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Safening effect of bentazon on cloransulam-methyl and halosulfuron-methyl in dry bean

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ABSTRACT

Bentazon, applied as a tankmix, has been shown to have the potential for reducing the injury from some POST herbicides. Field experiments were conducted in 2008 and 2009 at Exeter, ON and in 2009 at Ridgetown, ON to determine if the addition of bentazon reduces the injury from cloransulam-methyl or halosulfuron-methyl applied POST in black, cranberry, kidney and white beans. Bentazon added to cloransulam-methyl reduced the level of injury 0 to 6% at 17.5 g · ai · ha^{-1} and 0 to 9% at 35 g · ai · ha^{-1} in dry bean. Bentazon added to halosulfuron-methyl reduced the level of injury as much as 4% at 35 g · ai · ha^{-1} and 6% at the 70 g · ai · ha^{-1}. Bentazon added to cloransulam-methyl increased plant height as much as 3 cm. The addition of bentazon to halosulfuron-methyl had no effect on the height of various market classes of dry bean. Bentazon added to cloran-sulam-methyl generally has no effect on seed moisture content in black and white bean but decreased seed moisture content of cranberry and kidney bean as much as 4%. The addition of bentazon to halosulfuron-methyl caused no effect on seed moisture content of dry bean. Cloransulam-methyl caused a 7% to 18% reduction in dry bean yield compared to halosulfuron-methyl and 12% to 21% reduction in yield compared to bentazon. Bentazon added to cloransulam-methyl increased dry bean yield by 0.16 and 0.31 t · ha^{-1} at Exeter (2009) and Ridgetown (2009) respectively. The addition of bentazon to halosulfuron-methyl had no effect on dry bean yield.

KEYWORDS

Bentazon; Cloransulam-Methyl; Crop Injury; Halosulfuron-Methyl; Safening; Phaseolus Vulgaris; Sensitivity

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