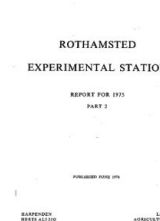


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Use of Fertilisers in England and Wales, 1975

B. M. Church

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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:P₂O₅ 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 ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
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 ₂ O ₅	K ₂ O	P ₂ O ₅	K ₂ O	P ₂ O ₅	K ₂ O
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.
 CHURCH, B. M. (1975) Use of fertilisers in England and Wales, 1974. *Rothamsted Experimental Station. Report for 1974, Part 2*, 195-199.

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TABLE 3
Fertiliser use in England and Wales, 1975

Fields	Hectares ('000)	Overall* (kg ha ⁻¹)				% Area receiving				Actual* (kg ha ⁻¹)		
		N	P ₂ O ₅	K ₂ O	FYM	N	P	K	FYM	N	P ₂ O ₅	K ₂ O
Spring wheat	234	85	33	31	16	94	82	79	16	90	41	39
Winter wheat	1742	93	39	33	13	92	75	68	13	101	52	48
Spring barley	3217	77	37	36	18	96	92	89	18	80	40	41
Winter barley	375	91	43	41	14	97	88	86	14	93	48	48
Spring oats	293	59	36	31	17	87	87	84	17	67	41	37
Winter oats	156	51	73	46	18	96	87	84	18	76	52	49
Mixed corn	69	28	45	39	44	96	93	92	44	60	48	43
Rye	64	20	23	25	13	83	64	64	13	86	36	40
Maize	81	71	23	25	58	87	84	81	58	124	71	75
Early potatoes	29	109	60	61	37	95	95	95	37	177	189	243
Maincrop potatoes	348	168	179	230	47	97	97	97	47	175	180	246
Sugar beet	452	150	87	168	28	99	94	99	28	151	92	170
Swedes and turnips (stock)	228	64	72	56	49	86	83	81	49	74	88	70
Mangolds	61	124	89	123	65	94	94	94	65	133	95	131
Kale and cow cabbage	320	75	57	49	49	90	83	79	49	115	68	63
Rape for stockfeed	111	116	66	38	22	91	80	75	22	128	83	51
Beans for stockfeed	118	6	25	23	11	12	39	38	11	49	65	60
Other stockfeed	151	47	48	42	41	85	78	77	41	92	61	55
Peas for human consumption	151	7	23	27	4	20	41	42	4	36	56	63
Broad beans	6	40	36	57	0	60	60	60	0	66	60	95
Runner and French beans	29	133	76	81	9	89	90	89	9	150	84	92
Brussels sprouts	23	247	136	207	9	100	100	100	9	247	136	207
Cabbages	44	144	73	101	15	98	83	83	15	147	87	121
Cauliflower	22	187	96	127	19	80	72	72	19	233	132	175
Carrots	29	8	63	88	4	84	80	80	4	81	79	111
Onions	20	6	109	186	3	91	90	91	3	99	121	203
Small fruit	27	4	53	75	1	84	88	88	1	81	61	85
Top fruit	87	35	11	19	1	72	24	24	1	150	45	79
Hops	13	8	71	104	54	100	69	69	54	122	103	151
Oil seed rape	43	194	53	49	28	100	79	74	28	194	67	67
All tillage	8946	87	47	52	19	90	82	79	19	97	57	65
One year leys	60	111	18	18	24	82	44	44	24	135	40	41
Two to seven year leys	4017	136	33	27	38	86	60	57	38	159	54	47
Permanent grass	4067	72	19	15	32	63	40	39	32	115	46	38
All crops and grass	17090	93	34	33	28	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	6	0	6	21	31	23	10	3	0	0	0	0
Winter wheat	8	3	4	10	24	27	17	6	1	0	0	0
Spring barley	4	1	8	28	40	13	4	2	0	0	0	0
Winter barley	3	1	8	11	30	33	13	1	0	0	0	0
Spring oats	13	3	14	37	21	7	5	0	0	0	0	0
