

EARLY SEASON N FERTILIZATION OF COTTON IN ARKANSAS

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Nitrogen (N) fertilization is a critical component of successful cotton (*Gossypium hirsutum* L.) production in Arkansas. Pre-plant N fertilizers are used by producers to meet early season N requirements. Stand loss of cotton and subsequent replanting with legume crops may eliminate the need for fertilizer N. Further, Spring weather conditions may reduce crop uptake of N by increasing leaching and denitrification. Delaying N fertilization until the crop reached the two true leaf stage is a possible method for increasing fertilizer N efficiency. Studies were conducted for four years (1995 - 1998) at the Southeast Branch Experiment Station near Rohwer, AR on an Hebert silt loam soil (fine-silty, mixed, thermic Aeric Ochraqualfs). N-rates tested were 0- and 100 lb N/acre with full rates and split applications (50 lb N/acre/application) made pre-plant, at two true leaves, and first square. Yields were not significantly reduced any year by delaying the N application from pre-plant. Yields were significantly increased some years by delaying N fertilization past pre-plant. It is presumed that by delaying fertilization much of the spring time leaching and denitrification conditions were avoided. Additionally, seedlings were growing vigorously when the N was applied after emergence and at first square.