HALOSULFURON FOR WEED CONTROL IN SNAP BEANS. Abram Bicksler and John B. Masiunas, Graduate Research Assistant and Associate Professor, Univ. of Illinois, 1201 West Gregory Dr., Urbana, IL 61801.

Halosulfuron is registered for PRE or POST application in snap beans. Application rates range from 19 to 38 g/ha. Halosulfuron applied PRE will control cocklebur, galinsoga, horseweed, jimsonweed, ladysthumb, common lambsquarters, smooth and redroot pigweed, common ragweed, and velvetleaf. POST applications provide better control of many weeds, such as nightshade, yellow nutsedge, and giant ragweed, than PRE applications but snap bean injury is more likely. If applied PRE, halosulfuron needs to be combined with a grass-active herbicide to provide broad-spectrum weed control and to slow development of acetolactate synthase resistant weed biotypes. EPTC is a grass-active herbicide that halosulfuron can be tank mixed. Because of EPTC, the tank mix must be incorporated to a depth of 5cm. The incorporation may dilute the halosulfuron, reducing weed control or it may increase snap bean injury by placing the herbicide near the germinating seed. S-metolachlor is also registered for snap beans and will improve PRE grass control compared to halosulfuron alone. Halosulfuron tank mixes with halosulfuron do not need to be incorporated, possibly reducing snap bean injury and improving weed control. The objective of our research was to determine efficacy and snap bean safety for halosulfuron tank mixed with EPTC compared to halosulfuron tank mixed with s-metolachlor. The treatments were: 1) untreated, weedy control; 2) halosulfuron + EPTC at 0.019 + 4.0 kg/ha PPI; 3) halosulfuron + EPTC at 0.0285 + 3.0 kg/ha PPI; 4) halosulfuron + EPTC at 0.038 + 4.0 kg/ha PPI; 5) halosulfuron + s-metolachlor at 0.0285 + 1.0 kg/ha PRE; 6) s-metolachlor at 1.0 kg/ha PRE/ halosulfuron at 0.0285 kg/ha POST; 7) s-metolachlor at 1.0 kg/ha PRE/ halosulfuron at 0.0285 kg/ha POST; and 8) s-metolachlor at 2 kg/ha PRE/ imazamox + bentazon at 0.011 + 0.42 kg/ha POST. The experiment was a randomized complete block design with four replications. The plots were 7.7 by 3 m and consisted of 4 rows spaced 0.77 m apart. Treatments were applied with a CO_2 pressurized backpack sprayer delivering 280 L/ha. The PPI treatments were applied on May 25 and incorporated with a field cultivar to a 6 cm depth. The plots were seeded immediately after herbicide incorporation using a Monosem planter. On the same day after seeding snap bean, we applied s-metolachlor. None of the herbicide treatments injured snap beans or reduced crop stand. The heavy, Drummer silty clay loam soil at our site and the warm soil temperatures at snap bean planting may explain the lack of crop injury. Halosulfuron + s-metolachlor provided poorer weed control than halosulfuron + EPTC. When applied with s-metolachlor, there were no weed control differences with PRE versus POST halosulfuron applications. The difference in weed control between halosulfuron with EPTC versus it with s-metolachlor is likely due to the rate of s-metolachlor (1 kg/ha) being too low. Combinations of halosulfuron with s-metolachlor merit further research because many snap bean growers prefer PRE herbicide applications.

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