

**EVALUATION OF MORPHO-PHYSIOLOGICAL VARIATIONS IN
WILD RELATIVES OF EGGPLANT UNDER WATER STRESS
CONDITIONS**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

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2016

ABSTRACT

Eggplant (*Solanum melongena* L.) that belongs to Genus *Solanum* and Family Solanaceae is a vegetable crop related to a large number of wild species that are source of variation for breeding programs. This research was aimed to evaluate morpho-physiological variations in selected eggplant wild relatives under water stress conditions. This study was carried out under control environment with twelve accessions of eggplant wild relatives (*S. insanum*, *S. anguivi*, *S. torvum*, *S. dasyphyllum*, *S. lichtensteinii*, *S. sisymbriifolium*, *S. incanum*, *S. linnaeanum*). Three water levels, 100%, 50% and 25% of daily water requirement were used as treatments for five weeks and data were collected from five to seven weeks after transplanting. Results revealed that plant height, relative water content in leaves and shoot to root length ratio were reduced significantly in all wild relatives. Number of prickles and leaf area did not show any significant variations. There was a significant interaction between treatments and accessions in relative greenness and number of leaves. In interaction effect, two accessions reduced their number of leaves significantly at 50% and 25% water levels. Seven accessions reduced their number of leaves at 50% without any significant difference between 50% and 25% levels. Three accessions were reduced their number of leaves when water level was reduced up to 25%. Five accessions reduced their relative greenness at 50% but they did not show significant difference between 50% and 25% levels. When five accessions reduced their relative greenness only at 25%, two accessions did not show any significant variation under different treatments. Wild relatives change and reduce their height, relative water content in the leaves, shoot to root length ratio and each interact with different water levels up to 25% of water requirement differently and change relative greenness and number of leaves. Number of prickles and leaf area are species-specific traits.

Keywords: Eggplant, Morpho-Physiological Variation, Water stress conditions, Wild Relatives