

Plain English Summary.

Deep drainage of cotton based rotation systems were estimated on two soils in the Macquarie Valley: on a heavy cracking clay at "Auscott", Warren and on a hard setting red soil on the Twynam property "Elengerah", near Trangie. Analysis of soil chloride profiles at the beginning and end of the 18 month rotations showed that none of the systems were maintaining chloride levels at a steady state (ie. The mass of the solute applied to the soil profile was not equal to the mass of the solute leaving the profile). Water entry into the soil profiles decreased markedly after the first irrigation in the hard setting red soil. Estimations of deep percolation were made on all rotations. In both soils, the treatments not including a winter crop had a substantially higher calculated deep percolation. The calculated deep percolation was much higher on the cracking grey clay than the hard setting red soil.