

**ANATOMICAL CHARACTERIZATION IN SOYBEAN PLANTS
WITH *SOJA LOUCA* II FROM SINOP-MT/BRAZIL**

**FANTIN L H¹, MEDRI M E², GABRIEL L C¹, NEUMAIER N³
& STOLF-MOREIRA R²**

¹Graduate student in Agronomy

²Universidade Estadual de Londrina – UEL, Rod. Celso Garcia Cid, Pr 445 Km 380, Caixa Postal 6001, CEP 86051-980, Londrina, Paraná, Brazil

³Embrapa Soja, Rod. Carlos João Strass, Caixa Postal 231, CEP 86001-970, Londrina, Paraná, Brazil

E-mail: renatastolf@hotmail.com.br

The occurrence of green stem and leaf retention is reported since the establishment of the soybean crop in Brazil, consolidating the term *Soja louca* (SL). Blamed in the 1980s to the attack of sucking bugs and to nutritional imbalance, currently it presents different symptoms, causing flower and pod abortion and deformation of leaves and stems, and is called *Soja louca* II (SL-II). Aiming for its anatomical characterization, stem and leaf samples were collected from soybean field plants with and without SL–II symptoms, in Sinop/MT (Brazil) and placed in 50% FAA (formalin: acetic acid: alcohol). Transverse sections of stem, mesophyll and midrib were obtained and stained with Astra blue and basic fuchsin, and mounted on histological slides. The analysis criteria were: stem - thickness of the epidermis, cortex, central cylinder and area of the vessel elements; mesophyll - thickness of the abaxial and adaxial epidermis, palisade and spongy parenchymas and intercellular spaces; and midrib - thickness of the epidermis, cortex, central cylinder, and area of the vessel elements. The images were obtained in a photomicroscope, measured by the Motic 2.0 software, and analyzed by SAS ($p = 0.05$) software. Scanning electron microscopy (SEM) was also carried out. Samples were dried with CO₂, fixed with carbon tape and coated with gold dust using a Bal-Tec/SCD-050 Sputter Coater. The results showed that there were thickness differences in the stem epidermis and leaf mesophyll (abaxial and adaxial epidermis). Furthermore, the intercellular mesophyll was also significantly different, being higher in plants with SL-II, which may increase the diffusion of O₂, having a lower net surface, which results in reduction of the photosynthetic rate, leading to productivity losses. Anatomical characteristics and thickness of the cortex and central cylinder and area of the vessel elements did not differ between plants with and without SL-II. In SEM analysis, structures similar to bacteria and fungi were identified throughout the epidermis of the plants with SL-II.