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Control of volunteer adzuki bean in soybean

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ABSTRACT

The objective of this research was to evaluate the efficacy of various pre-emergence (PRE) and post-emergence (POST) herbicides for the control of volunteer adzuki bean (*Vigna angularis* (Willd.) Ohwi & Ohashi) in soybean (*Glycine max* L.). Trials were conducted at two locations in 2005, 2006, 2007, and 2009. Experiments were arranged in a randomized complete block design with either five PRE or nine POST herbicides. Volunteer adzuki bean interference in soybean resulted in yield loss of up to 25%. Cloransulam-methyl, linuron, metribuzin, flumetsulam, and imazethapyr applied PRE provided up to 6, 24, 14, 8, and 0% control, respectively at 8 weeks after emergence (WAE), while acifluorfen, fomesafen, bentazon, thifensulfuron-methyl, cloransulam-methyl, imazethapyr, and imazethapyr plus bentazon applied POST provided 2, 2, 5, 34, 6, 4, and 12% control, respectively at 8 weeks after application (WAA). Generally, with the aforementioned herbicides, soybean yield was equivalent to the weedy control and soybean grain contamination with adzuki bean seed was consistently above the 1% maximum threshold. Chlorimuron-ethyl and glyphosate applied POST provided up to 84 and 94% visual control at 8 WAA, respectively, decreased adzuki bean density, biomass, and seed production, and generally decreased soybean contamination with adzuki bean below the 1% threshold. The only herbicides evaluated in this study that controlled volunteer adzuki bean in soybean were chlorimuron-ethyl (9 g ai.ha⁻¹) and glyphosate (900 g ai.ha⁻¹) applied POST. All the other PRE and POST herbicides evaluated did not provide adequate control of volunteer adzuki bean in soybean.

KEYWORDS

Acifluorfen; Bentazon; Chlorimuron-Ethyl; Cloransulam-Methyl; Flumetsulam; Fomesafen; Imazethapyr; Linuron; Metribuzin; Pre-Emergence; Post-Emergence; Thifensulfuron-Methyl

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