

Comments on the Control Bale Water Spray Technique

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To be posted on certifiedcotton.com.

To: All Concerned About Good Cotton Ginning Practices

It has come to my attention that a revised method of a previously discredited water spray moisture restoration method intended for lint cotton has been devised. It is the position of Samuel Jackson, Inc. to never advocate the application of water to cotton lint by spraying the water onto the lint. We make no exception in regard to this revised method. This paper will rebut, point by point, the claims made for the revised method of water spray moisture restoration which we will term "The Control Bale" method.

Water spray methods seem to be easily popularized for bale moisture restoration because they employ no energy consumption for vaporizing water and it is easy to measure the volume of water applied in the restoration process, 100% of which goes directly to the cotton fiber. Some cotton producers and ginners focus primarily on the benefits of selling water for the price of cotton. This attitude often leads to shortcuts in the moisture restoration process, such as water spray methods of this type.

A common problem that water spray users complain of is the lack of a reliable method of measuring the final bale moisture when using water sprays. Application of the moisture by this method is inherently non-uniform, making most methods of measurement unsuitable and inaccurate. This includes measurement by resistance probes as well as measurement by microwave scanning techniques. Although I am certain that readers of this memo have already seen it, Neil Turner prepared an excellent video in 2006 documenting problems which arise from water spray methods and the difficulty of measuring bale moisture following water spray applications. This is posted at certifiedcotton.com.

This measurement difficulty has given rise to the concept of "control bale" measurement and restoration. In this method, the water spray is turned off at periodic intervals and a dry bale is measured with an accurate microwave scanner, like a Tex-Max. This dry bale is termed, "the control bale". Following measurement of the dry bale, it is obviously a straightforward process to calculate the volume of water required for subsequent bales in a water spray application process. For instance, if the dry bale measures 4.5% wet basis moisture and target bale weight is 500 pounds, 15 pounds of water might be sprayed onto the lint of each subsequent bale to bring final bale moisture up to 7.5%, a figure endorsed by the National Cotton Council of America, the Texas Cotton Ginners Association, the Southern Cotton Ginner's Association, and the US Department of Agriculture, all of whom incidentally, have offered at least tacit approval of water spray moisture restoration methods. All of these organizations have members who have either engaged in the practice in the past or continue to spray water on lint cotton prior to baling. The

practice continues today, even in light of the knowledge of the damage this practice has caused.

An uncontrolled variable in this control bale process is the amount of moisture in the raw incoming cotton to the gin and the drying temperatures used in the gin's drying and precleaning system. For example, if a control bale measurement is made on a bale from a relatively dry module, a subsequent wet module entering the ginning process could result in a bale moisture significantly higher than the approved 7.5%. Ironically, people considering this irresponsible method think to make use of devices like the Sam Jackson Moisture Mirror, or similar, to monitor incoming cotton moisture and drying temperature, and use this information to determine optimum timing for turning off the water spray device and taking a control bale measurement for recalibration of the spray volume. Such abuse of one of our products designed specifically to facilitate responsible moisture restoration methods is particularly offensive to both me and our team.

Operators of this control bale method of water spraying cotton bales will be able to honestly respond to inquiries by Samuel Jackson representatives that they are not "using the Tex-Max microwave device on bales treated with water sprays". This is because technically, they are using them only on dry bales (the control bales). They will therefore, be able to sign contracts and disclaimers mandating this stipulation in good conscience. It is a clever twist that permits them to avoid lying while making use of some of our most advanced restoration technology to assist them in their moisture restoration shortcut.

There is little doubt in my mind that many cotton gin technical people with even rudimentary electrical and PLC skills will be able to devise low cost water spray devices that precisely measure the water flow going to a set of spray nozzles, monitor the ginning rate, and apply the amount of water needed to bring final bale moisture up to 7.5%. I suspect that the economic conditions we find ourselves in today will simply serve to accelerate this unfortunate practice. The temptation to do this using only relatively low cost devices like the Tex-Max microwave scanner and the Moisture Mirror with an incoming universal resistance sensor may be overwhelming to some in our industry.

Everyone on the Sam Jackson Team realizes that the concept of spraying what amounts to almost two gallons of water on a cotton bale and selling that water for the price of cotton is both morally and ethically reprehensible, particularly when the practice brings no benefits to the ginning or bale pressing process, other than increasing lint turnout. It will be our continuing task to insure that this message reaches those that presently think otherwise and bring them back to the fold of good cotton ginning ethics and practices.

Chris Jackson
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