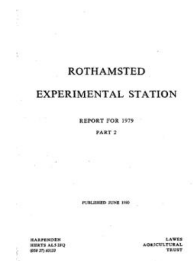


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Use of Fertilisers in England and Wales, 1979

B. M. Church

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Use of Fertilisers in England and Wales, 1979

B. M. CHURCH

During 1979 the series of annual surveys, done by staff of the ADAS Regional Soil Scientists in collaboration with representatives of the Fertiliser Manufacturers' Association and Rothamsted, was continued (Church & Lewis, 1977). This report summarises the main results based on a representative sample of 1340 farms in England and Wales.

Estimates of average fertiliser use on individual crops and of the proportions of crop area getting different amounts of nutrients in 1979 are given in Tables 3-6, and Table 7 gives information on fertiliser practice on grassland classified by the number of years for which it had been seeded down.

Over the last 2 years there has been little change in use of P and K per ha crops and grass but use of N per ha has increased by about a tenth on the area under tillage crops and on grassland. All this increase has been in the form of 'straight' N fertiliser (Table 1).

TABLE 1
Fertiliser use on tillage crops and grassland (kg ha⁻¹) 1977-79

	Tillage crops			Grassland			All crops and grass		
	1977	1978	1979	1977	1978	1979	1977	1978	1979
N straight	48	54	67	78	75	80	63	65	76
compound	52	51	46	42	48	47	48	49	45
total	100	105	113	120	123	127	111	114	121
P ₂ O ₅	49	51	49	26	28	27	37	39	38
K ₂ O	56	56	53	23	25	27	39	41	40

TABLE 2
Fertiliser use on winter wheat and spring barley (kg ha⁻¹) 1976-79

	Winter wheat				Spring barley			
	1976	1977	1978	1979	1976	1977	1978	1979
N straight	85	96	106	117	17	22	21	26
compound	17	19	19	18	61	60	62	62
total	102	115	125	135	78	82	83	88
P ₂ O ₅	42	40	44	46	38	36	38	37
K ₂ O	33	33	37	38	38	37	39	39

On tillage crops, use of straight N was up by 40% since 1977, but rather less N was applied in compounds in 1979. Much of the increase in use of straight N was due to an increase in the proportion of the cereal area which was winter sown from about 44% in 1977 to almost 60% in 1979. Use of N per ha on winter cereals also continued to increase and, for winter wheat, averaged 135 kg ha⁻¹ in 1979 of which 117 kg ha⁻¹ was straight N (Table 2).

REFERENCE

- CHURCH, B. M. & LEWIS, D. A. (1977) Fertiliser use on farm crops in England and Wales: Information from the Survey of Fertiliser Practice 1942-1976. *Outlook on Agriculture* 9, 186-193.

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TABLE 3
Fertiliser use in England and Wales, 1979

Fields	Hectares ('000)	Overall * (kg ha ⁻¹)			% Area receiving			Actual* (kg ha ⁻¹)		
		N	P ₂ O ₅	K ₂ O	N	P	K	N	P ₂ O ₅	K ₂ O
Spring wheat	26	86	25	27	84	75	71	102	34	38
Winter wheat	1218	134	46	38	98	86	75	137	53	50
Spring barley	1156	88	37	39	98	95	93	90	39	42
Winter barley	490	114	49	44	99	95	88	115	51	50
Spring oats	133	68	32	32	91	89	87	75	36	37
Winter oats	51	88	52	47	96	92	87	91	56	53
Mixed corn	5	49	46	44	96	96	96	51	47	46
Maize	8	103	40	62	97	77	82	106	52	76
Early potatoes	18	170	179	218	97	97	97	175	184	224
Maincrop potatoes	363	193	195	257	99	99	99	196	198	260
Sugar beet	173	150	69	157	96	93	95	157	74	166
Swedes (stock)	17	54	108	76	90	94	90	60	115	84
Turnips (stock)	87	81	67	58	98	83	81	83	80	71
Mangolds	4	106	86	122	89	91	89	120	94	138
Kale and cow cabbage	39	120	51	58	97	90	90	124	57	65
Rape for stockfeed	20	105	65	37	93	89	83	113	73	45
Beans for stockfeed	39	9	32	27	15	52	48	61	61	56
Other stockfeed	22	110	56	67	94	84	84	117	67	80
Peas for human consumption	97	8	32	30	24	48	48	33	67	62
Broad beans	4	1	36	31	1	57	55	71	63	56
Runner and French beans	8	132	71	76	91	85	85	145	83	90
Brussels sprouts	7	170	83	149	88	97	97	193	85	154
Cabbage	7	139	75	121	95	84	85	146	90	142
Cauliflower	8	194	85	191	98	93	93	199	91	204
Onions	2	121	105	155	93	85	85	130	123	182
Small fruit	7	72	45	97	80	60	83	91	76	117
Top fruit	33	96	15	44	85	44	52	113	34	84
Hops	4	188	76	171	94	93	96	200	82	179
Oilseed rape	84	225	53	36	100	94	60	226	56	60
All tillage	3783	113	49	53	94	89	83	120	56	64
1 year leys	11	113	40	28	84	62	60	135	65	47
2-7 year leys	1541	173	33	37	94	70	71	185	48	52
Permanent grass	2346	99	23	20	76	53	51	130	43	40
All crops and grass	7681	121	38	40	88	74	71	136	51	56

