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224-2 Glutathione Levels and Physiological Responses of Chromium-Stressed Seedlings of *Brachiaria Ruziziensis* and *B. Brizantha*.

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**Presentations**

- [PosterVirtual\\_ASA\\_Glutathione.pdf \(399.2 kB\)](#)

Chromium toxicity is a matter of increasing concern for pasture growing in Brazil. Such a stress influences redox reactions within plant cells and, thus, generates detrimental reactive oxygen species. Glutathione (GSH) is a peptide that acts as an antioxidant within cells, and has been reported to mitigate chromium toxicity in many species. In this study, *Brachiaria brizantha* and *B. ruziziensis* seedlings were evaluated for GSH production and physiological responses following addition of 0 or 5 mg.L<sup>-1</sup> Cr(III) to the nutrient solution. GSH levels were determined by colorimetric analysis at 412 nm using DTNB (5,5'-dithio-bis(2-nitrobenzoic acid)) and recovery with glutathione reductase. Evaluations were performed at days 10 and 20 (under continuous growth) and analyzed through ANOVA. The essays were carried out in a complete randomized design with 4 replications, arranged in a 2 (plant species) X 2 (chromium level) X 2 (days 10 and 20) factorial. Results revealed that Cr(III) effected an averaged increase of 0.77 mg.g<sup>-1</sup> in GSH levels, with a more pronounced response of *B. ruziziensis*. Physiological indicators were depressed in day 20, markedly in *B. brizantha*. It is concluded that the addition of Cr(III) to the growing medium causes GSH levels to rise, and this effect is more evident in *B. ruziziensis*. Cr(III) effects on physiological processes, in turn, are more conspicuous in *B. brizantha*.

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