



**2<sup>o</sup>** SIMPOSIO  
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GENÉTICO VEGETAL  
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# Resúmenes Segundo Simposio de Mejoramiento Genético Vegetal

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# Effects of the fungus *Epichloë occultans* on the drought resistance of different populations of ryegrass in Argentina

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KEY WORDS: Growth promotion, drought tolerance, endophyte fungus

OBJECTIVE: The aim of this work was to evaluate the growth parameters, such as dry weight, plant height and number of tillers, of 3 different ryegrass Pipinas (P), Feliciano (F), Ribeye (R) infected (E+) with the fungus and not infected (E-). The growth rate was determined in conditions of drought to assess the effects of the infection on the abiotic stress caused by the drought in plants.

MATERIALS AND METHODS: The experiment was carried out under drought conditions in a greenhouse. The ryegrass species evaluated were Pipinas (P), Feliciano (F) and Ribeye (R) infected (+) and non-infected (-) with the fungus *Epichloë occultans*. The treatments were determined according to the soil moisture levels: 66% field capacity (Control), 60%fc (T1) and 57%fc (T2). A 1:1 mixture of soil and sand was used. To measure soil moisture, he used the TDR 300 FieldScout probe three times a week. The statistical design was carried out in randomized blocks, with 3 repetitions. The number of stems and the height of the plant (centimeters) were determined every 7 days, whereas the dry weight and the relative water content were determined after 3 months. The software Infostat® version 2020I was used for the statistical analysis.

RESULTS: The P+ and R+ groups present a significant difference in terms of dry weight, possibly due to the protective effect provided by the fungus against the stress caused by drought. It is important to highlight what is observed that the different treatment conditions significantly affected the parameters evaluated as shown in Figure 1.

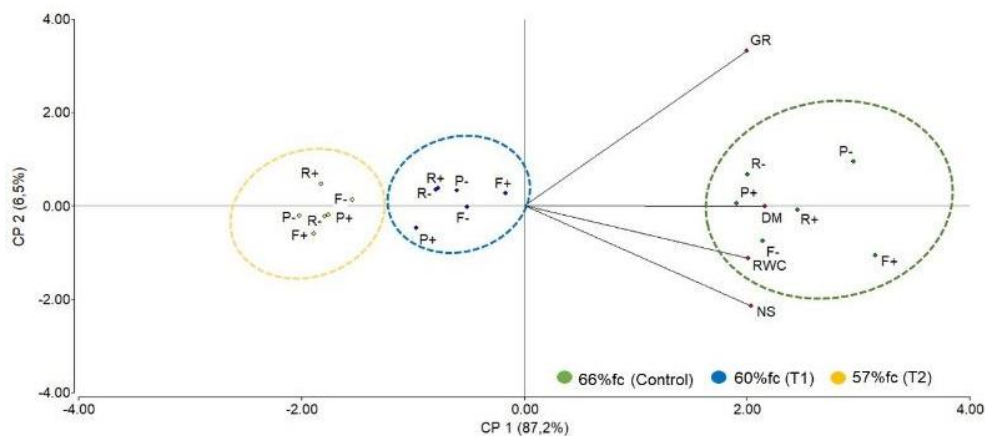


Figure 1: Analysis of the main components of height growth rate in cm (GR), Dry mass in grams (DM), Relative water content (RWC), Number of stems (NS), and field capacity values (FC) in the Pipinas (P), Feliciano (F), Ribeye (R) populations, with endophyte (+) and without endophyte (-), for the three treatments.

CONCLUSIONS: It can be observed that the *Epichloë occultans* fungus provides a protective effect against drought in the plants evaluated in this study.