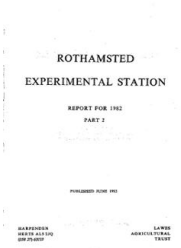
ROTHAMSTED RESEARCH

# Rothamsted Experimental Station Report for 1982 Part 2

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## Use of Fertilizers in England and Wales, 1982

### B. M. Church

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# Use of fertilizers in England and Wales, 1982

B. M. CHURCH

Continuing the series of annual surveys done by staff of the ADAS Regional Soil Scientists, with representatives of the Fertiliser Manufacturers' Association and Rothamsted (Church and Lewis, 1977), a random sample of 1350 farms in England and Wales was surveyed during 1982. The survey estimates show small increases between 1981 and 1982 in use of N and P per hectare crops and grass, with a proportionately somewhat larger increase in use of K (Table 1).

Although metric units were officially adopted for agriculture in 1976, all but about 10% of farmers in 1982 chose to report fertilizer use in hundredweights or units per acre. It seems likely, however, that most farmers reckon 50 kg bags as hundredweights and this is assumed, perhaps belatedly, in reporting the 1982 results. Apart from sampling errors, Table 1 may therefore understate use in 1982 relative to that in 1981 by about 1½%.

**TABLE 1**

*Fertilizer use on tillage crops and grassland (kg ha$^{-1}$), 1979–82*

| | Tillage crops | | | | Grassland | | | | All crops and grass | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | 1981 | 1982 | 1979 | 1980 | 1981 | 1982 | 1979 | 1980 | 1981 | 1982 |
| N Straight | 66 | 77 | 92 | 99 | 71 | 69 | 74 | 71 | 69 | 73 | 83 | 85 |
| Compound | 46 | 44 | 43 | 42 | 45 | 50 | 51 | 52 | 45 | 47 | 47 | 47 |
| Total | 112 | 121 | 135 | 141 | 116 | 119 | 125 | 123 | 114 | 120 | 130 | 132 |
| $P_2O_5$ | 49 | 49 | 51 | 55 | 25 | 27 | 25 | 24 | 36 | 37 | 38 | 39 |
| $K_2O$ | 53 | 54 | 56 | 61 | 26 | 26 | 26 | 28 | 38 | 40 | 41 | 44 |

**TABLE 2**

*Fertilizer use on winter wheat and spring barley (kg ha$^{-1}$), 1979–82*

| | Winter wheat | | | | Spring barley | | | |
|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | 1981 | 1982 | 1979 | 1980 | 1981 | 1982 |
| N Straight | 117 | 126 | 144 | 148 | 26 | 24 | 37 | 34 |
| Compound | 18 | 19 | 18 | 18 | 62 | 63 | 61 | 60 |
| Total | 135 | 145 | 162 | 166 | 88 | 87 | 98 | 94 |
| $P_2O_5$ | 46 | 46 | 49 | 51 | 37 | 37 | 37 | 38 |
| $K_2O$ | 38 | 39 | 42 | 45 | 39 | 40 | 40 | 41 |

Increases in fertilizer use between 1981 and 1982 seem to have been mainly on the area in tillage cropping, with the estimated use of N per hectare on grassland marginally less on the farms surveyed in 1982. Estimated year to year changes in use of P and K have recently been only of the same order as the survey sampling errors, but estimates for the last 4 years are consistent with a gradual increase in use of these nutrients per hectare since 1979.

On individual tillage crops, use of straight N, and of P and K, per hectare on winter wheat have continued to increase, but on spring barley the increased use of straight N recorded in 1981 was no more than sustained in 1982 (Table 2). About 70% of the cereal area in 1982 was winter sown.

The average amounts of fertilizer nutrients used per hectare in 1982 on individual



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tillage crops, and on grassland classified according to utilization, and the proportions of each crop which got different amounts of nutrient are summarized in Tables 3–8 at the end of this paper.