Winter oats	4	4	13	23	38	16	3	0	0	0	0	0
Mixed corn	69	4	32	19	34	5	0	0	0	0	0	0
Rye	17	7	13	14	20	4	25	0	0	0	0	0
Maize	81	0	1	6	11	24	21	21	4	0	0	0
Early potatoes	5	0	0	0	0	14	7	48	19	7	0	0
Maincrop potatoes	3	0	0	0	4	6	9	55	18	3	1	0
Sugar beet	1	0	1	2	5	13	27	42	7	3	0	0
Swedes and turnips (stock)	14	1	21	27	16	11	6	3	0	1	0	0
Mangolds	6	0	1	5	18	20	14	25	8	2	0	0
Kale and cow cabbage	10	0	5	9	18	18	19	14	5	1	0	0
Rape for stockfeed	111	0	5	16	20	5	10	15	19	1	0	0
Beans for stockfeed	88	5	2	4	0	0	0	1	0	0	0	0
Other stockfeed	15	2	15	14	17	14	14	6	2	1	0	0
Peas for human consumption	151	4	12	2	0	0	0	0	0	0	0	0
Broad beans	6	0	0	55	5	0	0	0	0	0	0	0
Runner and French beans	29	9	1	5	5	0	6	41	23	0	0	0
Brussels sprouts	23	0	1	0	3	1	8	30	4	17	36	0
Cabbages	44	0	5	16	15	18	9	9	9	8	9	0
Cauliflower	22	0	0	6	3	8	5	26	0	8	7	17
Carrots	29	0	28	12	12	9	12	11	0	0	0	0
Onions	20	0	2	13	34	23	6	13	0	0	0	0
Small fruit	27	0	36	13	1	2	27	4	2	0	0	0
Top fruit	87	0	1	6	1	13	8	35	5	0	0	1
Hops	13	0	36	0	2	0	25	37	0	0	0	0
Oil seed rape	43	0	0	3	0	0	12	44	28	12	0	0
All tillage	8946	2	7	18	27	16	10	8	2	1	0	0
One year leys	60	0	3	30	5	3	17	7	5	11	2	1
Two to seven year leys	4017	1	7	13	12	6	8	13	7	9	7	2
Permanent grass	4067	1	9	14	13	4	6	7	3	3	3	1
All crops and grass	17090	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	36	3	62	13	13	0	2	0	0	0	0	0
Rye	64	16	0	21	5	5	2	0	0	0	0	0	0
Maize	81	5	0	6	40	30	7	1	1	0	0	0	0
Early potatoes	95	3	1	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	21	6	60	12	1	0	0	0	0	0	0	0
Winter wheat	32	2	38	24	4	0	0	0	0	0	0	0
Spring barley	11	5	65	16	2	0	0	0	0	0	0	0
Winter barley	375	3	52	25	6	0	0	0	0	0	0	0
Spring oats	293	9	64	11	0	0	0	0	0	0	0	0
Winter oats	156	2	57	18	2	5	0	0	0	0	0	0
Mixed corn	69	6	67	9	9	0	0	0	0	0	0	0
Rye	64	12	40	7	5	0	0	0	0	0	0	0
Maize	81	0	7	38	25	5	1	5	0	0	0	0
Early potatoes	95	0	0	0	0	9	0	14	17	36	20	0
Maincrop potatoes	348	1	0	1	1	1	1	19	22	33	17	2
Sugar beet	452	0	1	4	12	9	6	33	22	9	1	0
Swedes and turnips (stock)	228	9	21	19	11	12	4	3	2	0	0	0
Mangolds	61	0	10	11	16	7	6	26	15	0	2	0
Kale and cow cabbage	320	1	25	32	12	4	1	1	2	0	0	0
Rape for stockfeed	111	1	34	34	4	1	1	0	0	0	0	0
Beans for stockfeed	118	1	16	7	8	4	2	1	0	0	0	0
Other stockfeed	151	8	31	25	3	7	2	2	0	0	0	0
Peas for human consumption	151	0	7	24	8	1	0	1	0	0	0	0
Broad beans	6	0	0	0	0	54	0	0	0	0	0	0
Runner and French beans	29	8	0	14	31	9	24	0	0	2	0	0
Brussels sprouts	23	3	0	7	0	0	5	24	28	29	3	0
Cabbages	44	0	18	5	4	13	16	23	3	1	0	0
Cauliflower	22	0	6	5	0	10	9	21	3	8	10	0
Carrots	29	0	12	12	28	8	0	2	13	6	0	0
Onions	20	0	1	2	0	12	0	31	2	32	11	0
Small fruit	27	0	14	33	8	23	3	6	2	0	0	0
Top fruit	87	0	0	12	4	7	0	0	0	0	0	0
Hops	13	0	0	9	0	0	28	20	12	0	0	0
Oil seed rape	43	0	15	33	21	0	5	0	0	0	0	0
All tillage	8946	3	44	17	4	2	1	3	2	2	1	0
One year leys	60	5	27	10	3	0	0	0	0	0	0	0
Two to seven year leys	4017	8	29	12	4	2	1	1	0	0	0	0
Permanent grass	4067	9	21	5	2	1	0	0	0	0	0	0
All crops and grass	17090	6	33	12	3	2	1	1	1	1	0	0