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Rothamsted Experimental Station Report for 1975 Part 2

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Use of Fertilisers in England and Wales, 1975

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B. M. Church (1976) *Use of Fertilisers in England and Wales, 1975 ;* Rothamsted Experimental Station Report For 1975 Part 2, pp 91 - 95 **- DOI: https://doi.org/10.23637/ERADOC-1-34505**

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Use of Fertilisers in England and Wales, 1975

B. M. CHURCH

The series of annual surveys of fertiliser use in England and Wales based on a representative country-wide sample of farms (Church & Webber, 1971) was continued in 1975 when 1290 farms were surveyed. As in previous years (Church, 1975), this work was done by ADAS soil scientists and representatives of the Fertiliser Manufacturers Association in collaboration with the Statistics Department, Rothamsted.

The 1975 results show that the recent increase in use of N on grassland, at about 7½% per year, has continued (Table 1). Less P and K were used in 1975 and the reduced use of these nutrients when costs, particularly for P, increased severely was helped by the introduction of more 'low PK' fertilisers. Resulting changes in nutrient ratios since 1973, particularly N:P_2O_5 on grassland, have been quite dramatic and draw attention to the need for adequate evidence on long term needs for P and K fertiliser under different grassland management regimes (Table 2).

TABLE 1

Fertiliser use on tillage, leys and permanent grass, 1971–75 (kg ha^{-1})

	Tillage			Leys			P.G.			All crops & grass		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
1971	90	54	59	98	38	25	51	28	15	78	41	39
1972	91	56	62	118	39	28	58	25	15	84	42	39
1973	89	54	60	124	42	31	59	24	15	84	41	38
1974	85	51	57	132	36	29	67	22	15	89	38	37
1975	87	47	52	136	33	27	72	19	15	93	34	33

TABLE 2

Fertiliser nutrient ratios on tillage, leys and permanent grass

	Tillage			Leys		P.G.	
	N	P_2O_5	K_2O	P_2O_5	K_2O	P_2O_5	K_2O
1971	1:	0·60	0·65	0·39	0·26	0·55	0·29
1973	1:	0·60	0·67	0·34	0·25	0·41	0·25
1975	1:	0·54	0·60	0·24	0·20	0·26	0·21

Estimates of average fertiliser use in 1975 and of the proportions of crop area getting different amounts of nutrients are given for individual crops in Tables 3–6 on the following pages.

References

CHURCH, B. M. & WEBBER, J. (1971) Fertiliser practice in England and Wales: a new series of surveys. *Journal of the Science of Food and Agriculture* **22**, 1–7.

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https://doi.org/10.23637/ERADOC-1-10

TABLE 3

Fertiliser use in England and Wales, 1975

	Fields	Hectares ('000)	Overall* (kg ha⁻¹)			% Area receiving				Actual* (kg ha⁻¹)		
			N	P_2O_5	K_2O	N	P	K	FYM	N	P_2O_5	K_2O
Spring wheat	234	90	85	33	31	94	82	79	16	90	41	39
Winter wheat	1742	843	93	39	33	92	75	68	13	101	52	48
Spring barley	3217	1565	77	37	36	96	92	89	18	80	40	41
Winter barley	375	173	91	43	41	97	88	86	14	93	48	48
Spring oats	293	97	59	36	31	87	87	84	17	67	41	37
Winter oats	156	51	73	46	41	96	87	84	18	76	52	49
Mixed corn	69	28	57	45	39	96	93	92	44	60	48	43
Rye	64	20	71	23	25	83	64	64	13	86	36	40
Maize	81	26	109	60	61	87	84	81	58	124	71	75
Early potatoes	95	29	168	179	230	95	95	95	37	177	189	243
Maincrop potatoes	348	115	170	174	239	97	97	97	47	175	180	246
Sugar beet	452	183	150	87	168	99	94	99	28	151	92	170
Swedes and turnips (stock)	228	50	64	72	56	86	83	81	49	74	88	70
Mangolds	61	5	124	89	123	94	94	94	65	133	95	131
Kale and cow cabbage	320	75	103	57	49	90	83	79	49	115	68	63
Rape for stockfeed	111	36	116	66	38	91	80	75	22	128	83	51
Beans for stockfeed	118	46	6	25	23	12	39	38	11	49	65	60
Other stockfeed	151	47	79	48	42	85	78	77	41	92	61	55
Peas for human consumption	151	81	7	23	27	20	41	42	4	36	56	63
Broad beans	6	3	40	36	57	60	60	60	0	66	60	95
Runner and French beans	29	9	133	76	81	89	90	89	9	150	84	92
Brussels sprouts	23	10	247	136	207	100	100	100	9	247	136	207
Cabbages	44	14	144	73	101	98	83	83	15	147	87	121
Cauliflower	22	8	187	96	127	80	72	72	19	233	132	175
Carrots	29	10	68	63	88	84	80	80	4	81	79	111
Onions	20	6	90	109	186	91	90	91	3	99	121	203
Small fruit	27	4	67	53	75	84	88	88	1	81	61	85
Top fruit	87	35	108	11	19	72	24	24	1	150	45	79
Hops	13	8	122	71	104	100	69	69	54	122	103	151
Oil seed rape	43	20	194	53	49	100	79	74	9	194	67	67
All tillage	8946	3810	87	47	52	90	82	79	19	97	57	65
One year leys	60	22	111	18	18	82	44	44	24	135	40	41
Two to seven year leys	4017	1968	136	33	27	86	60	57	38	159	54	47
Permanent grass	4067	3051	72	19	15	63	40	39	32	115	46	38
All crops and grass	17090	8851	93	34	33	80	63	60	28	117	54	55

