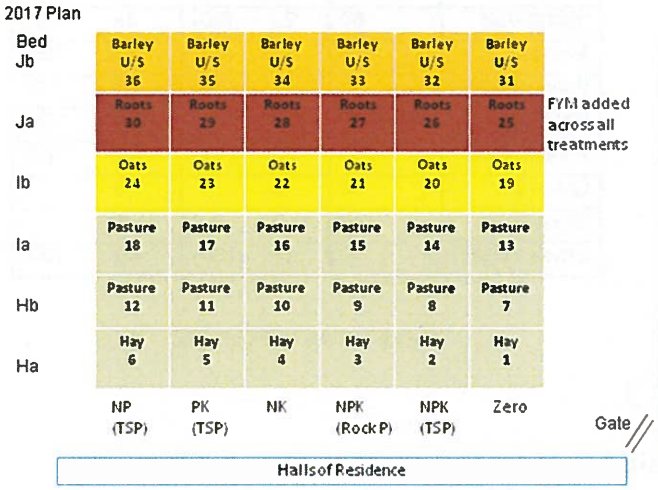
Woodlands Old Crop Rotation, SRUC Craibstone

Established in 1922 with 6 course rotation with 6 fertiliser treatments. Soil parent material is 'drift' derived from granite and metamorphic rocks and belongs to the Countesswells soil Association.

The rotation and fertiliser treatments

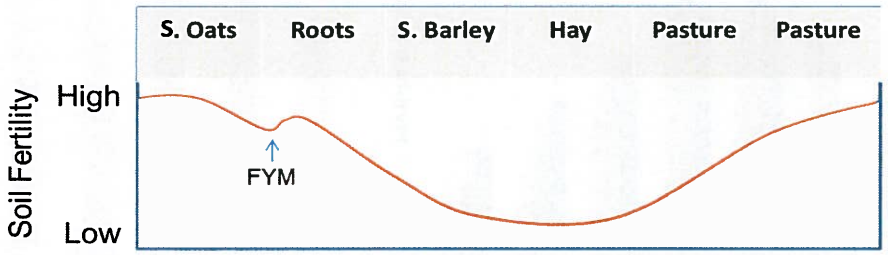


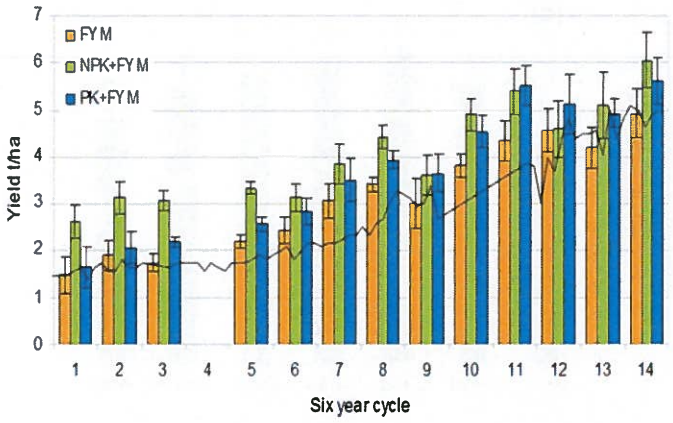
	Pre-1991 kg/ha	Post-1991 kg/ha
Nitrogen	26	80
Phosphorus		
Roots	39 (90)	66 (150)
Cereals & hay	20 (45)	26 (60)
Potassium		
Roots	62 (75)	83 (100)
Cereals & hay	32 (38)	58 (70)

Values in brackets are P_2O_5 and K_2O

Roots are represented by sub-plots of potatoes, swedes and turnips. All grain, straw tubers and hay are removed at harvest. Pasture and aftermath hay are cut regularly and left to mulch on individual plots.

Schematic of soil fertility through the rotation highlighting depletion and build-up phases in general terms





Spring Oat grain yield @ 85% DM (mean of 6 year cycle) solid black line shows national average yield. Bars are SEM

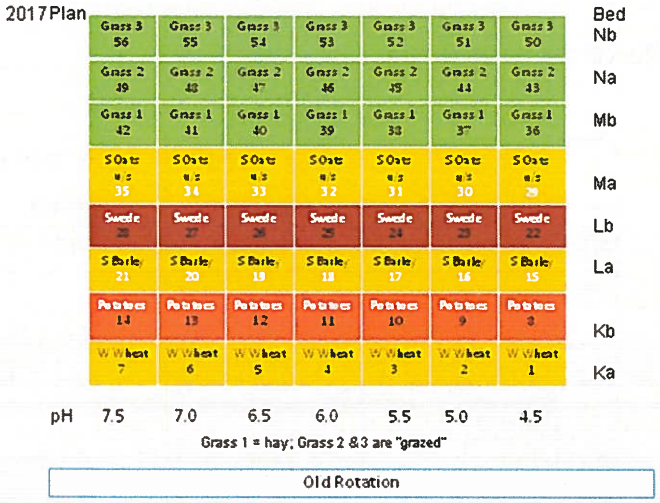
Yield increase over time (x3 for FYM and FYM & PK, but only x2 for FYM & NPK)

Clear N response over first 7-8 cycles between treatments but less so in later cycles.

