Jayaram, N.S. 1988. Response of Sorghum to rainfed and runoff farming as affected by nitrogen rates and weather conditions. National Symposium on Recent Advances in Dryland Agriculture, CRIDA, Hyderabad, Sept. 13-16, 1988.

A study of sorghum (SPV-86) was conducted on a calcareous vertic clay soil of northern Karnataka to determine the response of sorghum to nitrogen application under rainfed and runoff farming, in terms of grain yield, runoff water use efficiency and recovery of fertilizer nitrogen. Over the 3 years period of the experiment, average annual yield increases were 524 kg/ha for runoff recycling and upto 1173 kg/ha for the nitrogen levels. Synergistic yield increases upto 1775 kg/ha was witnessed. The runoff utilisation efficiency expressed in terms of yield increases/ha cm of water increased as the rate of fertilizer N increased. It was 99.7, 118.0, 180.8 and 246 kg corresponding to 0 N, 30 N, 45 N and 60 N, respectively. Further, the runoff utilization efficiency was influenced by weather extremes, experienced in the years of study. The efficiency decreased in wet season. It was 95.6, 47.6 and 342.4 kg correspondingly during moderate, wet and stress years. The relationship between runoff utilization efficiency and nitrogen application (q/ha) across 3 years was worked out to be Y= 0.8100+2.3964 X with 'r' value of 0.9204. However, when relationship was worked out for the individual years, it was found that 'r' value for the wet year 1983 remained low (r = 0.3205).