Hoosfield spring barley experiment plan and fertilizer treatments 2001 onwards

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Description: Standardised experiment plan for the Hoosfield spring barley experiment, 2001 onwards (not to scale), with details of fertilizer and manure treatments applied.

- **Page 1:** Cover page
- **Page 2:** Experiment plan 2001 onwards
- **Pages 3-4**: Details of fertilizer and manure treatments, including changes since 2001.

Site: R/HB/2. Hoosfield, Rothamsted Experimental Farm, Rothamsted Research, West Common, Harpenden, Hertfordshire, AL5 2JQ, UK. Geolocation: 51.81206, -0.37608

Related Resources:

- Rothamsted Research (2006) *Guide to the Classical and other Long-term Experiments, Datasets and Sample Archive*, p32-33. Rothamsted Research, Lawes Agricultural Trust, Ltd, Harpenden UK https://doi.org/10.23637/ROTHAMSTED-LONG-TERM-EXPERIMENTS-GUIDE-2006
- Original plans for individual years can be found here: http://www.era.rothamsted.ac.uk/eradoc/book/81
- Rothamsted Research (2012) *Hoosfield spring barley experiment plan and fertilizer treatments, 1852-1967*. *Electronic Rothamsted Archive, Rothamsted Research*. 10.23637/rhb2-plan1852-1967-01
- Rothamsted Research (2015) *Hoosfield spring barley experiment plans and fertilizer treatments, 1968-2000*. *Electronic Rothamsted Archive, Rothamsted Research*. 10.23637/rhb2-plans1968-2000-01

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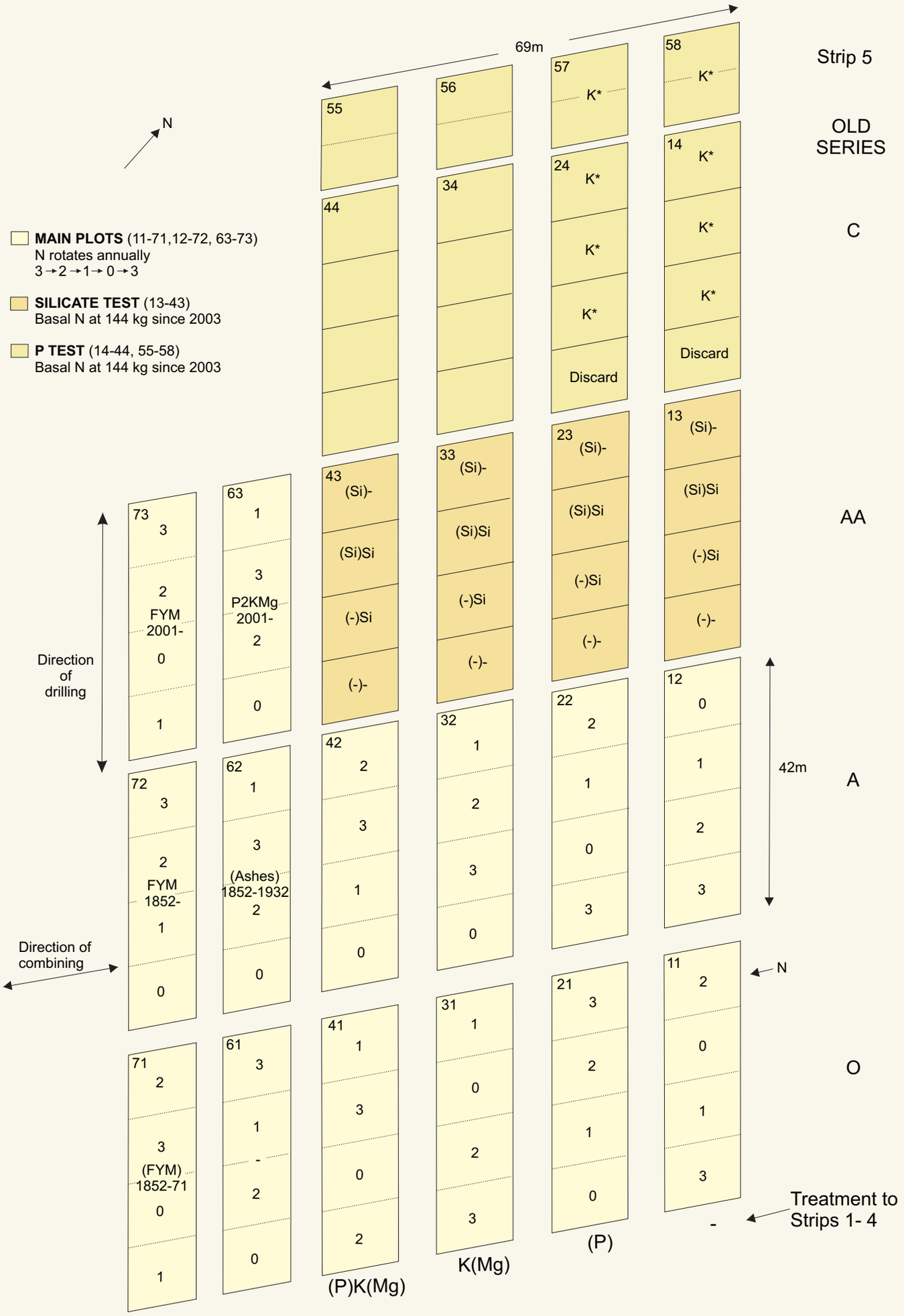
HOOSFIELD


