



Linking the biology and physics of multifunctional grasses and soil hydrological function

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Sustainable grassland systems need to function during periods of water deficit and excess. Traditionally, forage grasses have been bred for drought resistance and winter hardiness traits. There is a need to select for and grow grass cultivars under drought and water logged conditions, whilst delivering environmental services. A limited number of studies have been carried out on inter-species variability of plant water status and growth during periods of water deficit. However, little is known about how different grasses influence soil profile hydraulic properties. We have established and monitored the influence of grass type on soil hydrological properties and rainfall-runoff relationships. Changes in soil hydrological properties have been monitored using a range of soil physical and geophysical methods. In this paper we report on a large interdisciplinary project that is advancing our understanding of how grass selection may benefit soil hydraulic functioning during periods of water excess.