Research Note

THE TOLERANCE OF POTATOES TO PARAQUAT AND DICAMBA

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Summary

Tuber yield was depressed significantly by spraying potatoes (var. Rua) when 5 in. above ground with paraquat or with dicamba. Paraquat should be applied sooner than this. Dicamba should not be used on potatoes.

THIS TRIAL used part of an irrigated crop (var. Rua) grown by H. K. Hall, Waimea West, Nelson. Potatoes were planted in 30 in. rows on October 20, 1966. On November 21, 1966, when the potatoes were approx. 5 in. above ground, trial plots were sprayed with 20 gal water per acre containing either paraquat dichloride or the diethanolamine salt of dicamba. The whole trial area was hand-wheeled three times. This was necessary because of the abundance of stagger weed (*Stachys arvensis*) and speed-well (*Veronica persica*) which are resistant to dicamba.

The potatoes quickly recovered from paraquat but not from dicamba which caused distorted leaves and short haulms.

Tubers were dug and weighed on March 25, 1967. Results are given in Table 1.

TABLE 1: YIELD OF POTATO TUBERS IN TONS (2,240 lb) PER
ACRE

Paraquat 8 oz cation per/acre	13.5
Dicamba 4 oz a.i./acre	12.0
Hand-weeded control	15.4
L.S.D. ($P < 0.05$)	1.5
($P < 0.01$)	2.8

DISCUSSION

The lowest rate of dicamba for good control of redshank (*Polygonum persicaria*) is 4 oz a.i. per acre, but this is too severe on potatoes to warrant further trial. The reduced rate of top growth following dicamba would presumably render the crop less able to compete against weeds which were not controlled. Potato plants treated with dicamba had as many tubers as untreated, but smaller. The quality appeared good.

The depression of yield from paraquat was small but significant, and shows that spraying with paraquat should be done before all potatoes are through the ground. If spraying is done with paraquat when 10 to 20% of the potatoes are up, good control of seedling weeds is obtained with only a very small direct effect of the chemical on the crop.