



## Storage duration and temperature of hydroprimed seeds affects some growth indices and yield of wheat

Zeinab Farajollahi and Hamid Reza Eisvand\*

*Department of Agronomy and plant breeding, Lorestan University, Khorram Abad, Iran*

### Abstract

One of the methods for achieving more yields is to use seed priming technique correctly. When it comes to using seed priming, practically important issues should be taken into account including interval between priming to planting and conditions for storage of primed seeds. Thus, it is very crucial to be informed of duration and temperature for storage of primed seeds. This research seeks to compare the effect of temperature and duration of hydroprimed wheat seeds (var Kouhdasht) on growth indices and grain yield. This test was carried out with three replications in Research Farm of Agricultural Faculty of Lorestan University, as completely randomized block design. The relevant factors include storage temperature (15, 20 and 25° C) and storage duration of hydroprimed seed (0, 2, 4, 6, and 8 days). The results showed that hydropriming increased number of productive spike and grain yield. Nevertheless, delay (8 days storage) in planting and storage seeds at high temperature (25° C) could decrease benefits of priming. Storage temperature and duration of hydroprimed seeds affect morpho-physiological characteristics as well as yield. Seeds stored at 15 and 20° C showed a better yield than those stored at 25° C. Primed seeds stored at 20° C for 2 days showed a better performance than the other applied treatments.

*Key words:* seed storage; priming; leaf area index; wheat; yield

**Farajollahi, Z. and H. R. Eisvand.** 2016. 'Storage duration and temperature of hydroprimed seeds affects some growth indices and yield of wheat'. *Iranian Journal of Plant Physiology* 7 (1), 1909-1918.

### Introduction

Wheat (*Triticum aestivum* L.) is the most important foodstuff that supplies a considerable part of human food demand in various countries of the world, especially in the developing countries. Economic importance of wheat in terms of either production or nutrition is more than other crops and it may be cultivated in areas where other plants cannot be cultivated

(Shabestari, 2001). Throughout the world, sixteen percent of the cultivated lands are allocated to wheat that produces more than 709 million tons. In Iran, half of farming lands are allocated to wheat: 6.65 million hectares that produce 14 million tons of wheat (FAO, 2013).

Seed germination is one of the most important phenological stages of crops which determines success of agro-ecosystems. This stage is highly affected by environmental conditions and quality of seed (Soltani et al., 2007). Hence, seed quality improving by applying some treatments before planting is suggested by

\*Corresponding author

E-mail address: [eisvand.hr@lu.ac.ir](mailto:eisvand.hr@lu.ac.ir)

Received: October, 2015

Accepted: May, 2016