



Evaluation of Phytochemical analysis in *Brachiaria* sp. Under Nitrogen fertilization and seasonal influences

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Abstract:

Plants secondary metabolites (PSM) can act as a toxin or detoxifying agents. Tannin and saponin are found in *Brachiaria* sp. in negligible and higher quantities, respectively. The managerial effects of swards on PSM in *Brachiaria decumbens* cv. Basilisk (BD) and *Brachiaria brizantha* cv. Xaraés (BB) in all seasons were observed. Sward managements comprised four levels of nitrogen fertilization (0, 150, 300 and 450 kg N/ ha) with two cutting heights (10 and 20 cm (BD) and 15 and 30 (BB)) in a complete randomized design (2x4x4) and season as a repeated measure. Sampling was done after every 28 days for phytochemical tests (saponin (foaming) and phenols (ferric chloride)). Foaming index varied only with season ($P= 0.001$) in BB, and lowest values were reported in spring ($58.9\pm 2.06\%$). However, in BD there was a significant interaction between all factors ($P=0.0006$) on foam stability. All seasons showed same results in non-fertilized swards under 450 kg N/ha, while lowest values were reported on treatments 300/20, 300/10 and 150/20, respectively in autumn, winter and spring. A significant interaction was found for all factors for phenols in BD and BB ($P<0.0001$). In BD, regardless of cutting heights and nitrogen, highest values were observed during summer and spring. While, in BB the highest phenol concentration occurred in summer and autumn or during summer and spring for all nitrogen levels on plant cutting heights of 15 cm and 30 cm, respectively. Overall, for both species, increasing on nitrogen fertilization tends to decrease phenols concentration. However, saponin varied with season of the year.

Biography

Syeda Maryam completing his PhD next year at age of 31 years from University of Sao Paulo, Brazil in Plants sciences. She is working as Research assistant in Institute of Soil Science and Plant Cultivation (Warsaw- Poland). She has published three articles and 4 resumes.