



## SPECTRUM

### Sorghum and chickpea energy utilization under poor rainfall conditions in semi-arid tropics

Production data of rainfed sorghum and chickpea for 10 years were investigated. The total input energy required for cultivation of sorghum and chickpea in rainfed vertisols was 5,714 and 7,303 MJ per ha, respectively. During deficient rainfall years, around 49 and 63% decline in output energy was observed in sorghum and chickpea production. Energy efficiency scores were 3.15 and 3.54 for sorghum and chickpea under normal rainfalls, but declined to 1.75 and 1.45 under deficient rainfalls. On the basis of the B:C ratio and energy efficiency, chickpea has been found more promising in the semi-arid Vertisols, although additional fodder availability from sorghum straw cannot be ignored.

Higher dry matter efficiency of 0.702 was observed in medium-duration cultivars, and water-use efficiency was higher in short-duration cultivars, followed by medium-duration cultivars, which are found more suitable for semi-arid tropics (SAT) region in *rabi* (winter) season on residual soil moisture in Vertisols.

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