



## Broadbalk wheat experiment plan 1852-1925

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**Description:** Experiment plan for the Broadbalk wheat experiment, 1852-1925, with details of fertilizer and manure treatments (not to scale).

- **Page 1:** Cover page
- **Pages 2-3** Broadbalk experiment plan 1852-1925, showing plot layout and treatment codes, with full details of fertilizer and manure treatments applied.

**Site:** R/BK/1. Broadbalk field, Rothamsted Experimental Farm, Rothamsted Research, West Common, Harpenden, Hertfordshire, AL5 2JQ, UK. Latitude 51.80946, Longitude -0.37301

### Related Resources:

- Johnston, A.E. & Garner, H.V. (1969) *The Broadbalk Wheat Experiment 2. Historical Introduction*. Rothamsted Report for 1968, part 2, pp12-25.  
<https://doi.org/10.23637/ERADOC-1-34916>
- Lawes, J.B. & Gilbert, J. H. (1864) *Report of experiments on the growth of wheat, for twenty years in succession on the same land*, J. Roy. Agric. Soc. England, **25**, part I, pp 93-185 and Part II, pp449-501.

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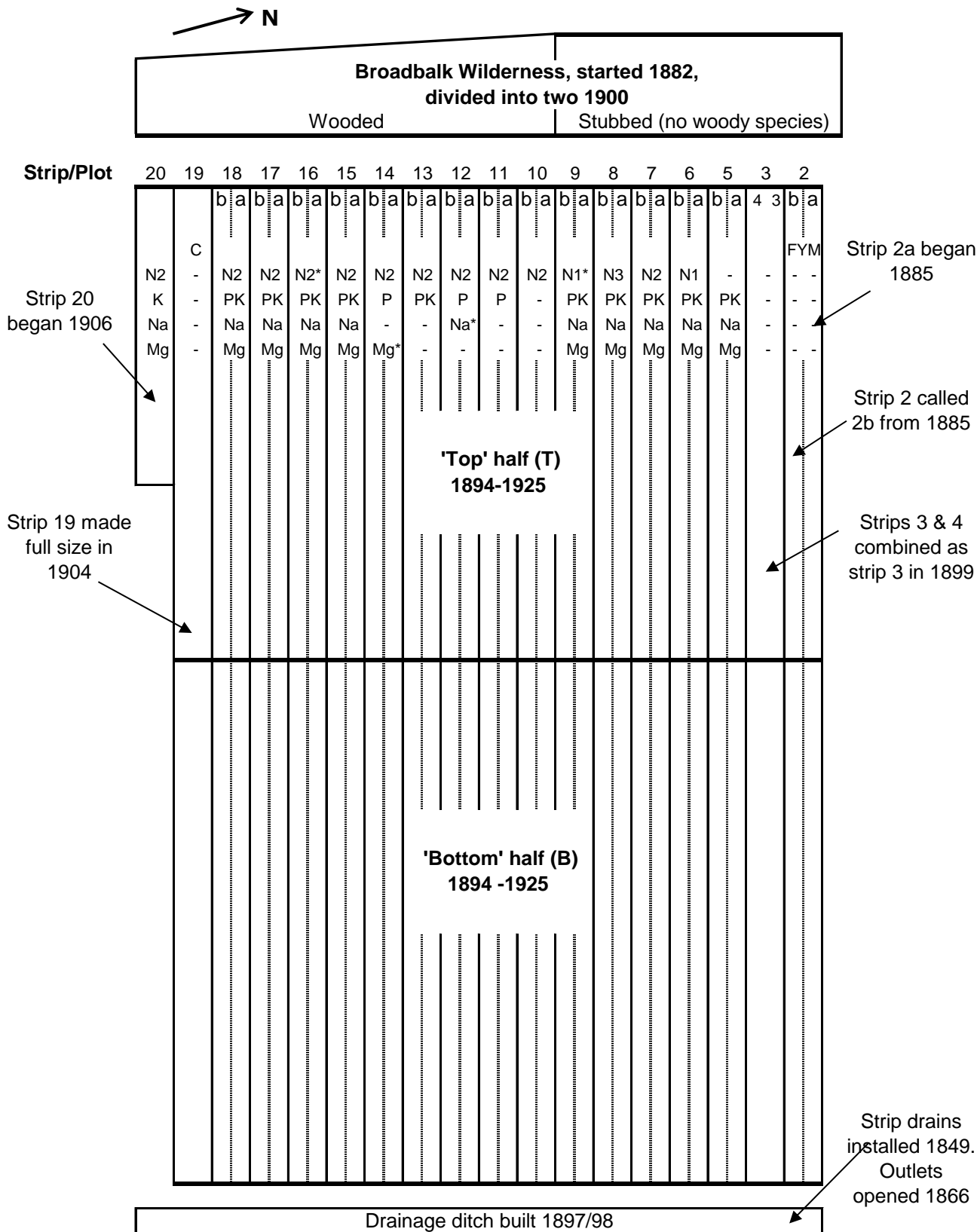
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# BROADBALK PLAN 1852-1925



