+6	-20	-9
Percentage of total fertiliser imports	28	29	28	30	29	27	28	31	24	20
P ₂ O ₅ content	11.08	13.98	12.62	15.69	15.95	11.83	19.34	21.26	17.14	15.50
Percentage increase of P ₂ O ₅ over preceding year	+29	+26	-10	+24	+2	-26	+63	+10	-19	-10
Percentage increase of P ₂ O ₅ from 1953 to 1962	..	..	..	..	40	..	..	..	..	..
<i>Potash Fertilisers</i>	23.01	35.38	27.84	47.49	39.74	35.58	43.90	42.00	48.22	38.74
Percentage increase over preceding year	+85	+32	-8	+71	-16	-10	+23	-4	+14	-20
Percentage of total fertiliser imports	15	17	15	22	17	19	17	16	19	14
K ₂ O content	11.32	14.98	13.67	23.57	19.68	17.76	21.80	20.96	23.97	19.33
Percentage increase of potash over preceding year	-9	+32	-9	+72	-17	-10	+23	-4	+14	-19
Percentage increase of potash from 1953 to 1962	..	..	..	..	71	..	..	..	..	..
<i>All Fertilisers—Total*</i>	153.39	182.17	186.16	213.49	234.80	187.98	261.84	256.14	258.56	278.52
Percentage increase over preceding year	+43	+19	+2	+15	+10	-20	+39	-2	+1	+7

*Source: Customs Returns

TABLE II

Fertiliser use on cropped agricultural land under tea, coconut, rubber and rice in 1953 and 1962 computed on the basis of total imports*

Crop	1953		1962		% increase over 10 years
Tea	..	574,250 acres	591,118 acres		3
Coconut	..	1,100,000 acres†	1,100,000	..†	—
Rubber	..	657,427 "	674,274 "		3
Rice	..	1,048,000 crop acres	1,536,000 crop acres		47
Total acreage..	..	3,379,677	3,901,392		15.6
Total fertiliser imports	..	153,390 tons	278,520 tons	.. (623,885,024 lb.)	82
<i>NPK Categories Used</i>					
N	..	87,672 "	182,535 "	.. (408,879,072 lb.)	108
P ₂ O ₅	..	42,609 "	57,249 "	.. (128,237,536 lb.)	40
K ₂ O	..	23,009 "	38,736 "	.. (86,768,416 lb.)	71
Fertiliser use (NPK) per crop acre	..		101.7 lb.	159.9 lb.	57
N used per acre	..		58.2 lb.	104.8 lb.	80
P ₂ O ₅ used per acre	..		28.2 lb.	32.9 lb.	17
K ₂ O used per acre	..		15.3 lb.	22.2 lb.	45

* A small percentage of total fertiliser imports has been used for subsidiary crops, vegetables, etc. When this is taken into account figures given above in regard to fertiliser use per crop acre will be slightly less.

† Estimated acreage. Exact acreage not available.

TABLE III

Fertilisers supplied by Fertiliser Firms to the Tea Industry from 1958 to 1962

	1958	1959	1960	1961	1962
Total supplied*					
tons	132,323 ¹	137,867	147,818	148,838	150,022
cwt.	2,646,460	2,757,380	2,956,360	2,976,760	3,000,440
lb.	296,403,520	308,826,560	331,112,320	333,397,120	336,049,280
Total acreage under Tea†	572,706	579,652	591,118	587,401	591,118
Total NPK fertilizers used per acre (lb.)	516	533	560	568	568
Total N supplied (lb.)	37,508,800	39,307,520	41,809,600	44,304,960	45,274,880
N used per acre (lb.)	65	68	71	75	77
Total P ₂ O ₅ supplied (lb.)	15,691,200	16,425,920	17,673,600	13,896,960	13,711,040
P ₂ O ₅ used per acre (lb.)	27	28	30	24	23
Total K ₂ O supplied (lb.)	23,609,600	23,994,880	25,341,120	28,047,040	28,483,840
K ₂ O used per acre	41	41	43	48	48

*Source: Messrs. Shaw Wallace & Hedges Ltd.

" Baur & Co. Ltd.

" Colombo Commercial Co. Ltd.

" Roberts Forage Works Ltd.

" Moosajees Ltd.

† Source: Administration Reports of the Tea Commissioner.

