2004 BELTWIDE COTTON CONFERENCES, SAN ANTONIO, TX – JANUARY 5-9

BALE MOISTURE ADDITION WITH A ROTOR SPRAY SYSTEM

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Abstract

Tests were conducted using a rotor spray system to apply moisture in the form of fine water droplets to cotton lint at the lint slide just before bale packaging. Initial cotton moisture content ranged from 5.0 to 5.5%, dry basis. Bales in this study will be stored for 3, 6, and 12 months and cotton quality degradation determined after each of these three storage periods. Seven levels of moisture addition are being studied, including 6.5, 7.0, 7.5, 8.0, 8.5, 9.0, and 11.0 % moisture (after rewetting), in addition to bales with no additional moisture added. Although both rotor spray systems and atomizing nozzle spray systems add moisture as water droplets, a rotor spray system will generally apply moisture more uniformly across the width of the lint slide, and will produce a finer droplet size than would an atomizing nozzle system. However, rotor spray systems have more moving parts, and must mount closer to the lint batt as compared to an atomizing nozzle system. Both spray systems produce a fine water mist that does not penetrate the lint batt nearly as well as steam. Results from the storage study of the rotor spray system will be published when the storage times have been completed.