EVALUATION OF THE GERMINATION SPEED INDEX OF MACROTILOMA SEEDS WITH FOUR SCARIFICATION METHODS

AVALIAÇÃO DO ÍNDICE DE VELOCIDADE DE GERMINAÇÃO EM SEMENTES DE MACROTIMOMA COM QUATRO MÉTODOS DE ESCARIFICAÇÃO

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The Germination Speed Index (GSI) is a vigor test used to evaluate seeds' physiological quality. In addition, this parameter is frequently used to determine forage seeds' viability and can be applied to species *Macrotyloma axillare* (E. Mey.) Verdc Generally, seeds of this legume present variable dormancy, depending on the stain, possibly hindering the germination process. Therefore, we evaluated the germination speed by testing different scarification methods. The experiment was carried out in the Plant Production Laboratory of Federal Institute of Education, Science and Technology of Southern Minas Gerais (IFSULDEMINAS) – Inconfidentes campus, in 2016. Seeds of *Macrotyloma axillare* accession NO 279 of the Forage Plants Germplasm Collection the Institute of Zootechnics, Nova Odessa, SP were tested. A single batch of seeds was used, divided into four tegument color classes: gray, yellow, red and black. Each color class was subjected to four scarification methods, namely soaking in hot water at 80 °C for 3 minutes, soaking in concentrated sulfuric acid for 10 minutes, manual scarification by cutting the forehead with a scalpel in the region opposite the embryo, and mechanical abrasion with # 120 sandpaper for two minutes. The experiment had a completely randomized block design in a 4 x 5 factorial arrangement (4 colors, 4 scarification methods + one control), with 4 replicates of 50 seeds. Treatments were evaluated simultaneously using the GSI as a parameter. For the evaluations, daily counts were carried out to determine the number of germinated seeds per day, considering germination after reaching at least 2 mm of root protrusion. The GSI values for each repetition were calculated according to the equation proposed by Maguire. Data were analyzed through the MIXED procedure of the SAS (Statistical Analysis System) program, with 1% significance level, and the means were compared by the Tukey-Kramer test. We observed the highest average value of GSI in gray seeds (17.9), the lowest was found in red and black seeds (0.3, 0.3, simultaneously) For the scarification method, the highest mean value was found in gray seeds immersed in sulfuric acid (12.7), contrasting with hot soaking (6.2) and abrasion with sandpaper (6.1), the last two not statistically differing. The highest GSI value was found in gray seeds immersed in sulfuric acid (28.2). We concluded that seed coat color and scarification methods influenced the IVG. Gray seeds scarified with sulfuric acid germinated faster than the others.

Keywords: legume, seeds, vigor.

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