ABSTRACT

The volume balance approach gives the reliable estimation of uniformity and efficiency by considering soil parameters. The present experiment was conducted at Junagadh Agricultural University on medium black soil in groundnut crop with six broad beds of 0.6 m wide each and five furrows of top width of 0.5 m each of 15 m long through volume balance approach with different discharge. The furrow geometry was measured by furrow profilometer and corresponding furrow parameters were calculated. The maximum average application efficiency ($E_a$), deep percolation ratio and tail water ratio were found to be 66.52 per cent, 1.12 and 32.41, respectively at 1.50 lps/m discharge. The study showed that the field irrigation system should be designed properly for getting the maximum efficiencies and to reduce deep percolation and tail water losses. The poorly designed system may lead to losses of water more than 50 per cent.