

EFFECT OF SIMULATED SYNTHETIC AUXIN HERBICIDE DRIFT ON SNAP BEANS AND POTATOES

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Concern exists among specialty crop producers and processors related to the potential introduction of agronomic crops tolerant of synthetic auxin type herbicides. While anecdotal observations of synthetic auxin herbicide drift on specialty crops have been reported, quantitative data on injury and crop yield is often lacking. The objective of this study was to determine the effect of simulated synthetic auxin drift on potatoes and snap (green) beans. In potatoes, simulated dicamba drift was evaluated at three rates (1.4, 4.2 and 7.0 g ae/ha) and two timings. In snap beans, 2,4-D and dicamba were evaluated individually at the same rates described above but at one application timing. When dicamba was applied to 25 cm tall potatoes, visual injury 10, 24 and 30 days after treatment (DAT) increased with application rate, but by 38 DAT injury was greater than in the non-treated control only at the highest application rate. Potato tuber size distribution was variable and total yield did not differ among treatments and the non-treated control. In snap beans, injury from dicamba 7 DAT ranged from 19% at the low application rate to 45% at the high application rate. By 18 DAT, injury from 2,4-D was similar to the non-treated control. However, early-season injury delayed snap bean flowering and reduced crop yield compared to the non-treated control for all treatments except where the lowest rate of 2,4-D was applied. Snap bean injury from dicamba was greater than that from 2,4-D at all visual rating timings and crop yield was reduced compared to where 2,4-D was applied and the non-treated control.

It is important to note that the results presented are from a single season; this study will be repeated in 2012 and differences between years may be observed given varying environmental conditions. While harvested crop quality was observed, this research did not attempt to quantify any potential herbicide residue in the raw product. Commercial acceptance of a potentially affected crop would likely rely not only on visual observations but also on pesticide residue testing relative to domestic and international tolerances, if established.

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