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Co-application of herbicides and insecticides in dry bean

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ABSTRACT

Eight field trials were conducted from 2006 to 2008 at various locations in Ontario to evaluate the co-application of postemergence herbicides with cyhalothrin-lambda or dimethoate insecticides in cranberry and white bean. At 2 weeks after treatment, the addition of cyhalothrin-lambda or dimethoate insecticides to sethoxydim, quizalofop-p-ethyl, bentazon, fomesafen and bentazon plus fomesafen did not increase injury at the Exeter and Ridgetown locations except for bentazon plus dimethoate which caused greater injury than bentazon alone (2.9% vs 0.2%) in 2006. However at Harrow, the addition of dimethoate to quizalofop-p-ethyl increased injury (0% vs 4.9%) in 2007 and the addition cyhalothrin-lambda or dimethoate to sethoxydim increased injury in 2008 in dry bean. The addition of cyhalothrin-lambda to quizalofop-p-ethyl also increased injury (0% vs 4.5%) in 2008. There was no adverse effect on dry bean injury with other treatments at Harrow in 2007 or 2008. The addition of cyhalothrin-lambda or dimethoate to the herbicides evaluated did not have any adverse effect on plant height, shoot dry weight or yield of dry bean except for bentazon plus dimethoate which decreased shoot dry weight 20% compared to bentazon alone at Harrow in 2008. Based on these results, cyhalothrin-lambda or dimethoate can be tank-mixed with sethoxydim, quizalofop-p-ethyl, bentazon, fomesafen and bentazon plus fomesafen when the optimum application timing of these herbicides and insecticides coincide.

KEYWORDS

Cranberry Bean; Height; Herbicide Sensitivity; Injury; Tolerance; White Bean; Yield

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