

DISPERSAL OF BARNYARDGRASS RESISTANT TO GLYPHOSATE IN SOUTHERN BRAZIL

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Destaque: The low susceptibility of barnyardgrass to EPSPs inhibiting herbicides was found in distinct regions of RS but was not reported in PR.

Resumo: Barnyardgrass (*Echinochloa crus-galli* (L.) P. Beauv.) is an important weed in some agronomic crops across the world. The first case of barnyardgrass resistant to EPSPs in Brazil was reported in 2020. However, there is limited information about the distribution of resistant populations throughout of agricultural regions of Southern Brazil. The goal of this work was to verify the dispersal of shifts in susceptibility to glyphosate in Southern Brazil fields. Seeds were harvested in areas where barnyardgrass plants survived after herbicide application. Sixty-one samples were collected across 2 years (2020-2021) from agricultural areas in Rio Grande do Sul and Paraná State, totaling 48 municipalities evaluated. The experiment was carried out in a greenhouse using a completely randomized experimental design with 3 repetitions. Seeds from all barnyardgrass biotypes were individually sown in 1 L pots (23 × 16 cm) filled with a commercial substrate, maintaining 15 seedlings per pot. A single discriminatory dose was applied to characterize the shift in susceptibility to glyphosate (1400 g e.a ha⁻¹). Plant mortality was evaluated at 21 DAT, and dispersion maps of barnyardgrass populations were created using TIBCO Spotfire 10.3.1 Analyst®. The low susceptibility to glyphosate in barnyardgrass was found in distinct regions of Rio Grande do Sul, but was not found in Paraná. Of all samples analyzed, 62% were considered high susceptible (mortality greater than 90%), 19% were assigned to medium susceptible classification (mortality between 20% and 89%), and 19% exhibited low susceptibility to glyphosate (mortality up to 19%). Overall, 38% of biotypes evaluated has a loss of susceptibility to glyphosate, especially the samples collected in agricultural areas of Rio Grande do Sul.

Palavras-chave: *Echinochloa crus-galli*; EPSPs; low susceptible