Broadbalk Wheat Experiment plan and cropping 1926-1967

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Description: Experiment plan for the Broadbalk Wheat Experiment, 1926-1967, with details of fertilizer and manure treatments (not to scale). Also cropping details 1926-1967.

- **Page 1:** Cover page
- **Pages 2-3:** Broadbalk Wheat Experiment plan 1926-1967, showing plot layout and treatment codes, with full details of fertilizer and manure treatments applied.
- **Pages 4-5:** Broadbalk Wheat Experiment cropping details 1926-1967, showing wheat cultivars, wheat/fallow rotations and the different sections.

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

Derived from:

- Johnston, A.E. & Garner, H.V. (1969) *The Broadbalk Wheat Experiment 2. Historical Introduction*. Rothamsted Report for 1968, part 2, pp12-25. 10.23637/ERADOC-1-34916
- Rothamsted Experimental Station (1970) *Details of the Classical and Long-Term Experiments up to 1967*, Rothamsted Experimental Station, Lawes Agricultural Trust, Harpenden UK, 128pp 10.23637/ERADOC-1-192

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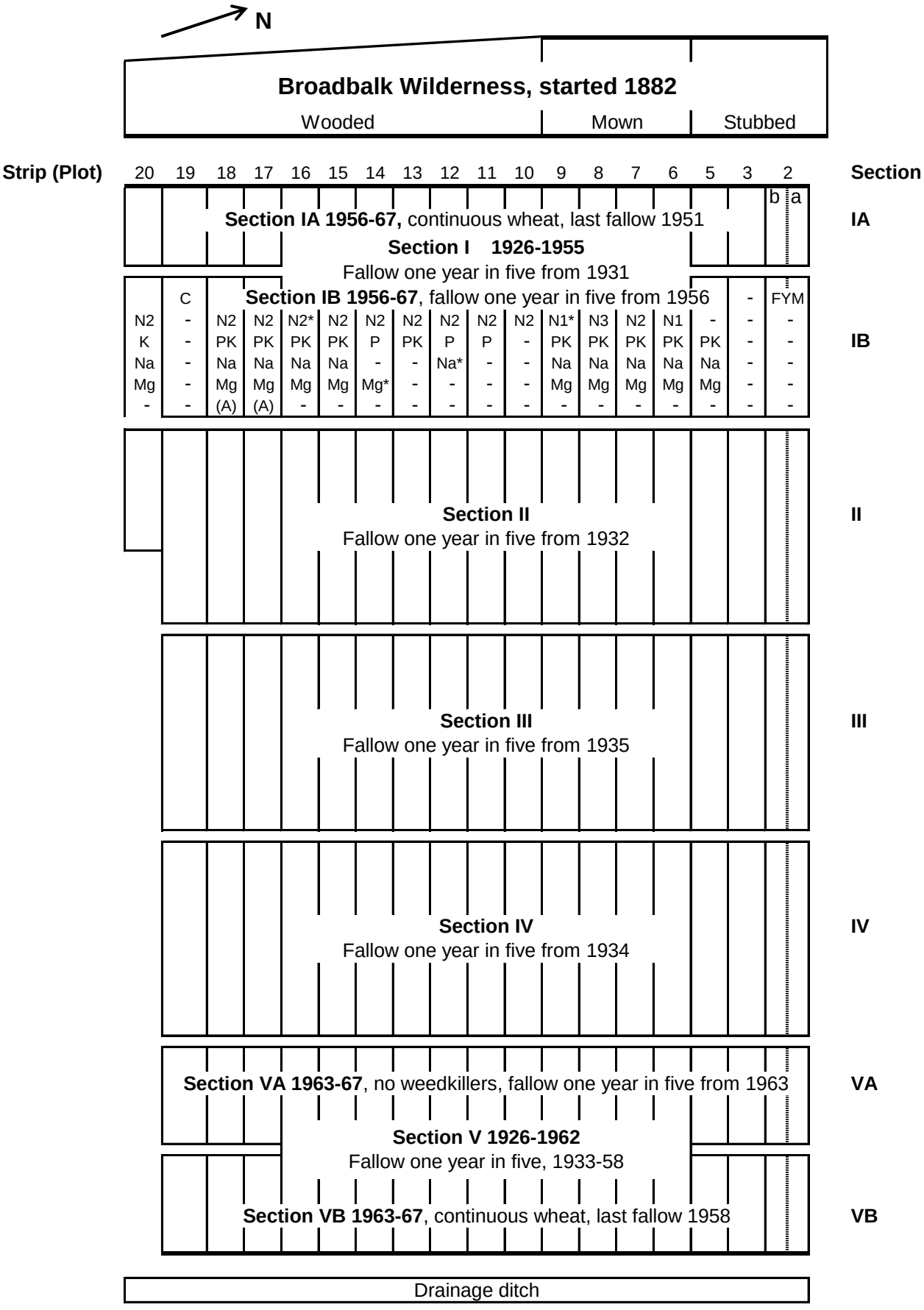
BROADBALK PLAN 1926-1967



Fertilizer and organic manure treatments 1926-1967

Strip Treatments applied each year (since 1852)

