

**DETERMINATION OF SOIL PROPERTIES IMPORTANT TO COTTON IRRIGATION MANAGEMENT
FOR SIMPLE VARIABLE RATE IRRIGATION**

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Abstract

Cotton producers in Tennessee with the ability to irrigate recognize soil variability in their fields. During a busy growing season, however, irrigation is often managed with a single field decision. We want to investigate potential benefits of multiple irrigation decisions within a field and demonstrate to producers what methods can be used to delineate irrigation zones. If we can demonstrate to producers that data they may already have or that could be easily obtained are useful tools for irrigation zoning, it could encourage adoption of simple variable rate irrigation. In working toward implementation of simple variable rate irrigation with producers, we have intensely soil sampled several fields and monitored soil moisture throughout growing seasons. We will take a look at four fields, two upland soil and two bottom soil, and our approach to zoning each field. Compared to the soil properties maps, we have looked for easily attainable data that correlates, like yield maps, EC, aerial imagery, etc. Looking at soil moisture differences during a growing season in two different soil zones can further reinforce the notion that multiple irrigation decisions could be beneficial.