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[home](#) [page](#) [about us](#) [contact](#)

[us](#)

Table of Contents

IN PRESS

CJGPB 2014

CJGPB 2013

CJGPB 2012

CJGPB 2011

CJGPB 2010

CJGPB 2009

CJGPB 2008

CJGPB 2007

CJGPB 2006

CJGPB 2005

CJGPB 2004

CJGPB 2003

CJGPB 2002

CJGPB

Home

Editorial Board

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for
Authors**
- **Copyright
Statement**
- **Submission**

For Reviewers

- **Guide for
Reviewers**
- **Reviewers
Login**

Subscription

Czech J. Genet. Plant Breed.

Yang L.J., Xian Z.H.:

**Assessment of
drought tolerance of
some *Triticum* L.
species through
physiological indices**

Czech J. Genet. Plant Breed., 48 (2012):
178-184

Wheat is one of the most important crops in the world. Its yield is greatly influenced by global climate change and scarcity of water in the arid and semi-arid areas of the world. So, exploration of gene resources is of importance to wheat breeding in order to improve the crop ability of coping with abiotic stress environment. Wild relatives of wheat are rich repositories of beneficial genes that confer tolerance or resistance not only to drought but also to other environmental stresses. In the present study, the changes in leaf relative water content (RWC), free proline content, and malondialdehyde (MDA) accumulation of

five wild wheat species including *T. boeoticum* (YS-1L), *T. dicoccum* var. *dicoccoides* (YS-2L), *T. araraticum* (ALLT), and two cultivated varieties of *T. turgidum* ssp. *durum* (MXLK and 87341) with two well-known common wheat cultivars (SH6 and ZY1) possessing strong drought resistance and sensitiveness, respectively, as references were investigated during 3-day water stress and 2-day recovery, in order to assess the drought tolerance of these wild wheat species. The laboratory experiment was conducted under two water regimes (stress and non-stress treatments). Stress was induced to hydroponically grown two weeks old wheat seedlings with 20% PEG 6000. Stress treatment caused a much smaller decrease in the leaf RWC and rise in MDA content in YS-1L compared to the other wheat species. From the data it was obvious that YS-1L was the most drought tolerant among studied species having significantly higher proline and RWC while lower MDA content under water stress conditions.