2a FYM since 1885 (called 2.1 1968 onwards)
2b FYM (called 2.2 1968 onwards)
3 No fertilizer or manure
5 PKNaMg
6 N1 PKNaMg
7 N2 PKNaMg
8 N3 PKNaMg
9 N1* PKNaMg since 1894; 9A and 9B received different treatments 1852-93
10 N2
11 N2 P
12 N2 P Na*
13 N2 PK
14 N2 P Mg*
15 N2 PKNaMg (timing of N application different to other plots, see below)
16 N4 PKNaMg 1852-64; unmanured 1865-83; N2*PKNaMg since 1884

(A) Plots 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 1879-1940; castor bean meal since 1941
N1.5 P and rape cake 1852-78
20 N2 KNaMg since 1906, previously no manure or fertilizer

Annual treatment per hectare:

FYM: Farmyard manure at 35t
C: Rape cake 1926-1940, supplying approx. 96kgN (N2).
Castor bean meal 1941-1967, supplying approx. 96 kgN (N2)
P: 35 kgP as superphosphate
K: 90 kgK as potassium sulphate
Na: 16 kgNa as sodium sulphate
Na* 57 kgNa as sodium sulphate
Mg: 11 kgMg as magnesium sulphate
Mg* 31 kgMg as magnesium sulphate

Nitrogen: Annual treatment per hectare

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

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, except N2 (plot 16) applied as two equal amounts since 1899, applied from six days to six weeks apart

Broadbalk Cropping 1926 - 1967

Old section number [a]

Winter Wheat Cultivar	Harvest Year	I		II	III	IV	V	
Red Standard	1926	**F**		**F**	**F**	W	W	
Red Standard	1927	**F**		**F**	**F**	W	W	
Red Standard	1928	W		W	**F**	**F**	**F**	
Squarehead's Master	1929	W		W	**F**	**F**	**F**	
Red Standard	1930	W		W	W	W	W	
Red Standard	1931	**F**		W	W	W	W	
Red Standard	1932	W		**F**	W	W	W	
Red Standard	1933	W		W	W	W	**F**	
Red Standard	1934	W		W	W	**F**	W	
Red Standard	1935	W		W	**F**	W	W	
Red Standard	1936	**F**		W	W	W	W	
Red Standard	1937	W		**F**	W	W	W	
Red Standard	1938	W		W	W	W	**F**	
Red Standard	1939	W		W	W	**F**	W	
Squarehead's Master	1940	W		W	**F**	W	W	
Squarehead's Master	1941	**F**		W	W	W	W	
Stand up	1942	W		**F**	W	W	W	
Squarehead's Master	1943	W		W	W	W	**F**	
Red Standard	1944	W		W	W	**F**	W	
Red Standard	1945	W		W	**F**	W	W	
Squarehead's Master	1946	**F**		W	W	W	W	
Squarehead's Master	1947	W		**F**	W	W	W	
Squarehead's Master	1948	W		W	W	W	**F**	
Squarehead's Master	1949	W		W	W	**F**	W	
Squarehead's Master	1950	W		W	**F**	W	W	
Squarehead's Master	1951	**F**		W	W	W	W	
Squarehead's Master	1952	W		**F**	W	W	W	
Squarehead's Master	1953	W		W	W	W	**F**	
Squarehead's Master	1954	W		W	W	**F**	W	
Section number:		**IA**	**IB**	**II**	**III**	**IV**	**VA**	**VB**
Squarehead's Master	1955	W	W	W	**F**	W	W	W
Squarehead's Master	1956	W	**F**	W	W	W	W	W
Squarehead's Master	1957	W	W	**F**	W	W	W	W
Squarehead's Master	1958	W	W	W	W	W	**F**	**F**
Squarehead's Master	1959	W	W	W	W	**F**	W	W
Squarehead's Master	1960	W	W	W	**F**	W	W	W
Squarehead's Master	1961	W	**F**	W	W	W	W	W
Squarehead's Master	1962	W	W	**F**	W	W	W	W
Squarehead's Master	1963	W	W	W	W	W	**F**	W
Squarehead's Master	1964	W	W	W	W	**F**	W	W
Squarehead's Master	1965	W	W	W	**F**	W	W	W
Squarehead's Master	1966	W	**F**	W	W	W	W	W
Squarehead's Master	1967	W	W	**F**	W	W	W	W
1968 onwards, becomes new section number:		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

W=winter wheat, F=fallow (no crop)
Harvest year refers to the year in which the crop was harvested.

[a] **1926**: Experiment divided into five sections (I-V) to allow sequential fallowing to control weeds.
1955: Section I divided into IA and IB. IB received herbicides and was no longer fallowed,

section IB continued the 5 year cycle of wheat and fallow.
Section V divided into VA and VB. VB received a single application of lime, VA did not.
1963: Section VB no longer fallowed, and received herbicides as required;
section VA continued with the 5 year wheat and fallow cycle.
1968: Divided to make 10 'New' sections, 0-9

Seed: New seed was bought each year up to 1963. From 1963 saved seed from the previous Broadbalk crop (bulked from several plots and well mixed) was sown.