* The average application of any fertiliser component over all fields including those receiving none 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	16	1	2	10	32	17	11	9	2	0	0	0
Winter wheat	2	1	1	5	8	16	29	33	3	0	0	0
Spring barley	2	1	5	19	38	22	8	5	0	0	0	0
Winter barley	1	1	2	8	17	31	24	15	1	0	0	0
Spring oats	9	2	11	30	33	6	5	3	0	0	0	0
Winter oats	4	2	9	17	29	24	12	3	0	0	0	0
Mixed corn	4	10	33	34	17	2	0	0	0	0	0	0
Maize	3	0	0	5	34	34	7	15	2	0	0	0
Early potatoes	3	0	0	0	11	12	11	31	19	9	4	0
Maincrop potatoes	1	1	0	2	3	2	5	46	27	9	5	0
Sugar beet	4	0	1	0	2	9	32	37	9	3	1	0
Swedes (stock)	10	7	32	22	17	7	3	2	0	0	0	0
Turnips (stock)	2	5	13	23	27	12	12	3	2	0	0	0
Mangolds	11	5	0	14	6	11	21	31	1	0	0	0
Kale and cow cabbage	3	0	3	10	19	18	21	18	5	0	2	0
Rape for stockfeed	7	0	5	31	26	8	4	2	0	16	0	0
Beans for stockfeed	85	7	3	1	1	0	0	0	3	0	0	0
Other stockfeed	6	4	8	15	28	3	10	10	12	0	5	0
Peas for human consumption	182	8	15	1	1	0	0	0	0	0	0	0
Broad beans	20	0	0	0	1	0	0	0	0	0	0	0
Runner and French beans	43	0	4	2	17	0	15	41	13	0	0	0
Brussels sprouts	36	0	0	23	0	2	0	26	8	10	18	1
Cabbage	53	0	12	24	3	14	0	16	11	10	4	2
Cauliflower	63	0	0	7	16	1	3	19	22	17	14	0
Onions	30	0	0	1	26	30	9	11	16	0	0	0
Small fruit	82	2	16	19	18	6	2	10	3	3	0	0
Top fruit	168	2	2	21	13	7	19	18	1	3	0	0
Hops	20	0	0	0	1	1	18	25	42	0	8	0
Oilseed rape	146	0	0	12	7	0	2	8	11	48	12	0
All tillage	8707	6	3	11	19	18	18	18	3	2	1	0
1 year leys	40	3	5	5	21	1	17	18	7	3	3	0
2-7 year leys	3181	6	6	11	11	6	10	14	10	9	12	5
Permanent grass	3385	24	0	16	13	6	8	8	6	3	4	2
All crops and grass	15313	12	1	12	15	12	13	14	5	4	4	2

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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	25	12	56	6	1	0	0	0	0	0	0	0
Winter wheat	14	3	31	44	7	1	1	0	0	0	0	0
Spring barley	5	7	68	19	1	0	0	0	0	0	0	0
Winter barley	5	5	31	51	6	0	0	0	0	0	0	0
Spring oats	11	10	67	10	1	0	0	0	0	0	0	0
Winter oats	8	5	29	46	2	3	0	0	0	0	0	0
Mixed corn	22	4	42	25	11	2	0	0	0	0	0	0
Maize	23	0	19	47	10	0	0	0	0	0	0	0
Early potatoes	3	0	1	0	2	16	8	38	19	7	2	4
Maincrop potatoes	1	2	0	1	2	5	5	41	26	14	3	0
Sugar beet	7	1	12	41	23	11	3	2	1	0	0	0
Swedes (stock)	6	8	15	7	16	15	8	8	12	2	3	0
Turnips (stock)	17	4	27	19	8	9	5	6	4	2	1	0
Mangolds	9	5	20	22	9	9	1	19	6	1	0	0
Kale and cow cabbage	10	4	34	27	19	3	3	0	0	0	0	0
Rape for stockfeed	11	6	31	31	4	0	4	2	9	1	1	0
Beans for stockfeed	48	1	23	18	0	5	0	4	1	0	0	0
Other stockfeed	16	4	40	17	12	4	1	1	5	0	0	0
Peas for human consumption	52	4	10	18	2	13	0	1	0	0	0	0
Broad beans	20	0	3	37	17	0	0	0	0	0	0	0
Runner and French beans	43	0	8	15	42	18	2	0	0	0	0	0
Brussels sprouts	36	3	4	2	31	25	6	3	2	2	0	0
Cabbage	16	0	7	6	43	20	4	2	2	0	0	0
Cauliflower	63	7	0	17	44	21	5	3	2	0	0	0
Onions	30	0	7	8	6	29	6	24	4	0	0	0
Small fruit	82	5	14	18	3	13	6	2	0	0	0	0
Top fruit	168	56	22	4	1	2	0	0	0	0	0	0
Hops	20	7	11	48	10	2	12	0	9	0	0	0
Oilseed rape	146	6	8	80	4	1	0	0	0	0	0	0
All tillage	8707	11	39	33	5	2	1	2	1	0	0	0
1 year leys	40	38	36	8	3	6	1	4	2	0	0	0
2-7 year leys	3181	30	34	15	4	1	1	1	1	0	0	0
Permanent grass	3385	47	16	7	2	2	1	1	1	0	0	0
All crops and grass	15313	26	10	21	4	2	1	1	1	0	0	0

