

Growth analysis of forage sorghum (*Sorghum bicolor* L) varieties under varying salinity and irrigation frequency.

ABSTRACT

Growth of forage sorghum [*Sorghum bicolor* (L.) Moench] varieties was assessed under saline conditions (EC 0, 5, 10, 15 dS m⁻¹) and irrigated when the leaf water potential reached -1(control), -1.5 and -2 MPa. The forage sorghum varieties namely Speedfeed and KFS4 were differed significantly for emergence, leaf area index, relative growth rate and net assimilation rate. Plants grown under water stress and saline conditions resulted in decreased leaf area which subsequently led to reduced plant growth. Infrequently watered sorghum plants had reduced dry mater, LAI, NAR and eventually dry matter yield. These reductions were higher when lower irrigation frequency was coupled with salinity. The highly significant declined was mostly at -2 MPa irrigation frequency. This indicates that irrigation at 2 weeks interval or till leaf water potential reaches to -1.5 MPa, is possible for forage sorghum.

Keyword: Salinity conditions; Irrigation frequency; LAI; NAR; Sorghum; Growth.