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76/R/CS/185 Late N - Potatoes

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76/R/CS/185

LATE N

Object: To study the effects of a range of fertilisers which release nitrogen later in the growing season than traditional forms on the growth, nitrogen uptake and yield of potatoes - Gt. Knott III.

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

The first year, potatoes.

Design: 3 randomised blocks of 18 plots.

Whole plot dimensions: 4.27 x 12.19.

Treatments: All combinations of:-

1. N FORM Forms of nitrogen fertiliser:

AA	Aqueous ammonia
AA+NITRA	Aqueous ammonia + nitrapyrin ('N-Serve') at 1.1 kg
AA+ATC	Aqueous ammonia + ammonium trithiocarbonate at 18 kg
IB SMALL	IBDU (isobutylidene diurea), small granules
IB LARGE	IBDU, large granules
AN E+L	Ammonium nitrate half in seedbed, half in mid-June
AN E	Ammonium nitrate all in seedbed

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

200	200
300	300

plus four extra treatments given ammonium nitrate, all in the
N RATE(2) seedbed (kg N):

AN E 150	150
AN E 250	250
AN E 350	350
AN E 400	400

NOTES: (1) Aqueous ammonia injected on 24 Mar, 1976
(2) IBDU broadcast 26 Mar.
(3) Ammonium nitrate broadcast 26 Mar, 17 June.

Basal applications: Manures: (0:14:28) at 1900 kg. Weedkillers: Linuron at 1.2 kg plus paraquat at 0.42 kg ion in 220 l. Fungicide: Mancozeb at 1.3 kg in 450 l applied three times. Haulm desiccant: Diquat at 0.59 kg ion in 220 l. Irrigation: Total 125 mm.

Seed: Pentland Crown.

Cultivations, etc.:- Heavy spring-tine cultivated: 20 Oct, 1975.
Ploughed: 31 Oct. Heavy spring-tine cultivated: 10 Mar, 1976. PK applied: 22 Mar. Spike rotary cultivated and potatoes planted: 30 Mar. Grubbed: 31 Mar. Weedkillers applied: 5 May. Grubbed and rotoridged: 7 June. Irrigated, 25 mm: 18 June. Fungicide applied: 25 June, 28 July, 1 Sept. Irrigated, 50 mm on each occasion: 4 July, 26 Aug. Haulm mechanically destroyed: 23 Sept. Haulm desiccant applied: 28 Sept. Lifted: 13 Oct. Previous crops: Winter wheat 1974, winter oats 1975.

NOTE: An adjustment has been made by covariance for differences between rows of plots, which run in the direction of a valley across the site.