RNAi PHTYOCHROME MODIFICATION EFFECTS ON COTTON FIBER AND YIELD

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Abstract

Seed of Coker 312 cotton plants have been transformed using PHYA1 RNAi technology and when grown in Uzbekistan they showed increased earliness, higher yields, longer and stronger fibers. The trait was also shown to be transferred through sexual hybridization with Uzbekistan cultivars. These cultivars also showed these same improvements. We planted the transformed Coker lines in the greenhouse at Mississippi State, MS in October 2014 under APHIS notification 14-153-102n. This is the first time these transformed plants have been grown in the United States. We will make the first preliminary report on growth parameters of the transformed Coker lines when grown in greenhouse in United States. These plants are being crossed to several elite United States cultivars and breeding lines with a range of fiber properties to determine their potential for improvement of these lines. This is promising technology that should be of great interest to the cotton breeders in the United States. Our report will be of primary interest to those in the Cotton Improvement Conference.