

reach 60 %. A trial was carried out in 1999 at Piracicaba, SP, with the purpose to evaluate the tolerance of *Saccharum* spp. cultivar IAC 83-1313 in competition with CYPRO. A randomized block design with four replications was used. The treatments were increasing densities of tubers: 50, 100, 150, 200 and 250 m⁻², in combination with *Saccharum* spp. bud stems at 25 m⁻², planted in boxes filled with Dark Red Latossol, and compared with a control without CYPRO. Sixty days after sowing, the harvesting of the experiment was done, followed by determination dry matter weight (phytomass). A functional interrelation was found between *Saccharum* spp. phytomass and CYPRO densities, based on significance for quadratic regression ($P < 0.01$). In accordance with the polynomial regression analysis, the coefficient of determination ($R^2 = 0.8906$) giving evidence of high dependence between variables, showing that phytomass of *Saccharum* spp. was reduced in consequence of the density increase of CYPRO starting from 50 plants m⁻², reaching the minimum point at 150 plants m⁻² when the values become stabilized. Results of this research showed that of growth reduction sugar cane was caused by the presence and increase of CYPRO densities.

Wild proso millet (*Panicum miliaceum* L.) growth and competition (54)

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The weedy form of *Panicum miliaceum*, commonly called wild proso millet, has become an important weed in North America. Infestation of this weed has been reported in several regions of the United States. Wild proso millet is weedy in corn causing estimated yield losses of more than \$50,000,000 annually in the United States and Canada. To evaluate growth and competitive ability of wild proso millet, experiments were conducted under greenhouse conditions at Colorado State University. Twelve biotypes were grown in 3-L pots. Five destructive harvests were taken over time to compare plant growth rate among biotypes, determined by leaf, stem and root dry weight analyses. Relative growth rate and absolute growth rate were derived using Richards's function. Two biotypes were selected from the results of the first experiment: one with high and the other with low growth rate. Three densities of wild proso millet (1, 3 and 6 plants/pot) were grown in competition with 1 plant of either corn or sugarbeet. The selected wild proso millet biotypes were planted at two time intervals (0 and 14 days after crop planting date). All plants were harvested at 42 days after planting, and leaf area, plant height, and leaf and stem dry weight were recorded. Differences among biotypes were observed. Total dry weight of corn and sugarbeet, in competition with wild proso millet planted at 0-time interval, millet was reduced from 16 to 55% and 50 to 88%, respectively. No differences in competitive ability were observed between the two biotypes studied.

Seed germination of five *Rottboellia exaltata* ecotypes (55)

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The purpose of this research was to evaluate the germination of the seeds of five ecotypes of *Rottboellia exaltata* L.f. from Jujuy (Argentina), Santa Cruz (Bolivia), Piracicaba, Campinas and Junqueira (Brazil). The experiment was performed in the laboratory using two samples of seeds: one composed by caryopsis (nude seeds - NS) and another composed by spikelets with the section of the rachis (covered seeds - CS). Four temperatures were tested 20-30°C (20°C without light during 16 hours, and 30°C for 8 hours with fluorescent white light), 25°C, 27°C and 30°C constant, with light for 12 hours. The statistical analyses were based on completely randomized designs, with four replicates of 100 seeds, and comparisons of means were made with Tukey's test at a 5% probability level. The results showed that for nude seeds, the temperature of 20-30°C was more appropriate, whereas for covered seeds, it varied according to ecotypes. The effects in the germination, of the removal of glumes, lemma and palea that involve the caryopsis varied with the ecotypes and temperatures studied.