

Hydrologic properties of grazed perennial swards in semiarid Southeastern Kenya.

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Abstract

Identification of plant resources that persist under grazing pressure, support desirable production levels of and at the same time protection the grazing environment is central to sustainable livestock production' This study assessed the infiltration capacity and soil loss associated with perennial swards subjected to different levels of utilization using simulated rainfall. The hypothesis was tested that grazed perennial swards have similar hydrologic properties and threshold removal levels below which runoff increases markedly. infiltration capacity for the perennial swards increased with increasing stubble height before leveling off towards the highest stubble height. A 50% removal of current growth was the upper limit above which runoffs from the swards increase rapidly. Aggregate stability, organic carbon and percent ground plant cover were the most significant attributes that influenced infiltration capacity. Panicum maximum and Enteropogon macrostachyus were the most suitable perennial swards with favorable soil physical properties and infiltration capacities in the study area. The results support the existence oi a threshold level of sward stubble height for minimizing runoff