



Adaptive potential of *Lolium multiflorum* L. biotypes susceptible and resistant to glyphosate

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The ability for survival and reproduction determines a plant's adaptability, which depends primarily on its biological characteristics. Knowledge of these characteristics and the plant's bioecological behavior is vital to establish appropriate management strategies, especially towards the prevention and management of herbicide resistance. Glyphosate resistance in Italian ryegrass has become a serious problem in wheat production in the Rio Grande do Sul State, Brazil and the resistant biotypes appear to be as vigorous as the susceptible biotypes. This study hypothesizes that the resistant biotypes have an adaptive potential equal to that of a susceptible biotype. Adaptive potential was determined as a function of growth rate. The experiment was conducted in a greenhouse, following a factorial completely randomized design with four replications. The first factor included resistant (SVA 4 and PFU 5) and susceptible (SVA 2) biotypes, whereas the second factor consisted of different timings of sampling (20, 40, 60, 80, 100, 120, 140 and 160 days after emergence). The variables measured at each sampling were: plant height (HEI); number of tillers (NT); leaf area (LA), measured using a leaf-area meter; and, shoot dry matter (SDM), determined after drying the tissues in an oven at 60°C until constant weight. There was a significant biotype by sampling period interaction for HEI and NT. There was single effect biotypes and single effect periods for the variable LA and, single effect periods for SDM. The resistant and susceptible biotypes used in this study showed similar adaptive potential.

Palavras-chave: Ryegrass, Glyphosate, Resistance, Adaptive potential

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