69m
Strip 5
OLD SERIES
C
AA
A
O
N
MAIN PLOTS (11-71,12-72, 63-73)
N rotates annually
3→2→1→0→3
SILICATE TEST (13-43)
Basal N at 144 kg since 2003
P TEST (14-44, 55-58)
Basal N at 144 kg since 2003
Direction of drilling
Direction of combining
42m
N
Treatment to Strips 1- 4
(P)K(Mg)
K(Mg)
(P)
-
55
56
57 K*
58 K*
44
34
24 K* K* K* Discard
14 K* K* K* Discard
43 (Si)- (Si)Si (-)Si (-)-
33 (Si)- (Si)Si (-)Si (-)-
23 (Si)- (Si)Si (-)Si (-)-
13 (Si)- (Si)Si (-)Si (-)-
73 3 2 FYM 2001- 0 1
63 1 3 P2KMg 2001- 2 0
42 2 3 1 0
32 1 2 3 0
22 2 1 0 3
12 0 1 2 3
72 3 2 FYM 1852- 1 0
62 1 3 (Ashes) 1852-1932 2 0
41 1 3 0 2
31 1 0 2 3
21 3 2 1 0
11 2 0 1 3
71 2 3 (FYM) 1852-71 0 1
61 3 1 - 2 0

Hoosfield fertilizer and organic manure treatments, including changes since 2001

Fertilizer Treatments (per hectare per year unless indicated)

Nitrogen (applied in the spring) since 1968

N0, 1, 2, 3 0, 48, 96, 144kg N as calcium ammonium nitrate (Nitro-chalk)
Rates of N change cyclically every year in the order N3→N2→N1→N0→N3

Organics (applied before ploughing in the autumn)

FYM 1852 - 35t Farmyard manure since 1852
FYM 2001- 35t Farmyard manure since 2001
(FYM) 1852-71 35t Farmyard manure, 1852-1871 only

Minerals (applied before ploughing in the autumn) since 1852 unless shown otherwise

P2	44kg P as triple superphosphate since 2001
P	35kg P as triple superphosphate (47% P_2O_5)
(P)	35kg P until 2002 (not currently applied as soil levels are adequate)
K	90kg K as potassium sulphate
K*	180kg K, 2004-8 (450kg in 2003)
Mg	35kg Mg as Kieserite every 3 years since 2001
(Mg)	35kg Mg as Kieserite every 3 years until 2002 (not currently applied as soil levels are adequate)
Si	450kg sodium silicate since 1980
(Si)	450kg sodium silicate 1868-1979; 450kg of calcium silicate and sodium silicate 1862-67
(Ashes)	Ashes as added to minerals to aid spreading, 1852-1932 only
Nil	No fertilizer or manure since 1852

Note: 15kg Na as sodium sulphate discontinued in 1974 (applied with K and Mg);
P, K and Mg last applied to Series C for 1979
P and Mg not applied since 2002, except to plots 631-634, as soil levels are adequate.
These are monitored regularly and P and Mg will be applied again once required.

Series treatments (last applied 1966, 1967 for parts of Series C)

Applied to Strips 1 - 4 (not to plots 62 or 72)

O	None
A	48kg N as ammonium sulphate (1852-1967)
AA	48kg N as sodium nitrate (1852-1967)
C	48kg N as castor bean meal 1955-1967; castor bean meal at 1.12t/ha 1941-1954; rape cake at 1.12t/ha 1858-1940 and at 2.24t/ha 1852-57.

Note: Old Series C and Strip 5 used as a 'P' test since 2003. These plots and those on the Silicate Test (on the old Series AA) receive 144 kg basal N.
N applied as Nitro-chalk since 2003 and as Nitram since 2009

Lime: Lime has been applied as required since the 1950s to maintain soil pH at a level that does not compromise yield.

Cropping:

Spring barley grown every year, except 1912, 1933, 1943 and 1967 when the whole experiment was fallowed to control weeds.
From 1968-1978 there was a rotation of barley - beans - potatoes on some plots of Series AA and C. See Plan 1968-78 for details.

Additional Fertilizer treatments 1968-1978:

Barley received N0, N1, N2, N3 (0, 48, 96, 144kg N as Nitro-chalk)
Beans received no nitrogen

Potatoes received a basal dressing of 144kgN 1968-1972, and 0, 96, 192 and 288 1973-1978

In 1968 plots 721 and 723 received no N and 722 and 724 N1; thereafter shown as on the plan
In 1968 plots 611-614, 621-624, 711-714 and 721-724 received N at 63 (N1), 129 (N2) and 192 (N3) in error.
1970-72 plots 551 and 561 received 18kg P and 168kg K in error (Details 1968-73)

Reference:
Rothamsted Research (2006) *Guide to the Classical and other Long-term Experiments, Datasets and Sample Archive,* p32-33. Rothamsted Research, Lawes Agricultural Trust Ltd, Harpenden UK
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