

RESEARCH ARTICLE

Chlorophyll stability index : A rapid method of screening chilli accessions to drought under tropical conditions

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SUMMARY

Chilli is one of the important spices as well as vegetable crops of India and worldwide, which is predominantly grown as a rainfed crop in southern states of India, but now-a-days there is a drastic rise in temperature which affects the availability of water for irrigation. Chlorophyll plays a vital role in photosynthesis. But, they are highly thermosensitive in nature and degradation occurs when subjected to high temperature. So, for this changing environment there is an urgent need to breed heat tolerant varieties. Chlorophyll stability index (CSI) is a function of temperature and is inversely related to the degree of stress conditions imposed on the plants. So the stability of chlorophyll pigments can be correlated with drought tolerance. So, CSI can be a rapid screening method of chilli genotypes for drought tolerance or susceptibility. We observed that, among genotypes used in the study M106 showed higher mean CSI value of 88.41 per cent followed by F02 (86.56%) and M08 showed least CSI value of 42.47 per cent. We can deduce that, M106 can be used in future breeding programmes for evolving drought tolerant chilli varieties, so that we can bring more acreage under chilli cultivation under rain fed cultivation in India.

Key Words : Chlorophyll stability index, Rapid method, Screening chilli accessions

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