## REFERENCE

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



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**TABLE 3**

*Fertilizer use in England and Wales, 1982*

| | 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 | 67 | 22 | 123 | 30 | 30 | 100 | 75 | 69 | 13 | 123 | 40 | 44 |
| Winter wheat | 2743 | 1538 | 166 | 51 | 45 | 99 | 88 | 80 | 10 | 167 | 58 | 55 |
| Spring barley | 1874 | 847 | 94 | 38 | 41 | 98 | 94 | 93 | 24 | 96 | 41 | 44 |
| Winter barley | 1506 | 779 | 145 | 51 | 54 | 100 | 92 | 91 | 11 | 145 | 56 | 59 |
| Spring oats | 130 | 35 | 67 | 35 | 39 | 92 | 91 | 91 | 18 | 73 | 39 | 43 |
| Winter oats | 184 | 59 | 111 | 56 | 52 | 100 | 94 | 93 | 8 | 111 | 59 | 56 |
| Mixed corn | 35 | 12 | 60 | 32 | 31 | 90 | 73 | 73 | 26 | 67 | 43 | 43 |
| Rye | 32 | 6 | 112 | 44 | 53 | 100 | 99 | 99 | 1 | 112 | 45 | 54 |
| Early potatoes | 83 | 28 | 189 | 192 | 234 | 100 | 100 | 99 | 38 | 190 | 192 | 237 |
| Maincrop potatoes | 373 | 121 | 199 | 199 | 267 | 99 | 99 | 99 | 35 | 200 | 201 | 269 |
| Sugar beet | 473 | 199 | 144 | 67 | 159 | 99 | 97 | 100 | 25 | 145 | 68 | 160 |
| Swedes (stock) | 110 | 19 | 55 | 99 | 68 | 90 | 98 | 90 | 42 | 61 | 100 | 76 |
| Turnips (stock) | 58 | 14 | 61 | 53 | 45 | 86 | 78 | 77 | 36 | 71 | 67 | 58 |
| Kale and cow cabbage | 94 | 19 | 112 | 45 | 51 | 98 | 85 | 88 | 52 | 114 | 53 | 58 |
| Rape for stockfeed | 26 | 8 | 90 | 61 | 47 | 93 | 85 | 85 | 26 | 97 | 72 | 55 |
| Beans for stockfeed | 98 | 32 | 13 | 27 | 21 | 14 | 41 | 36 | 5 | 87 | 66 | 59 |
| Other stockfeed | 85 | 28 | 71 | 54 | 53 | 77 | 82 | 78 | 34 | 92 | 65 | 67 |
| Peas for human consumption | 157 | 71 | 5 | 26 | 26 | 23 | 47 | 45 | 5 | 24 | 55 | 59 |
| Broad beans | 20 | 3 | 18 | 36 | 52 | 34 | 58 | 58 | 0 | 51 | 61 | 89 |
| Runner and French beans | 43 | 16 | 67 | 60 | 46 | 50 | 65 | 65 | 9 | 134 | 93 | 72 |
| Brussels sprouts | 54 | 20 | 246 | 105 | 181 | 100 | 93 | 99 | 21 | 246 | 112 | 183 |
| Cabbages | 57 | 10 | 186 | 96 | 153 | 97 | 92 | 92 | 16 | 192 | 104 | 166 |
| Cauliflower | 67 | 18 | 169 | 51 | 124 | 98 | 69 | 69 | 6 | 173 | 74 | 179 |
| Onions | 50 | 11 | 104 | 132 | 177 | 95 | 94 | 94 | 1 | 110 | 141 | 189 |
| Small fruit | 100 | 12 | 65 | 38 | 82 | 89 | 76 | 84 | 8 | 73 | 49 | 97 |
| Top fruit | 94 | 28 | 64 | 7 | 12 | 76 | 35 | 37 | 2 | 84 | 20 | 32 |
| Oilseed rape | 311 | 169 | 265 | 59 | 50 | 100 | 95 | 80 | 2 | 265 | 62 | 62 |
| All tillage | 9293 | 4215 | 141 | 55 | 61 | 96 | 89 | 86 | 15 | 147 | 61 | 71 |
| 1 year leys | 24 | 11 | 148 | 36 | 51 | 88 | 79 | 79 | 36 | 169 | 45 | 65 |
| 2–7 year leys | 2949 | 1571 | 173 | 31 | 41 | 93 | 73 | 73 | 47 | 185 | 43 | 56 |
| Permanent grass | 3682 | 2810 | 96 | 19 | 20 | 77 | 54 | 54 | 36 | 125 | 36 | 38 |
| All crops and grass | 15948 | 8607 | 132 | 39 | 44 | 89 | 75 | 73 | 28 | 148 | 52 | 61 |

