

NITROGEN BALANCE INDEXES, CHLOROPHYL AND FLAVONOID IN SOYBEAN GENOTYPE BR11-6042 UNDER HYPOXIA CONDITION.

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Given the importance of soybean cultivation for both animal and human world food, it is important to carry out studies aimed at cultivating soybeans in areas where they are currently unsuitable for cultivation. The objective of this experiment was to evaluate the nitrogen balance index (NBI), chlorophyll and flavonoids indexes in soybean plants [*Glycine max* (L.) Merrill], strain BR11-6042 grown under natural light and temperature conditions. The evaluations were done using an electronic chlorophyllometer in plants submitted to hypoxia stress in the stages, V3, V3/R2 and R2. The evaluations were performed from the R2 stage and conducted until the end of the crop cycle. The averages were compared by the Tukey test ($P \leq 0.05$). The treatments were arranged with a completely randomized design, with three replications, in which the experimental unit was represented by three plants. According to the results, the chlorophyll index decreased in the treatments V3/R2 and R2, as for NBI there was an immediate increase followed by a decrease, and, for flavonoids, there was a decrease returning to the control indexes.

EFFECT OF WATER STRESS ON THE PERFORMANCE AND QUALITY OF SEEDS IN DIFFERENT SUNFLOWER INBRED LINES

EFEECTO DEL ESTRÉS HÍDRICO EN EL RENDIMIENTO Y CALIDAD DE SEMILLAS DE DIFERENTES LINEAS ENDOCRIADAS DE GIRASOL

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El girasol es la segunda oleaginosa de importancia en nuestro país. Debido al avance de la soja, este cultivo ha sido desplazado hacia áreas marginales del sistema agrícola argentino, una de ellas es la región pampeana subhúmeda-semiárida donde se encuentra expuesto a condiciones de sequía. Con el objetivo de definir caracte-

teres que permitan una selección rápida y eficiente de materiales genéticos en respuesta a dicho estrés se realizó una caracterización de parámetros de rendimiento y de calidad de semillas como energía, poder germinativo y vigor, en 8 líneas endocriadas de girasol expuestas a condiciones de estrés hídrico. Tal germoplasma fue evaluado a campo, EEA INTA Manfredi, Córdoba, en estrés moderado por restricción de ingreso de agua mediante cobertura plástica desde V2-V4 hasta Madurez Fisiológica durante la campaña 2017/2018. Se utilizó un diseño experimental de bloques incompletos Lattice y ANOVA como análisis estadístico utilizando SAS. Los resultados indicaron que los parámetros de rendimiento como número de semillas por planta, rendimiento en granos por ha. y en menor medida rendimiento de grasa por ha y los parámetros de calidad de semillas como poder germinativo y en menor medida vigor, podrían utilizarse en la selección de materiales genéticos en respuesta al estrés.

ENZYMATIC ANTIOXIDANT ACTIVITY IN NODULES OF TWO SOYBEAN GENOTYPES SUBMITTED TO HYPOXIA

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Ascorbate Peroxidase (APx) and Catalase (CAT) enzymes are the first metabolic defenses plants have to combat Reactive Oxygen Species (ROS) produced by stress. The activities of these enzymes were analyzed in nodules of two soybean genotypes AtNCED (NCED) GM line and wild-type (BRS 184) submitted to hypoxia stress by waterlogging. Plants were grown in PVC tanks with 1 m. depth, under natural conditions and submitted to waterlogging at vegetative stage (V4). Nodules were collected at 36 and 60 hours after waterlogging and 36 and 60 hours after recovery. The averages were compared by the Tukey test ($P \leq 0.05$). Under hypoxia APx and CAT did not differ for genotypes. However, during recovery Catalase enzyme in BRS 184 genotype differed significantly when compared to NCED. For APx enzyme, in the condition of normoxia there was no significant difference between genotypes. The treatments differed in relation to the recovery period, presenting distinct enzymatic activity for each treatment.