INTRODUCTION

Alfisols and Vertisols are two of the most important soil orders found in the semiarid tropics. In these regions precipitation exceeds potential evapotranspiration for 2 to 7 months per year (Troll, 1966). Alfisols cover the largest area and are found extensively in India (72 million ha) and in many countries of East and West Africa, in northeast Brazil, and in northeast Thailand (Cocheme & Franquin, 1967; FAO, 1974). Vertisols cover about 64 million ha in India and occur in large areas of East and West Africa. Alfisols and Vertisols differ greatly in their physical, chemical, and biological properties. These differences have a significant effect on their soil-air-water relationships; the retention, movement, and release of water; runoff and drainage properties; and responsiveness to management.

Although Alfisols and Vertisols may occur in close association, their management requirements are distinctly different. The most striking example of this is the farming practice of cropping Alfisols only during the rainy season and cropping deep Vertisols only during the postrainy season. The management requirements are related to differences in type and amount of clay, workability, moisture-holding capacity, and other associated characteristics.

The purpose of this paper is to discuss specific properties of Alfisols and Vertisols in relation to water intake, runoff, and erosion in order to better understand the management requirements for farming systems that are scientifically sound and economically viable, especially under condi-