Japanese journal of crop science

The Crop Science Society of Japan Info Link

TOP > Journal List > Available Issues > Table of Contents > Abstract

ONLINE ISSN: 1349-0990
PRINT ISSN: 0011-1848

Japanese journal of crop science
Vol.65 , No.1(1996)pp.93-97

[Full-text PDF (597K)] [References]

Effect of Drought During the Establishment Period on the Root System Development of Cassava

Jose R. PARDALES Jr. and Celia B. ESQUISEL

1) Philippine Root Crop Research and Training Center, Visayas State College of Agriculture

2) Philippine Root Crop Research and Training Center, Visayas State College of Agriculture

[Received: 1995/01/26]

[Published: 1996/03/05]

[Released: 2008/02/14]

Abstract:

The effect of different time and duration of progressive drought on cassava, during the establishment stage, i.e., from planting to about three months after planting, was studied with special attention to root system development. Plants exposed to drought, regardless of whether early (from 9-44 days after planting (DAP)) or late (from 44-82 DAP), in the establishment period had significantly fewer leaves and lower shoot dry weight (DW) than well-watered controls. Late droughted plants manifested similar inhibition of shoot growth with those continuously droughted from 9-82 DAP. With regards to root development, early drought caused reduction in the number and length of adventitious roots, number of first, second and third order lateral roots and total root DW. The value of these parameters generally increased after the plants were rewatered. Late drought caused reduction in the number and length of the adventitious roots, and the number of first and second order lateral roots, but not the third order lateral roots, which appeared to be promoted instead by drought. The total root DW also increased in late-droughted plants due to the thickening of adventitious roots. Overall, the results show that cassava has sensitivity to drought stress during its establishment period.

Keywords:

Adventitious root, Cassava, Drought, Lateral root, Manihot esculenta, Root development

[Full-text PDF (597K)] [References]