This work is currently supported by RESAS funding. The input from all staff involved in the maintenance of the experiment over the years is greatly appreciated. For further information please contact christine.watson@sruc.ac.uk OR robin.walker@sruc.ac.uk

Woodlands pH Rotation plots, SRUC Craibstone

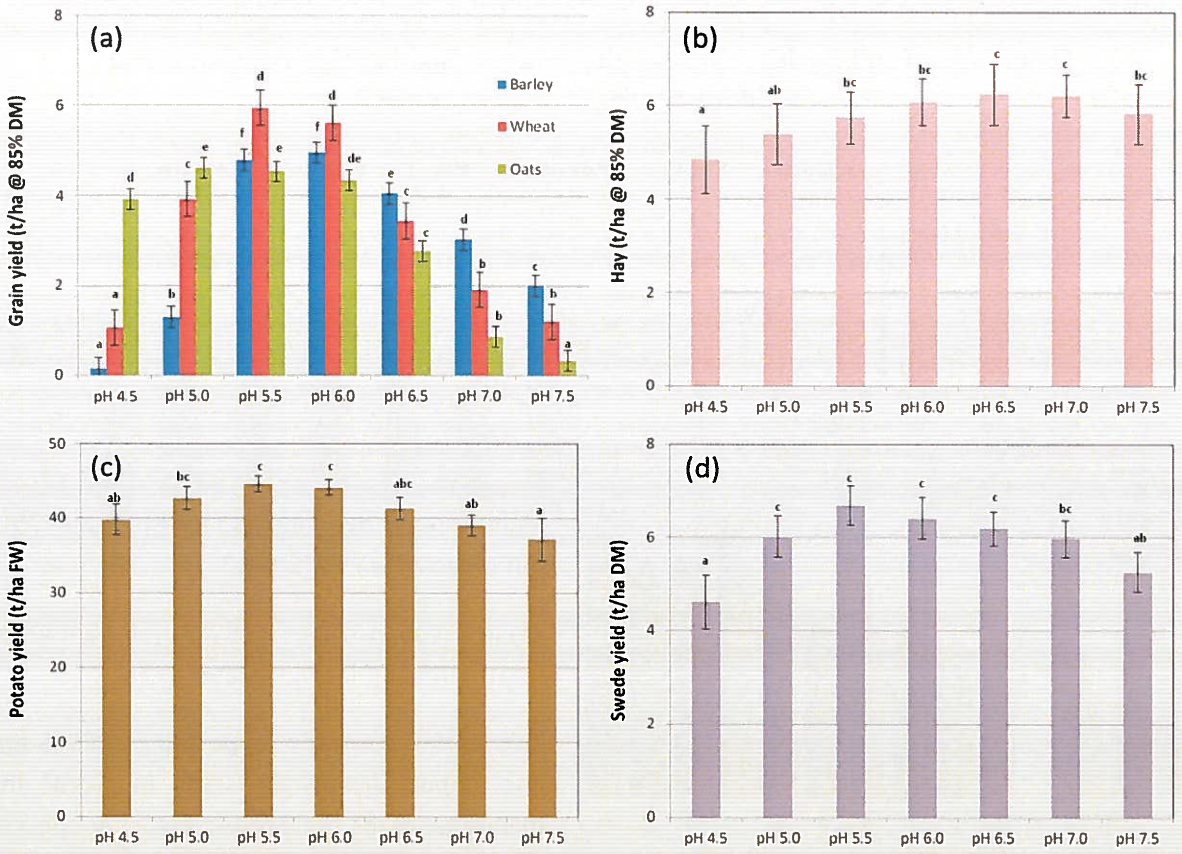
An eight course rotational trial was established in 1961. The soil is a sandy loam, Countesswells Association, Dess Series, with soil organic matter of approximately 7%.



Crop	kg N/ha	kg P/ha		kg K/ha	
Spring oats	60	22	(50)	58	(70)
Swedes	70	35	(80)	83	(100)
Spring barley	90	22	(50)	58	(70)
Potatoes	100	66	(150)	100	(120)
Winter wheat	100	28	(65)	71	(85)
Grass 3	0	0		0	
Grass 2	0	0		0	
Grass 1 (Hay)	70	13	(30)	42	(50)

Values in brackets are P_2O_5 and K_2O

Averaged yield over the period 1969-2016 showing the differential sensitivity to pH for a) Wheat, Barley and Oats, b) Hay, c) Potato and d) Swede. Error bars show LSD values and the same letters on the same crop show no difference between these treatments.



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