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Evaluation of post emergence herbicides including haloxyfop on different glyphosate-resistant ryegrass biotypes in Argentina.

Ana Venturino[1], Ramon Gigon[2], Pablo Marti[3], Diego Sansot[4]

Dow AgroSciences[1], Private researcher and consultant[2], Dow AgroSciences[3], Dow AgroSciences[4]

Lolium perenne. ssp multiflorum is a widespread weed in Argentina, found throughout the Buenos Aires (Bs As), Entre Ríos and Santa Fe provinces. First resistance issues were detected in 2007 (glyphosate resistance) and in 2009 (ACCase resistance). Multiple resistance biotypes were identified in 2010 (glyphosate- and ALS-resistant, and glyphosate and ACCase-resistant). Management of herbicide-resistant ryegrass is based on graminicides sprayed alone or in mixture with glyphosate (Gly). Double knock down is used under advanced weed development stages or in conditions with highlevels of resistance. The objective of this study was to determine efficacy post-emergence-applied haloxyfop on Gly-resistant ryegrass biotypes. Three field trials were conducted in 2015: 1 in Aparicio (S of Bs As); 1 in Solís (N of Bs As) and 1 in Viale (Entre Ríos). Weed development stage at the time of application was among 4 to 8 tillers. Treatments were: Gly at 960 g ae/ha, Gly at 1920 g ae/ha, haloxyfop at 93 g ai/ha, clethodim at 144 g ai/ha, Gly at 960 g ae/ha + haloxyfop at 93 g ai/ha, Gly at 960 g ae/ha + clethodim at 144 g ai/ha and the mixtures of haloxyfop and clethodim with Gly followed, 7 days after the application (DAA), by double knock down alternatives: paraquat at 560 g ae/ha, glufosinate ammonium at 500 g ai/ha and oxyfluorfen at 120 g ai/ha. Visual control evaluations were made 50 DAA in Viale and Solis and 75 DAA in Aparicio. Gly did not provide commercial control (>80%). Haloxyfop provided commercial control in Viale and Solis (>85%), but not in Aparicio (63%). The addition of Gly significantly improved haloxyfop performance in Aparicio (88%). Performance of haloxyfop in double knock down programs reached consistent and commercial control (>90%) of all biotypes. Haloxyfop programs were comparable to clethodim programs. Haloxyfop achieved commercially acceptable performance alone, with Gly, or in double knock down programs depending on the ryegrass biotype.

Palavras-chave: *Lolium perenne* ssp. *multiflorum*, resistance, chemical control, glyphosate, haloxyfop, double knock d