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"Global food security and food safety:
The role of universities"

Drought Stress and Food Security in South Khorasan Province, Iran; A Case Study: Millet

Mohammadjavad Seghatoleslami[1], Hassan Feizi[2]

[1] *Birjand Branch, Islamic Azad University, Dept. of Agriculture, Iran*
[2] *University of Torbat Heydarieh, Plant Production Department, Iran*

Abstract

Food security is defined as existing when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious feed to meet dietary needs for a productive and healthy life. Global climate change cause drought stress severity in the world. Drought stress has an impact on crop and food production. Thus it is a serious threaten for food security. Recently in South Khorasan province, Iran, drought has declined the yield in almost all of crops. Changing planting pattern to drought tolerant plants, at this condition is a suitable strategy. Due to their short growing season, millet has become well adapted to drought. On the other hand, these plants has an important role in human nutrition directly and indirectly. Thus millet are suitable choice for food security. Over the recent years many experiments have been conducted on ways to increase drought stress tolerance in millet by author and colleagues. At these experiments the possibility of using physical and chemical inputs and also crop improvement methods in increasing drought tolerance were been studied. The millet were forage millet (nutrifeed, Pennisetum americanum), foxtail millet (Setaria italica) and common millet (*Panicum miliaceum*). These millet species, in particular, have recently been considered by farmers in South Khorasan province, Iran. They produce acceptable yield under drought conditions. The effect of nitrogen, potassium, nano zinc oxide, nano silicon, and nano iron particles and also super absorbent polymer under drought stress conditions on the millet species were studied in different experiments. Totally the millet responded to the treatments differently. Also the effect of nano treatments in increasing drought tolerance was lower than expected.

Keywords: Drought, millet, nano particle, silicon, superabsorbent

Contact Address: Mohammadjavad Seghatoleslami, Birjand Branch, Islamic Azad University, Dept. of Agriculture, Ghaffari, Birjand, Iran, e-mail: mjseghat@yahoo.com