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TABLE 6
Percentages of crop area getting different amounts of K_2O ($kg\ ha^{-1}$)

	0	<25	25-	50-	75-	100-	125-	150-	200-	250-	300-	400+
Spring wheat	29	10	45	15	1	0	0	0	0	0	0	0
Winter wheat	25	2	37	30	5	1	0	0	0	0	0	0
Spring barley	7	4	63	24	2	0	0	0	0	0	0	0
Winter barley	1013	2	41	39	4	2	0	0	0	0	0	0
Spring oats	133	4	71	12	1	0	0	0	0	0	0	0
Winter oats	165	6	38	32	4	7	0	0	0	0	0	0
Mixed corn	22	4	62	25	6	0	0	0	0	0	0	0
Maize	27	0	1	47	16	5	12	0	0	0	0	0
Early potatoes	82	0	0	0	0	22	7	10	19	12	22	5
Maincrop potatoes	363	1	2	0	0	1	1	12	20	34	27	2
Sugar beet	395	5	1	5	8	14	8	24	22	8	2	0
Sweedes (stock)	96	10	18	9	31	15	5	8	2	0	0	0
Turnips (stock)	87	19	4	27	10	12	3	4	0	0	0	0
Mangolds	38	11	4	9	6	16	3	36	3	8	0	0
Kale and cow cabbage	188	10	3	27	14	3	10	2	0	0	0	0
Rape for stockfeed	76	17	6	27	6	1	0	0	0	0	0	0
Beans for stockfeed	92	52	3	21	3	5	0	2	1	0	0	0
Other stockfeed	81	16	2	19	8	2	3	1	5	1	4	0
Peas for human consumption	182	1	10	21	14	1	0	1	0	0	0	0
Broad beans	20	0	2	52	1	0	0	0	0	0	0	0
Runner and French beans	43	0	0	9	50	22	2	2	0	0	0	0
Brussels sprouts	36	3	0	2	2	13	3	23	20	0	12	0
Cabbage	53	15	0	1	7	31	7	26	4	2	6	0
Cauliflower	63	7	0	1	1	0	12	31	25	17	6	0
Onions	30	15	0	2	9	13	4	34	5	2	15	0
Small fruit	82	17	0	1	17	5	29	10	2	4	0	0
Top fruit	168	48	1	10	15	10	3	4	0	0	0	0
Hops	20	4	0	9	2	1	6	57	19	0	2	0
Oilseed rape	146	40	1	48	5	0	0	0	0	0	0	0
All tillage	8707	17	3	26	5	2	1	2	2	1	1	0
1 year leys	40	6	35	8	3	7	0	0	0	0	0	0
2-7 year leys	3181	29	10	14	8	5	2	1	0	0	0	0
Permanent grass	3385	49	14	8	2	1	0	0	0	0	0	0
All crops and grass	15313	29	8	18	5	3	1	1	1	1	1	0

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TABLE 7
Fertiliser use on grassland by years since seeded

	Fields	Hectares ('000)	Overall* (kg ha ⁻¹)			% Area receiving			Actual* (kg ha ⁻¹)		
			N	P ₂ O ₅	K ₂ O	N	P	K	N	P ₂ O ₅	K ₂ O
1 year leys	40	11	113	40	28	84	62	60	135	65	47
Other grassland											
1st year	632	228	161	42	37	96	73	70	169	58	53
2nd year	614	248	185	39	40	95	72	73	194	53	55
1 or 2 years	1246	476	174	40	39	95	73	72	182	56	54
3rd year	625	342	189	30	39	97	69	71	196	43	55
4th year	447	253	169	31	34	93	68	70	182	45	49
5th year	352	194	177	32	36	94	71	72	188	45	50
3-5 years	1424	789	180	31	37	95	69	71	190	44	52
1-5 years	2670	1265	177	34	37	95	71	71	187	49	53
6-7 years	408	220	154	31	36	88	71	72	175	43	51
Over 5 years	3879	2618	104	23	22	77	54	53	135	43	41
1-7 years	3078	1485	174	34	37	94	71	71	185	48	52
Over 7 years	3471	2398	100	23	20	76	53	51	131	43	40
All grassland	6589	3894	128	27	27	83	60	59	154	45	46

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