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

**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 | 67 | 0 | 0 | 7 | 8 | 8 | 31 | 16 | 28 | 0 | 0 | 0 | 0 |
| Winter wheat | 2743 | 1 | 1 | 1 | 3 | 5 | 8 | 13 | 45 | 20 | 2 | 1 | 0 |
| Spring barley | 1874 | 2 | 1 | 11 | 24 | 23 | 18 | 12 | 7 | 1 | 0 | 0 | 0 |
| Winter barley | 1506 | 0 | 1 | 1 | 2 | 7 | 13 | 31 | 40 | 4 | 0 | 0 | 0 |
| Spring oats | 130 | 8 | 7 | 22 | 28 | 19 | 8 | 6 | 2 | 0 | 0 | 0 | 0 |
| Winter oats | 184 | 0 | 3 | 6 | 11 | 16 | 23 | 21 | 19 | 2 | 0 | 0 | 0 |
| Mixed corn | 35 | 10 | 6 | 32 | 30 | 8 | 13 | 0 | 0 | 2 | 0 | 0 | 0 |
| Rye | 32 | 0 | 0 | 32 | 2 | 0 | 24 | 24 | 2 | 16 | 0 | 0 | 0 |
| Early potatoes | 83 | 0 | 0 | 0 | 0 | 0 | 6 | 3 | 54 | 32 | 4 | 0 | 0 |
| Maincrop potatoes | 373 | 1 | 1 | 0 | 2 | 1 | 2 | 6 | 36 | 39 | 8 | 5 | 0 |
| Sugar beet | 473 | 1 | 0 | 2 | 2 | 6 | 13 | 41 | 29 | 4 | 2 | 0 | 0 |
| Swedes (stock) | 110 | 10 | 14 | 20 | 35 | 10 | 6 | 3 | 0 | 0 | 0 | 0 | 0 |
| Turnips (stock) | 58 | 14 | 2 | 23 | 25 | 27 | 5 | 3 | 1 | 0 | 0 | 0 | 0 |
| Kale and cow cabbage | 94 | 2 | 0 | 10 | 23 | 17 | 17 | 17 | 7 | 3 | 0 | 5 | 0 |
| Rape for stockfeed | 26 | 7 | 0 | 13 | 34 | 26 | 10 | 0 | 0 | 11 | 0 | 0 | 0 |
| Beans for stockfeed | 98 | 86 | 7 | 1 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 |
| Other stockfeed | 85 | 23 | 7 | 17 | 9 | 10 | 16 | 7 | 9 | 1 | 0 | 0 | 0 |
| Peas for human consumption | 157 | 77 | 15 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Broad beans | 20 | 66 | 16 | 5 | 4 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Runner and French beans | 43 | 50 | 8 | 0 | 0 | 0 | 8 | 15 | 17 | 2 | 0 | 0 | 0 |
| Brussels sprouts | 54 | 0 | 0 | 0 | 6 | 2 | 8 | 2 | 19 | 8 | 16 | 33 | 3 |
| Cabbages | 57 | 3 | 0 | 0 | 7 | 6 | 24 | 15 | 15 | 10 | 4 | 1 | 15 |
| Cauliflower | 67 | 2 | 0 | 0 | 1 | 0 | 13 | 30 | 35 | 3 | 10 | 6 | 0 |
| Onions | 50 | 5 | 0 | 8 | 32 | 12 | 5 | 20 | 4 | 10 | 2 | 1 | 0 |
| Small fruit | 100 | 11 | 0 | 38 | 6 | 30 | 6 | 5 | 3 | 0 | 1 | 0 | 0 |
| Top fruit | 94 | 24 | 11 | 8 | 8 | 31 | 5 | 8 | 6 | 0 | 0 | 0 | 0 |
| Oilseed rape | 311 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 6 | 16 | 38 | 33 | 0 |
| All tillage | 9293 | 4 | 2 | 4 | 8 | 9 | 11 | 16 | 29 | 11 | 3 | 2 | 0 |
| 1 year leys | 24 | 12 | 0 | 6 | 12 | 3 | 2 | 16 | 35 | 4 | 1 | 3 | 6 |
| 2–7 year leys | 2949 | 7 | 1 | 10 | 11 | 8 | 5 | 9 | 12 | 10 | 9 | 13 | 5 |
| Permanent grass | 3682 | 23 | 2 | 16 | 12 | 11 | 6 | 7 | 9 | 5 | 3 | 5 | 1 |
