Exhaustion Land Experiment Plan

2000-2006 Phase IV ↗ N

Plot 10	Plot 8	Plot 6	Plot 4	Plot 2
101	081	061	041	021
102 (PKNaMg) (1876-1901) 103	082 (N*PKNaMg) (1876-1901) 083	062 (N*) (1876-1901) 063	042 (FYM(N*P)) (1876-1901) 043	022 (Nil (FYM)) (1876-1901) 023
104	084	064 **"K Test"**	044	024

Plot 9	Plot 7	Plot 5	Plot 3	Plot 1
091 **P (P3)**	071 **P (P3)**	051 **P (P3)**	031 **P (P3)**	011 **P (P3)**
092 **(P2) P** (P) (1876-1901) 093 **P (P1)**	072 **(P2) P** (NPKNaMg) (1876-1901) 073 **P (P1)**	052 **(P2) P** (N) (1876-1901) 053 **P (P1)**	032 **(P2) P** (FYM(P)) (1876-1901) 033 **P (P1)**	012 **(P2) P** (Nil) (1876-1901) 013 **P (P1)**
094 **(P0) Nil**	074 **(P0) Nil**	054 **(P0) Nil "P Test"**	034 **(P0) Nil**	014 **(P0) Nil**

0

(not to scale)

Annual Treatments per hectare, 2000-2006:

"K Test" (Plots 2,4,6,8 and 10)

Basal manuring to all plots: 192 kg N & 20 kg P each year, and 20 kg Mg every three years

"P Test" (Plots 1,3,5,7 and 9)

Nil: No fertilizer or manure

P: 20 kg P as triple superphosphate in autumn (61.5kg in 1999 in error)

Basal manuring to all plots: 192 kg N & 124.5 kg K each year, and 20 kg Mg every three years

No P applied 1993-1999.

Annual Treatments per hectare, 1986-1992:

(P0): No P

(P1): 44 kg P as triple superphosphate

(P2): 87 kg P as triple superphosphate

(P3): 131 kg P as triple superphosphate

Cropping: Winter wheat, 2000-2006 except Spring wheat in 2001

Annual Treatments per hectare, 1856-1901, Phase I:

Nil :	No fertilizer or manure
FYM :	35 of farmyard manure since 1876
Nil (FYM) :	FYM 1876-1881, no fertilizer or manure 1882-1901
FYM (P) :	FYM plus P until 1882, FYM only 1883-1901
FYM (N*P) :	FYM plus N* and P until 1881, FYM plus P 1882, FYM only 1883-1901
N :	96 kg N as ammonium salts (ammonium sulphate & ammonium chloride)
N* :	96 kg N as sodium nitrate
P :	34 kg P (as superphosphate 1876-96, from basic slag 1897-1901)
K :	137 kg K as potassium sulphate (91 kg K 1859-74)
Na :	16 kg Na as sodium sulphate
Mg :	11 kg Mg as magnesium sulphate

Sources of data:

Rothamsted (1991) "Guide to the Classical Field Experiments",
Rothamsted Experimental Station, Lawes Agricultural Trust, Harpenden UK

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Johnston, A.E., Poulton, P.R., White, R.P. and Macdonald, A.J. (2016) "Determining the longer term decline in plant-available soil phosphorus from short-term measured values", Soil Use and Management doi:10.1111/sum.12253

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