

[P1] Field Crop Production

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 1 (Poster) (Field Crop Production)

1:15 PM - 2:00 PM

[P1-26] Anaerobic and High Light Stress-Induced Leaf Abscission in Chili Pepper (*Capsicum* spp.)

*Nominated for Presentation Awards

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Photosynthetically active organs in plant leaf must achieve a delicate balance between the leaf water status or the light energy harvested by chlorophyll, and their photosynthetic capacity to convert light into chemical energy as ATP and NADPH₂ (Reinbothe et al., 1996; Huq et al., 2004). As one of the responses to abiotic stress, chili pepper (*Capsicum* spp.) induced the expression of genes that respond to ethylene and ROS, and induced H₂O₂ production at the abscission zone, which preceded leaf abscission (Munné-Bosch and Alegre, 2004; Sakamoto et al., 2008). Present study aimed to provide the significance of leaf abscission as a survival and adaptive strategy to environment by analyzing leaf physiological and biochemical parameters in chili pepper grown under different soil water status (well-drain and flood) and light conditions (non-shade and 60% shade). Leaf nitrogen status (SPAD) and maximum quantum yield (F_v/F_m) were investigated at respective 5 leaf positions divided as position 1 (P1), P2, P3, P4 and P5 from top to the lowest parts of the plant. Results demonstrated leaf abscission occurred in anaerobic and high light stressed plants. These plants abscised leaves at P4 or P5 (larger old leaf), but not at all in P1 to P3 (smaller young leaf). Additionally, they maintained higher SPAD and F_v/F_m at P1. Thereby, it can be suggested that abiotic stress-induced leaf abscission in chili pepper contributes to nutrient remobilization during stress and to avoid large loss through transpiration.