TABLE IV

Fertilisers supplied by Fertilizer Firms to the Rubber Industry from 1958 to 1962

	1958	1959	1960	1961	1962
Total supplied *					
tons	20,620 ..	25,074 ..	28,382 ..	26,646 ..	27,301
Cwt.	412,400 ..	501,480 ..	567,640 ..	532,920 ..	546,020
lb.	46,188,800 ..	56,165,760 ..	63,575,680 ..	59,687,040 ..	61,154,240
Total acreage under rubber†	664,836 ..	668,178 ..	668,948 ..	670,830 ..	674,274
Total NPK fertilizers supplied per acre (lb.)	69 ..	84 ..	95 ..	89 ..	91
Total N Supplied (lb.)	4,027,520 ..	5,001,920 ..	5,557,440 ..	5,344,640 ..	5,557,440
N used per acre (lb.)	6 ..	7 ..	8 ..	8 ..	8
Total P ₂ O ₅ supplied (lb)	4,744,320 ..	5,664,960 ..	6,529,600 ..	6,048,000 ..	5,971,840
P ₂ O ₅ used per acre (lb)	7 ..	8 ..	10 ..	9 ..	9
Total K ₂ O supplied	3,245,760 ..	3,839,360 ..	4,267,200 ..	4,135,040 ..	4,264,960
K ₂ O used per acre (lb.)	5 ..	6 ..	6 ..	6 ..	6

*Source: Messrs. Shaw Wallace & Hedges Ltd.

" Baur & Co. Ltd.

" Colombo Commercial Co. Ltd.

" Roberts Forage Works Ltd.

" Moosajees Ltd.

†Source: Administration Reports—Rubber Commissioner.

TABLE V

Fertilisers supplied by the Fertilizer Firms to the Coconut Industry from 1958 to 1962

	1958	1959	1960	1961	1962
Total supplied*					
tons	.. 38,459 ¹	.. 44,038	.. 45,104	.. 41,635	.. 44,976
cwt.	.. 769,780	.. 880,760	.. 902,080	.. 832,700	.. 899,520
lb.	.. 86,215,360	.. 98,645,120	.. 101,032,960	.. 93,262,400	.. 100,746,240
Total estimated acreage under coconut	.. 1,100,000	.. 1,100,000	.. 1,100,000	.. 1,100,000	.. 1,100,000
Total NPK fertilizers used per acre (lb.)	.. 78	.. 90	.. 92	.. 85	.. 92
Total N supplied (lb.)	.. 6,384,000	.. 7,291,200	.. 7,448,000	.. 6,901,440	.. 7,477,120
N used per acre (lb.)	.. 6	.. 7	.. 7	.. 6	.. 7
Total P ₂ O ₅ supplied (lb.)	.. 6,491,520	.. 7,492,800	.. 7,629,440	.. 7,006,720	.. 7,524,160
P ₂ O ₅ used per acre (lb.)	.. 6	.. 7	.. 7	.. 6	.. 7
Total K ₂ O supplied (lb.)	.. 15,003,520	.. 17,153,040	.. 17,615,360	.. 16,544,640	.. 17,931,200
K ₂ O used per acre (lb.)	.. 14	.. 16	.. 16	.. 15	.. 16

*Source: Messrs. Shaw Wallace & Hedges Ltd.

.. Baur & Co. Ltd.

.. Colombo Commercial Co. Ltd.

.. Roberts Forage Works Ltd.

.. Moosajeets Ltd.

TABLE VI

Subsidised fertilizers used on rice land in 1960-61 and 1961-62

District	1960/1961			1961/1962		
	Sown (M60/61 and Y 61) '000 acres*	Fertilizer used		Sown (M61/62 and Y 62) '000 acres†	Fertilizer used	
		Total '000 lb. ‡	per acre lb.		Total '000 lb.	per acre lb. ‡
<i>Wet Zone</i>						
Colombo ..	74.2	5331	72	75.5	6304	83
Kalutara ..	74.7	829	11	71.9	3165	44
Kandy ..	78.9	5871	74	76.7	6825	89
Matale ..	33.8	1777	53	36.1	1913	53
Nuwara Eliya ..	24.1	802	33	34.2	1223	51
Galle ..	78.9	4402	56	80.9	4836	60
Matara ..	76.8	5058	66	80.7	7142	89
Badulla ..	45.8	811	18	47.9	1432	30
Ratnapura ..	55.5	1373	25	50.8	1432	28
Kegalle ..	47.1	4621	98	47.6	5320	112
Total ..	589.8	30,930	52	592.3	39,592	67
<i>Dry Zone</i>						
Hambantota ..	66.0	2471	37	73.3	2811	38
Jaffna ..	74.0	2749	37	78.0	5607	72
Mannar ..	31.5	1987	63	34.3	2820	82
Vavuniya ..	48.1	600	12	55.1	1530	28
Batticaloa Amparai } ..	201.5	5065	25	192.7	7970	41
Trincomalee ..	57.0	569	10	56.7	786	14
Kurunegala ..	179.6	14896	83	202.6	16802	83
Puttalam ..	29.0	818	28	28.8	1055	37
Anuradhapura ..	117.2	856	7	133.3	1548	12
Polonnaruwa ..	76.1	2697	35	87.3	4747	54
Total ..	880.0	32,763	37	942.1	45,676	48
Ceylon ..	1472.0	63,695	43	1535.9	85,268	56

Source :

* Statistical Abstract—1962

† Statistical Abstract—1962 and Department of Census and Statistics.

‡ Figures for Districts, Administration Report of the Commissioner of Agrarian Services, 1961-62.