Most strips divided into 2 halves length ways (a and b) 1847-1893  
a and b halves combined to make one strip in 1894.  
Strips divided into Top (T) and Bottom (B) halves most years 1894-1925

## Fertilizer and organic manure treatments 1852-1925

(Fertilizer treatments on many plots varied 1843-51, see Lawes & Gilbert 1864 for details)

### Strip/Plot Treatments applied each year since 1852:

- 2a FYM since 1885. New plot made in 1885 receiving FYM as same rate as plot 2b  
2b FYM since autumn 1843; originally called plot 2, named plot 2b in 1885 when plot 2a was made  
3 Nil. Originally 2 half plots, 3 (nil since 1844) and 4 (1844-51 NP; since 1852 nil).  
Harvested separately until 1899  
5 PKNaMg  
6 N1 PKNaMg  
7 N2 PKNaMg  
8 N3 PKNaMg  
9 N1\* PKNaMg since 1894; 9a and 9b received different treatments 1852-93:  
9a 1852-54 N1\*; 1855-84 N2\* PKNaMg; 1885-93 N1\* PKNaMg  
9b 1852-54 N2\*; 1855-84 N2\*; 1885-93 N1\*  
10 N2  
11 N2 P  
12 N2 P Na\*  
13 N2 PK  
14 N2 P Mg\*  
15 N2 PKNaMg since 1873; 15a and 15b received different treatments 1852-72:  
(timing of N application different to other plots, see below)  
15a 1852-72 N2 PKNaMg  
15b 1852-72 N1.5 PKNaMg + C  
16 N2\* PKNaMg since 1884; previously 1852-64 N4 PKNaMg; 1865-83 nil  
Strips 17 and 18 treatments alternate each year:  
17 N2 applied in even years; PKNaMg applied in odd years  
18 N2 applied in odd years; PKNaMg applied in even years  
19 C (rape cake); plot made full size in 1904. Originally half plot, 1852-78 N1.5 P + C; 1879-1903 C  
20 N2 KNaMg since 1906, previously nil

### Annual treatment per hectare:

- Nil: No fertilizer or manure  
FYM: Farmyard manure at 35t supplying approx. 225 kgN/ha  
C: Rape cake/castor bean meal: Supplying approx. 96kgN (N2).  
0.56t 1852-78; 1.91t 1879-82; 2.12t 1883-1925 (omitted 1917-1920).  
P: 35 kgP as superphosphate (omitted 1915)  
K: 90 kgK as potassium sulphate (omitted 1915, 1917-19)  
Na: 16 kgNa as sodium sulphate (omitted 1915)  
Na\* 57 kgNa as sodium sulphate (omitted 1915, 1917-19)  
Mg: 11 kgMg as magnesium sulphate (omitted 1915)  
Mg\* 31 kgMg as magnesium sulphate (omitted 1915, 1917-19)

### Nitrogen: Annual treatment per hectare

- |      |                              |      |                          |
|------|------------------------------|------|--------------------------|
| N1:  | 48 kgN as ammonium sulphate  | N1*: | 48 kgN as sodium nitrate |
| N1.5 | 72 kgN as ammonium sulphate  | N2*: | 96 kgN as sodium nitrate |
| N2:  | 96 kgN as ammonium sulphate  |      |                          |
| N3:  | 144 kgN as ammonium sulphate |      |                          |
| N4:  | 192 kgN as ammonium sulphate |      |                          |

### Timing of Nitrogen applications:

Ammonium sulphate:

- 1852-72 All applied in autumn  
1873-77 All applied in autumn, except plot 15 in spring  
1878-83 All applied in spring, except plot 15 in autumn  
1884-1967 24 kgN applied in autumn, remainder in spring (except plot 15 all in autumn)

Sodium nitrate (N\*):

- 1867-1967 All applied in spring, as one application 1867-98, as two equal amounts since 1899, applied from six days to six weeks apart

### Sources of data:

- Johnston, A.E. & Garner, H.V. (1969) Rothamsted Report for 1968, part 2, pp12-25.  
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