* The average application of any fertiliser component over all fields, including those receiving none of that component, is termed 'overall'. The average, excluding fields with none of the component, is termed 'actual'.

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TABLE 4

Percentages of crop area getting different amounts of N (kg ha^{-1})

	Fields	0	>25	25—	50—	75—	100—	125—	150—	200—	250—	300—	400+
Spring wheat	234	6	0	6	21	31	23	10	3	0	0	0	0
Winter wheat	1742	8	3	4	10	24	27	17	6	1	0	0	0
Spring barley	3217	4	1	8	28	40	13	4	2	0	0	0	0
Winter barley	375	3	1	8	11	30	33	13	1	0	0	0	0
Spring oats	293	13	3	14	37	21	7	5	0	0	0	0	0
Winter oats	156	4	4	13	23	38	16	3	0	0	0	0	0
Mixed corn	69	4	5	32	19	34	5	0	0	0	0	0	0
Rye	64	17	7	13	14	20	4	25	0	0	0	0	0
Maize	81	13	0	1	6	11	24	21	21	4	0	0	0
Early potatoes	95	5	0	0	0	0	14	7	48	19	7	0	0
Maincrop potatoes	348	3	0	0	0	4	6	9	55	18	3	1	0
Sugar beet	452	1	0	1	2	5	13	27	42	7	3	0	0
Swedes and turnips (stock)	228	14	1	21	27	16	11	6	3	0	1	0	0
Mangolds	61	6	0	1	5	18	20	14	25	8	2	0	0
Kale and cow cabbage	320	10	0	5	9	18	18	19	14	5	1	0	0
Rape for stockfeed	111	9	0	5	16	20	5	10	15	19	1	0	0
Beans for stockfeed	118	88	5	2	4	0	0	0	1	0	0	0	0
Other stockfeed	151	15	2	15	14	17	14	14	6	2	1	0	0
Peas for human consumption	151	80	4	12	2	0	0	0	0	0	0	0	0
Broad beans	6	40	0	0	55	5	0	0	0	0	0	0	0
Runner and French beans	29	11	9	1	5	5	0	6	41	23	0	0	0
Brussels sprouts	23	0	0	1	0	3	1	8	30	4	17	36	0
Cabbages	44	2	0	5	16	15	18	9	9	9	8	9	0
Cauliflower	22	20	0	0	6	3	8	5	26	0	8	7	17
Carrots	29	16	0	28	12	12	9	12	11	0	0	0	0
Onions	20	9	0	2	13	34	23	6	13	0	0	0	0
Small fruit	27	16	0	36	13	1	2	27	4	2	0	0	0
Top fruit	87	28	0	1	6	1	13	8	35	5	0	0	1
Hops	13	0	0	36	0	2	0	25	37	0	0	0	0
Oil seed rape	43	0	0	0	3	0	0	12	44	28	12	0	0
All tillage	8946	10	2	7	18	27	16	10	8	2	1	0	0
One year leys	60	18	0	3	30	5	3	17	7	5	11	2	1
Two to seven year leys	4017	14	1	7	13	12	6	8	13	7	9	7	2
Permanent grass	4067	37	1	9	14	13	4	6	7	3	3	3	1
All crops and grass	17090	20	1	8	15	19	10	8	9	3	3	3	1

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TABLE 5

Percentages of crop area getting different amounts of P_2O_5 (kg ha^{-1})

