**Tropentag, September 9-11, 2020, virtual conference**

"Food and nutrition security and its resilience to global crises"

# Effect of Awn on Water Use Efficiency of Wheat

Recep Karakoç, Özgür Tatar

*Ege University, Fac. of Agriculture, Dept. of Field Crops, Turkey*

**Abstract**

Increasing frequency of drought conditions comprising grain filling period of wheat in Mediterranean region more often limits grain yield. Although several phenotypic traits to increase grain yield during terminal drought conditions have been reported, effects of awn, the thread-like extension of lemma, on dry matter assimilation during grain filling stage under limited water conditions has been still not clear. In the present study, awns of bread wheat (*Triticum aestivum* L.) and durum wheat (*Triticum durum* L) were removed at post-anthesis stage to assess their effects on water use efficiency and dry matter assimilation under rainfed and irrigated conditions. Grain yield was higher in awned than awnless bread wheat in both rainfed (16 %) and irrigated (9 %) conditions. However, there were no significant changes in grain yield of awned and awnless durum wheat under rainfed conditions while awns had positive effects on grain filling under irrigated conditions (17 %). Awned bread wheat had higher water use efficiency (WUE) in both conditions (19 % and 12 %) while WUE of awned drum wheat was only higher under irrigated conditions (21 %). Our findings suggested that xeromorphic structure of awns could be an advantageous for grain yield under water deficit conditions. Similar responses of awned and awnless durum wheat under rainfed conditions were perceived as the different adaptation abilities of drum wheat to limited water conditions.

**Keywords:** Awn, *triticum aestivum*, *Triticum durum*, water use efficiency, wheat

**Contact Address:** Özgür Tatar, Ege University, Fac. of Agriculture, Dept. of Field Crops, İzmir, Turkey, e-mail: tatar.ozgur@gmail.com