Glyphosate-resistant smooth pigweed biotypes in Argentina: 2,4-D choline, dicamba and glufosinate control in post-emergence applications

Rafael Frene[1], Luis Lanfranconi[2], Marcos Baez Buchanan[3], Maximiliano Ravotti[4], Luis Serafini[5], Ernesto Teran Vega[6]

Dow-DuPont agricultural division[1], Universidad Católica de Córdoba[2], Dow-DuPont agricultural division[3], Dow-DuPont agricultural division[4], Dow-DuPont agricultural division[5], Dow-DuPont agricultural division[6]

Glyphosate-resistant *Amaranthus hybridus* biotype (smooth pigweed) today covers more than 5 million hectares in crop regions of Argentina. Since it is possible that both glufosinate-, glyphosate- and 2,4-D- tolerant and glyphosate- and dicamba- tolerant soybean cultivars may be available in Argentina, an objective is to determine how effective these technologies are on this weed. To determine the performance of 2,4-D, dicamba and glufosinate thirteen field trials were conducted on *A. hybridus* in Argentina trough 2015 to 2018 seasons. 2,4-D choline (456 g a.e./L), dicamba dimethylamine (480 g a.e./L) and glufosinate (280 g a.i/L) were utilized. Post-emergence treatments were applied from 5 to 20 cm *A. hybridus* tall. Visual percentage control evaluations were made four weeks after application. The 2,4-D choline at 720, 900 and 1140 g a.e./ha provided 73, 80, and 87%, respectively, *A. hybridus* control that was superior than dicamba at 140, 280, and 560 g a.e./ha providing 36, 52 and 70%, respectively. The addition of glyphosate at 1200 g a.e./ha significantly improved all 2,4-D and dicamba rates compared to auxinic treatments by themselves (66 vs. 80% respectively; $p>0.05$). Glufosinate alone (500 g ai/ha) showed control of 67%. The addition of 2,4-D choline at 900 g a.e./ha to glufosinate significantly ($p>0.05$) increased control to 90%. Fomesafen at 250 g a.i./ha with glyphosate at 1200 g a.e./ha provided 55% of control. Utilization of 2,4-D choline and glufosinate+2,4-D choline in glufosinate-, glyphosate- and 2,4-D- tolerant soybean crop programs provide a valuable tools to control glyphosate-resistant *A. hybridus* biotypes in Argentina.

Palavras-chave: Glyphosate-resistant, *Amaranthus hybridus*, visual control, auxinics

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