

Effect of awn on water use efficiency of wheat

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MOTIVATION

- Drought conditions during grain filling stage 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 threadlike extension of lemma, on dry matter assimilation during grain filling stage under





limited water conditions has been still not clear.

AIMS

- Understanding effects awn on wheat during grain filling stage under different water regimes.
- Comparing water use efficiency of wheat with and without awn.
- Assessing if awns have different impacts on adaptation ability of two wheat species, bread (*Triticum aestivum* L.) and durum (*Triticum*) *durum* L.), to limited water conditions.

METHOD

- Field experiment were conducted during 2018-19 growth season in Izmir-Turkey.
- Two cultivars, cv. Şölen (*Triticum aestivum* L.) and cv. Ege99 (*Triticum durum* L.), were cultivated.
- Plants were grown under Irrigated (487 mm) and rainfed (373 mm) conditions.
- Plot size was 3.5 x 2.4 m with 4 replications

CONCLUSIONS

- Our findings suggested that xeromorphic structure of awns could be an advantageous for grain yield under water limited 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.
- WUE was generally higher in awned plants. Existance of awns had no effects on WUE of drum wheat only under rainfed (limited water) conditions.



- 140 kg/ha N, 70 kg/ha P, 70 kg/ha K were used as fertilizer
- Awns were removed form 110 spikes from each plot (144 DAS)





- Every week 10 spikes were harvested from each plots after awns were removed (144 DAS)
- Rachis, grain, bracts and



awns were seperated and dry weights of these parts were determined for every harvesting time.





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