| All crops and grass | 15948 | 11 | 2 | 9 | 10 | 10 | 8 | 12 | 19 | 9 | 4 | 5 | 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 | 67 | 25 | 12 | 47 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Winter wheat | 2743 | 12 | 3 | 28 | 48 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Spring barley | 1874 | 6 | 16 | 58 | 18 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Winter barley | 1506 | 8 | 3 | 30 | 50 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spring oats | 130 | 9 | 21 | 53 | 15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Winter oats | 184 | 6 | 4 | 26 | 49 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mixed corn | 35 | 27 | 7 | 41 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rye | 32 | 1 | 34 | 32 | 13 | 16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Early potatoes | 83 | 0 | 0 | 0 | 1 | 1 | 6 | 4 | 44 | 34 | 9 | 1 | 0 |
| Maincrop potatoes | 373 | 1 | 1 | 0 | 3 | 2 | 3 | 4 | 31 | 40 | 12 | 3 | 1 |
| Sugar beet | 473 | 3 | 6 | 16 | 44 | 24 | 2 | 2 | 3 | 0 | 0 | 0 | 0 |
| Swedes (stock) | 110 | 2 | 7 | 26 | 14 | 10 | 8 | 14 | 16 | 2 | 3 | 0 | 0 |
| Turnips (stock) | 58 | 22 | 21 | 21 | 7 | 11 | 4 | 13 | 1 | 0 | 0 | 0 | 0 |
| Kale and cow cabbage | 94 | 15 | 16 | 35 | 17 | 7 | 7 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rape for stockfeed | 26 | 15 | 8 | 42 | 15 | 7 | 5 | 0 | 2 | 6 | 2 | 0 | 0 |
| Beans for stockfeed | 98 | 59 | 0 | 10 | 23 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other stockfeed | 85 | 18 | 10 | 29 | 23 | 7 | 6 | 6 | 1 | 1 | 0 | 0 | 0 |
| Peas for human consumption | 157 | 53 | 2 | 23 | 17 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Broad beans | 20 | 42 | 0 | 7 | 44 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Runner and French beans | 43 | 35 | 0 | 6 | 32 | 6 | 6 | 2 | 11 | 0 | 0 | 0 | 0 |
| Brussels sprouts | 54 | 7 | 0 | 2 | 16 | 21 | 35 | 0 | 18 | 2 | 0 | 0 | 0 |
| Cabbages | 57 | 8 | 0 | 15 | 10 | 8 | 33 | 15 | 11 | 0 | 0 | 0 | 0 |
| Cauliflower | 67 | 31 | 0 | 11 | 28 | 23 | 4 | 3 | 1 | 0 | 0 | 0 | 0 |
| Onions | 50 | 6 | 2 | 1 | 13 | 6 | 5 | 15 | 45 | 6 | 1 | 0 | 0 |
| Small fruit | 100 | 24 | 16 | 31 | 21 | 2 | 0 | 5 | 1 | 0 | 0 | 0 | 0 |
| Top fruit | 94 | 65 | 32 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oilseed rape | 311 | 5 | 1 | 23 | 61 | 5 | 3 | 2 | 1 | 0 | 0 | 0 | 0 |
| All tillage | 9293 | 11 | 6 | 32 | 38 | 7 | 2 | 1 | 2 | 2 | 0 | 0 | 0 |
| 1 year leys | 24 | 21 | 13 | 36 | 27 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2–7 year leys | 2949 | 27 | 24 | 30 | 11 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Permanent grass | 3682 | 46 | 29 | 17 | 4 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| All crops and grass | 15948 | 25 | 17 | 27 | 22 | 5 | 1 | 1 | 2 | 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 | 67 | 31 | 8 | 43 | 16 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Winter wheat | 2743 | 20 | 3 | 31 | 36 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spring barley | 1874 | 7 | 12 | 53 | 26 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Winter barley | 1506 | 9 | 2 | 32 | 44 | 8 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| Spring oats | 130 | 9 | 19 | 48 | 19 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Winter oats | 184 | 7 | 3 | 36 | 38 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mixed corn | 35 | 27 | 7 | 44 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rye | 32 | 1 | 28 | 17 | 32 | 18 | 4 | 0 | 0 | 0 | 1 | 0 | 0 |
| Early potatoes | 83 | 1 | 0 | 0 | 0 | 0 | 3 | 2 | 16 | 39 | 23 | 14 | 0 |
| Maincrop potatoes | 373 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 9 | 23 | 33 | 25 | 4 |
| Sugar beet | 473 | 0 | 0 | 1 | 5 | 14 | 13 | 15 | 22 | 22 | 7 | 0 | 0 |
| Swedes (stock) | 110 | 10 | 3 | 35 | 15 | 14 | 10 | 5 | 8 | 0 | 0 | 0 | 0 |
| Turnips (stock) | 58 | 23 | 20 | 14 | 25 | 11 | 4 | 0 | 2 | 0 | 0 | 0 | 0 |
| Kale and cow cabbage | 94 | 12 | 13 | 32 | 23 | 13 | 5 | 1 | 0 | 2 | 0 | 0 | 0 |
| Rape for stockfeed | 26 | 15 | 12 | 43 | 20 | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Beans for stockfeed | 98 | 64 | 0 | 16 | 14 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other stockfeed | 85 | 22 | 8 | 24 | 21 | 13 | 9 | 1 | 0 | 2 | 1 | 0 | 0 |
| Peas for human consumption | 157 | 55 | 2 | 17 | 19 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Broad beans | 20 | 42 | 0 | 3 | 24 | 6 | 20 | 0 | 5 | 1 | 0 | 0 | 0 |
| Runner and French beans | 43 | 35 | 0 | 5 | 44 | 10 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| Brussels sprouts | 54 | 1 | 0 | 0 | 0 | 7 | 29 | 1 | 9 | 34 | 18 | 0 | 0 |
| Cabbages | 57 | 8 | 0 | 7 | 3 | 4 | 14 | 8 | 21 | 33 | 2 | 1 | 0 |
| Cauliflower | 67 | 31 | 0 | 0 | 1 | 8 | 3 | 12 | 8 | 36 | 1 | 0 | 0 |
| Onions | 50 | 6 | 2 | 0 | 5 | 1 | 2 | 3 | 41 | 25 | 14 | 0 | 0 |
| Small fruit | 100 | 16 | 2 | 16 | 10 | 2 | 42 | 8 | 4 | 0 | 0 | 0 | 0 |
| Top fruit | 94 | 63 | 28 | 6 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oilseed rape | 311 | 20 | 1 | 13 | 58 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| All tillage | 9293 | 14 | 5 | 31 | 32 | 7 | 2 | 1 | 2 | 3 | 2 | 1 | 0 |
| 1 year leys | 24 | 21 | 4 | 37 | 17 | 13 | 3 | 6 | 0 | 0 | 0 | 0 | 0 |
| 2–7 year leys | 2949 | 27 | 18 | 23 | 16 | 6 | 4 | 4 | 2 | 1 | 0 | 0 | 0 |
| Permanent grass | 3682 | 46 | 25 | 18 | 6 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| All crops and grass | 15948 | 27 | 14 | 25 | 20 | 5 | | 2 | | 1 | 1 | 0 | 0 |



