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Yields of the Field Experiments 1979

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Rothamsted Research

Rothamsted Research (1980) *79/W/CS/239 Late N - Potatoes ;* Yields Of The Field Experiments 1979, pp 231 - 233 **- DOI: https://doi.org/10.23637/ERADOC-1-45**

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79/W/CS/239

LATE N

Object: To study the effects of a range of fertilisers that release nitrogen later in the growing season than traditional forms on the growth and yield of potatoes - Horsepool.

Sponsors: F.V. Widdowson, A. Penny, J. Ashworth, T.M. Addiscott.

The first year, potatoes.

Design: 3 randomised blocks of 16 plots.

Whole plot dimensions: 4.27 x 13.1.

Treatments: All combinations of:-

1. N FORM — Forms of nitrogen fertiliser:

AQ U	Aqueous urea, injected before planting
AQ U+CS2	Aqueous urea + carbon disulphide at 10.0 kg, injected before planting
AQ U+NIT	Aqueous urea + nitrapyrin at 1.0 kg, injected before planting
NC E	'Nitro-Chalk', all to the seedbed
NC E+L	'Nitro-Chalk', half to the seedbed, half in June
IBDU	Isobutylidene diurea, all to the seedbed

2. N RATE(1) — Rates of nitrogen fertiliser (kg N):

200
300

plus four extra treatments all given 'Nitro-Chalk':

EXTRA

NC E100	At 100 kg N, all to the seedbed
NC E400	At 400 kg N, all to the seedbed
NC EL100	At 100 kg N, half to the seedbed, half in June
NC EL400	At 400 kg N, half to the seedbed, half in June

NOTE: Aqueous fertilisers were injected on 3 May, 1979, IBDU and 'Nitro-Chalk' were applied on 4 May. Late 'Nitro-Chalk' was applied on 18 June.

Basal applications: Manures: (0:14:28) at 1880 kg. Weedkillers: Linuron at 1.0 kg plus paraquat at 0.28 kg ion in 250 l. Fungicide: Mancozeb at 1.3 kg in 250 l on six occasions with insecticide on the first two. Insecticide: Pirimicarb at 0.14 kg on two occasions with fungicide. Haulm desiccant: Undiluted BOV at 170 l.

Seed: Pentland Crown.

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Cultivations, etc.:- Heavy spring-tine cultivated: 6 Sept, 1978. Subsoiled with tines 140 cm apart and 70 cm deep: 12 Nov. Rotary cultivated: 19 Nov. Ploughed: 24 Nov. PK applied: 7 May, 1979. Heavy spring-tine cultivated: 8 May. Rotary cultivated, potatoes planted: 10 May. Weedkillers applied: 25 May. Rotary ridged: 19 June. Fungicide applied: 27 June, 10 July, 23 July, 10 Aug, 25 Aug, 6 Sept. Insecticide applied: 27 June, 10 July. Haulm desiccant applied: 25 Sept. Lifted: 11 Oct. Previous crops: Winter wheat 1977, winter oats 1978.

NOTE: Plots were assessed for dry matter of tubers and haulm and for numbers of tubers on several occasions during the season. Samples of tubers were analysed for nitrogen percentages.

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79/W/CS/239

TOTAL TUBERS TONNES/HECTARE

***** TABLES OF MEANS *****

N RATE(1)	200	300	MEAN
N FORM			
AQ U	51.9	40.9	46.4
AQ U+CS2	45.3	39.8	42.6
AQ U+NIT	43.4	43.4	43.4
NC E	43.1	43.0	43.0
NC E+L	42.9	¢44.0	43.5
IBDU	34.2	40.6	37.4
MEAN	43.5	41.9	42.7

EXTRA	NC E100	NC E400	NC EL100	NC EL400	MEAN
	33.5	38.0	36.6	48.9	39.2

GRAND MEAN 41.8

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N FORM	N RATE(1)	EXTRA	N FORM N RATE(1) & EXTRA
SED	3.77	2.17	5.32	5.32

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	30	6.52	15.6

PERCENTAGE WARE 3.81CM (1.5 INCH) RIDDLE

***** TABLES OF MEANS *****

N RATE(1)	200	300	MEAN
N FORM			
AQ U	91.2	85.8	88.5
AQ U+CS2	89.8	89.0	89.4
AQ U+NIT	87.6	89.6	88.6
NC E	89.2	89.9	89.5
NC E+L	90.9	87.5	89.2
IBDU	81.9	86.8	84.3
MEAN	88.4	88.1	88.3

EXTRA	NC E100	NC E400	NC EL100	NC EL400	MEAN
	79.1	85.5	83.5	89.8	84.5

GRAND MEAN 87.3

PLOT AREA HARVESTED 0.00260

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