	Fields	0	<25	25—	50—	75—	100—	125—	150—	200—	250—	300—	400+
Spring wheat	234	18	5	58	17	2	0	0	1	0	0	0	0
Winter wheat	1742	25	2	34	33	5	0	0	0	0	0	0	0
Spring barley	3217	8	6	69	14	1	0	0	0	0	0	0	0
Winter barley	375	12	3	52	26	5	2	0	0	0	0	0	0
Spring oats	293	13	11	62	10	1	0	0	2	1	0	0	0
Winter oats	156	13	2	40	37	3	5	1	0	1	0	0	0
Mixed corn	69	7	3	62	13	13	0	2	0	0	0	0	0
Rye	64	36	30	21	5	5	2	0	0	0	0	0	0
Maize	81	16	0	6	40	30	7	1	1	0	0	0	0
Early potatoes	95	5	0	0	0	0	10	6	45	17	12	3	0
Maincrop potatoes	348	3	1	1	0	4	6	9	47	25	4	1	0
Sugar beet	452	6	0	3	26	31	17	7	8	1	0	0	0
Swedes and turnips (stock)	228	17	10	20	13	14	7	8	5	2	1	2	1
Mangolds	61	6	0	10	18	35	9	6	11	2	1	1	0
Kale and cow cabbage	320	17	2	23	33	13	5	3	4	0	0	0	0
Rape for stockfeed	111	20	0	28	30	5	2	2	6	3	3	2	0
Beans for stockfeed	118	61	1	17	6	7	4	0	4	0	0	0	0
Other stockfeed	151	22	7	27	29	6	4	2	2	0	0	2	0
Peas for human consumption	151	59	2	6	27	5	0	0	0	0	0	0	0
Broad beans	6	40	0	11	49	0	0	0	0	0	0	0	0
Runner and French beans	29	10	8	10	6	32	8	23	2	0	0	0	0
Brussels sprouts	23	0	3	1	7	19	8	7	53	3	0	0	0
Cabbages	44	17	0	20	2	20	20	16	4	0	0	0	0
Cauliflower	22	28	0	6	12	14	0	8	20	10	1	1	0
Carrots	29	20	0	28	9	18	13	2	10	0	0	0	0
Onions	20	10	0	0	2	32	21	2	26	6	0	0	0
Small fruit	27	12	2	18	56	8	2	0	2	0	0	0	0
Top fruit	87	76	12	4	1	7	0	0	0	0	0	0	0
Hops	13	31	0	5	30	3	9	13	0	8	0	0	0
Oil seed rape	43	21	0	18	33	19	6	3	0	0	0	0	0
All tillage	8946	18	4	45	20	5	2	1	3	1	0	0	0
One year leys	60	56	7	29	4	4	0	0	0	0	0	0	0
Two to seven year leys	4017	40	9	31	10	3	2	1	3	1	0	0	0
Permanent grass	4067	60	9	22	4	2	1	0	2	0	0	0	0
All crops and grass	17090	37	7	34	12	4	2	1	3	1	0	0	0

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TABLE 6

Percentages of crop area getting different amounts of K_2O (kg ha^{-1})

	Fields	0	<25	25—	50—	75—	100—	125—	150—	200—	250—	300—	400+
Spring wheat	234	21	6	60	12	1	0	0	0	0	0	0	0
Winter wheat	1742	32	2	38	24	4	0	0	0	0	0	0	0
Spring barley	3217	11	5	65	16	2	0	0	0	0	0	0	0
Winter barley	375	14	3	52	25	6	0	0	0	0	0	0	0
Spring oats	293	16	9	64	11	0	0	0	0	0	0	0	0
Winter oats	156	16	2	57	18	2	5	0	0	0	0	0	0
Mixed corn	69	8	6	67	9	9	0	0	0	0	0	0	0
Rye	64	36	12	40	7	5	0	0	0	0	0	0	0
Maize	81	19	0	7	38	25	5	1	5	0	0	20	0
Early potatoes	95	5	0	0	0	0	9	0	14	17	36	17	2
Maincrop potatoes	348	3	1	0	1	1	1	1	19	22	33	1	0
Sugar beet	452	1	0	1	4	12	9	6	33	22	9	1	0
Swedes and turnips (stock)	228	19	9	21	19	11	12	4	3	2	0	0	0
Mangolds	61	6	0	10	11	16	7	6	26	15	0	2	0
Kale and cow cabbage	320	21	1	25	32	12	4	1	1	2	0	0	0
Rape for stockfeed	111	25	1	34	34	4	1	1	0	0	0	0	0
Beans for stockfeed	118	62	1	16	7	8	4	2	1	0	0	0	0
Other stockfeed	151	23	8	31	25	3	7	2	2	0	0	0	0
Peas for human consumption	151	58	0	7	24	8	1	0	1	0	0	0	0
Broad beans	6	40	0	7	0	0	54	0	0	0	0	0	0
Runner and French beans	29	11	8	0	14	31	9	24	0	0	2	0	0
Brussels sprouts	23	0	3	0	7	0	0	5	24	28	29	3	0
Cabbages	44	17	0	18	5	4	13	16	23	3	1	0	0
Cauliflower	22	28	0	6	5	0	10	9	21	3	8	10	0
Carrots	29	20	0	12	12	28	8	0	2	13	6	0	0
Onions	20	9	0	1	2	0	12	0	31	2	32	11	0
Small fruit	27	12	0	14	33	8	23	3	6	2	0	0	0
Top fruit	87	76	0	0	12	4	7	0	0	0	0	0	0
Hops	13	31	0	0	9	0	0	28	20	12	0	0	0
Oil seed rape	43	26	0	15	33	21	0	5	0	0	0	0	0
All tillage	8946	21	3	44	17	4	2	1	3	2	2	1	0
One year leys	60	56	5	27	10	3	0	0	0	0	0	0	0
Two to seven year leys	4017	43	8	29	12	4	2	1	1	0	0	0	0
Permanent grass	4067	61	9	21	5	2	1	0	0	0	0	0	0
All crops and grass	17090	40	6	33	12	3	2	1	1	1	1	0	0

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