

عنوان مقاله:

Differences between Water Extraction Patterns of Three Wheat (*Triticum aestivum* L.) Cultivars at Different Soil Depths under Gradually Downward Soil Drying Conditions

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خلاصه مقاله:

In drought prone environments wheat crop growth and production depends strongly on the water stored in the soil before anthesis and, although some water remains in the soil after harvest, plants experience water deficit. In order to investigate whether water ex-traction patterns, as a plant feature, have a regulating effect on the amount of water used by them at different soil depths, three wheat cultivars (Asakaze, BR₉, BR₁₀) differing in origin and drought resistance in terms of grain yield were grown in pots under gradually downward soil drying conditions. The total water used by cultivars was the same up to the post anthesis stage of growth when plants were harvested. However, Asakaze used more water from emergence to the beginning of the stem elongation period of growth and BR₉ used more after that period up to the post anthesis stage. Cultivars showed significant dif-ferences in root length at different soil depths. Asakaze was predicted to use more water from topsoil layers compared to BR₉ and BR₁₀. On the other hand, BR₉ was expected to use more water from deep layers in comparison to Asakaze. These were suggested to be the effect of the higher root density of each cultivar in the top and deep soil layers. It is also suggested that higher root length density in deep soil layers could be targeted as a fa-vorable trait for breeding wheat Cultivars, which are growing under gradually downward soil drying conditions.

کلمات کلیدی:

Wheat, Root, Water extraction pattern

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