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CHEMICAL MUTAGENESIS AS A TOOL IN DEVELOPING A SHORT SEASON COTTON GENOTYPE FOR THE TEXAS PANHANDLE

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Abstract

Chemical mutagenesis was used to develop eighteen cotton genotypes that produced mature cotton fiber in a short growing season in Lubbock, TX. In 2000 and 2001 these eighteen mutants were tested in replicated field studies with 7 check varieties. Planting date was 3 July each year. The mutant Holland 338-6 yielded 822 lbs/acre and showed exceptional fiber quality and a gross return of $437/acre. PM183 is the earliest maturing commercial check variety available and was out-performed by several mutants in loan value and two mutants in yield. Other mutants such as Holland 338-9 and Sphinx-4 showed high loan values and similar yields to the parent varieties and hold potential for use as short season varieties. The number of heat units accumulated in a short season in Lubbock, TX is comparable to a standard growing season further north in the TX Panhandle and these varieties have potential to expand the traditional cotton production area northward.