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TABLE 7

*Fertilizer use on grassland classified by utilization*

| | Fields | % Grassland area | Overall* (kg ha$^{-1}$) | | | % Area receiving | | | | Actual* (kg ha$^{-1}$) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N | $P_2O_5$ | $K_2O$ | N | P | K | FYM | N | $P_2O_5$ | $K_2O$ |
| Paddock grazed | 175 | 3 | 174 | 21 | 22 | 89 | 59 | 56 | 25 | 195 | 35 | 38 |
| Paddock grazed and mown | 85 | 1 | 174 | 24 | 38 | 87 | 57 | 60 | 55 | 199 | 42 | 63 |
| Strip grazed | 152 | 2 | 201 | 21 | 23 | 94 | 68 | 68 | 54 | 213 | 31 | 34 |
| Strip grazed and mown | 149 | 2 | 188 | 29 | 50 | 99 | 74 | 80 | 62 | 191 | 39 | 62 |
| Set stocked | 771 | 13 | 172 | 21 | 24 | 86 | 59 | 58 | 31 | 199 | 35 | 41 |
| Set stocked and mown | 426 | 6 | 180 | 29 | 49 | 96 | 73 | 78 | 58 | 188 | 40 | 63 |
| Cut for seed | 26 | 0 | 136 | 43 | 53 | 87 | 66 | 72 | 10 | 156 | 65 | 74 |
| Cut for dried grass | 26 | 0 | 279 | 10 | 18 | 99 | 30 | 25 | 52 | 280 | 33 | 72 |
| Cut for silage | 1058 | 14 | 201 | 37 | 63 | 99 | 82 | 87 | 65 | 204 | 45 | 72 |
| Cut for hay | 96 | 1 | 82 | 14 | 18 | 75 | 46 | 46 | 11 | 108 | 31 | 39 |
| Cut for hay and grazed† | 1069 | 14 | 82 | 23 | 25 | 91 | | 71 | 58 | 90 | 33 | 35 |
| Other grazings | 2541 | 41 | 76 | 20 | 15 | 71 | 51 | 48 | 24 | 107 | 40 | 32 |
| Not stated/not used | 135 | 3 | 61 | 18 | 9 | 62 | 37 | 33 | 23 | 99 | 47 | 27 |
| All grass | 6709 | | 123 | 24 | 28 | 83 | 61 | 61 | 39 | 148 | 39 | 46 |

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

† Excluding fields intensively grazed as in the first 6 categories above.



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**TABLE 8**

*Percentages of grassland area by utilization getting different amounts of N (kg ha$^{-1}$)*

| | Fields | 0 | <25 | 25– | 50– | 75– | 100– | 125– | 150– | 200– | 250– | 300– | 400+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paddock grazed | 175 | 11 | 1 | 13 | 10 | 7 | 3 | 7 | 14 | 9 | 3 | 16 | 8 |
| Paddock grazed and mown | 85 | 13 | 0 | 2 | 19 | 1 | 4 | 4 | 12 | 16 | 13 | 12 | 4 |
| Strip grazed | 152 | 6 | 0 | 2 | 7 | 6 | 9 | 11 | 11 | 13 | 8 | 23 | 4 |
| Strip grazed and mown | 149 | 1 | 0 | 2 | 6 | 6 | 9 | 15 | 26 | 7 | 12 | 14 | 1 |
| Set stocked | 771 | 14 | 2 | 8 | 9 | 9 | 4 | 8 | 9 | 9 | 8 | 14 | 7 |
| Set stocked and mown | 426 | 4 | 1 | 9 | 10 | 9 | 4 | 9 | 14 | 10 | 13 | 14 | 4 |
| Cut for seed | 26 | 13 | 0 | 6 | 5 | 10 | 6 | 17 | 31 | 2 | 5 | 6 | 0 |
| Cut for dried grass | 26 | 1 | 0 | 7 | 0 | 1 | 0 | 0 | 3 | 15 | 28 | 26 | 18 |
| Cut for silage | 1058 | 1 | 0 | 4 | 6 | 8 | 6 | 9 | 21 | 14 | 12 | 17 | 2 |
| Cut for hay | 96 | 25 | 3 | 8 | 8 | 18 | 8 | 17 | 4 | 7 | 1 | 1 | 0 |
| Cut for hay and grazed* | 1069 | 9 | 2 | 24 | 19 | 17 | 10 | 9 | 6 | 3 | 1 | 0 | 0 |
| Other grazings | 2541 | 29 | 3 | 18 | 14 | 10 | 5 | 6 | 6 | 4 | 2 | 3 | 1 |
| Not stated/not used | 135 | 38 | 11 | 12 | 4 | 12 | 5 | 7 | 7 | 1 | 0 | 3 | 0 |
| All grass | 6709 | 17 | 2 | 14 | 12 | 10 | 6 | 8 | 10 | 7 | 5 | 8 | 2 |

* Excluding fields intensively grazed as in the first 6 categories above.



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