



Mesotrione is an interesting option for selective, post-emergence control of *Conyza* spp. and *Gamochaeta coarctata* in black oats (*Avena strigosa* Schreb) crops in Southern Brazil

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Conyza spp. (horseweed or fleabane) and *Gamochaeta coarctata* (Willd.) Kérguelen are C₃-type weeds of black oats (*Avena strigosa* Schreb) fields in Brazil whose management is primarily done via applications of metsulfuron-methyl, an acetolactate-synthase (ALS) inhibitor which is the only post-emergent herbicide currently registered for use in this crop. However, since ALS-resistant *Conyza* spp. populations are widespread throughout the country, alternative chemical options are needed for sustainable weed management in Brazilian black oat fields. To this end, eight herbicide treatments were sprayed onto black oat plants at the tillering stage in field and greenhouse trials, and data collected on crop phytotoxicity, biomass production, and *Conyza* spp. and *G. coarctata* control. The best options for *Conyza* spp. control were mesotrione (192 g ai/ha), metsulfuron-methyl (3,9 g ai/ha), and a 2,4-D + bentazon mixture (502,5 g ae/ha + 720 g ai/ha, respectively), whereas proper *G. coarctata* control was only achieved via applications of either mesotrione or metsulfuron-methyl. Surprisingly, *G. coarctata* control following an application of 2,4-D alone was nearly 0%, which also led to poor control following use of the 2,4-D + bentazon mixture. Mesotrione, bentazon, 2,4-D, and the 2,4-D + bentazon mixture produced light symptoms of crop phytotoxicity initially; those symptoms, however, quickly disappeared. Phytotoxicity set forth by metsulfuron-methyl, on the other hand, equaled 30% at 34 days after spraying. Mesotrione, therefore, constitutes an option for selective post-emergence control of *Conyza* spp. and *G. coarctata* in black oat crops in Brazil, aiding in the fight against multiple-herbicide resistant *Conyza* spp. in Brazil.

Palavras-chave: *Avena strigosa*; *Conyza*; mesotrione; black oats; *Gamochaeta coarctata*.



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