

# BROADBALK PLAN 1852-1925



<b>Broadbalk Wilderness, started 1882</b> divided into two 1900	
Wooded	Stubbed (no woody species)

Strip

	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	3	2		
			B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
N2	-	N2	N2	N2*	N2	N2	N2	N2	N2	N2	N2	N1*	N3	N2	N1	-	-	-	-	
K	-	PK	PK	PK	PK	P	PK	P	P	-	PK	PK	PK	PK	PK	PK	-	-	-	
Na	-	Na	Na	Na	Na	-	-	Na*	-	-	-	Na	Na	Na	Na	Na	-	-	-	
Mg	-	Mg	Mg	Mg	Mg	Mg*	-	-	-	-	-	Mg	Mg	Mg	Mg	Mg	-	-	-	
							<b>'Top' half (T)</b> <b>1894-1925</b>													
							<b>'Bottom' half (B)</b> <b>1894 -1925</b>													

Drainage ditch

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

### Strip Treatments applied each year since 1852:

- 2A FYM since 1885
  - 2B FYM
  - 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
- 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 N1.5 P and rape cake 1852-78, 1879-1925 rape cake only
  - 20 N2 KNaMg since 1906, previously no manure or fertilizer

### Annual treatment per hectare:

- FYM: Farmyard manure at 35t containing approx 224 kgN/ha
- C: Rape cake: Supplied 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
- N1.5 72 kgN as ammonium sulphate
- N2: 96 kgN as ammonium sulphate
- N3: 144 kgN as ammonium sulphate
- N4: 192 kgN as ammonium 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:

- 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 & Garner (1969) Rothamsted Report for 1968, Part 2, pp12-25
- Rothamsted Research (2006) 'Guide to the Classical and other Long-term Experiments'
- Lawes Agricultural Trust, Harpenden, UK.
- Please contact the e-RA Curators for further information