Influence of growth stage on efficacy, absorption and translocation of glyphosate in Eragrostis plana

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Tough lovegrass (*Eragrostis plana*) is the most important weeds of native pastures in southern Brazil. The management of this weed is limited and glyphosate is the main tool for control. The aim of this work was to evaluate the influence of growth stage on efficacy, absorption and translocation of glyphosate in *E. plana*. We performed two experiments. In experiment 1, we sprayed glyphosate (540 g a.e. ha^{-1}) at three growth stages (5-6 tillers, tillering and flowering). In Experiment 2, using the same growth stages, we treated the plants with radiolabeled glyphosate (^{14}C-glyphosate). The control of *E. plana* with glyphosate at 5-6 tillers or flowering stage (>98%) was higher than at tillering stage. The ^{14}C-glyphosate absorption declined as the plants became older. The total ^{14}C-glyphosate translocated was highest at 5-6 tillers (74%), followed by flowering (57%), and tilllering stage (34%). Further, 66% of absorbed ^{14}C-glyphosate remained on the treated leaf at tilllering stage. At 5-6 tillers and flowering stage this amount was lesser (26 and 43%, respectively). About 43 and 46% of ^{14}C-glyphosate remained on the stem of the main tiller compared to only 25% at the tillering stage. ^{14}C-glyphosate was not detected in the tillers shoots when glyphosate was applied at tillering or flowering stages; however, a low amount (1.2%) was detected in the roots of tillers. The low efficacy of glyphosate on *E. plana* at tillering stage could be explained by reduced translocation. Moreover, there is limited translocation to the tillers when plants became older than 5-6 tillers stage.

Palavras-chave: native pastures, tough lovegrass, invasive grass, capim-annoni

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