IMPACT OF HARVEST AID TIMING AND MACHINE SPINDLE HARVESTING ON NEPS IN UPLAND COTTON

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Abstract

Neps are fiber entanglements created during the mechanical processing of cotton and are often associated with immature fibers. Even in small amounts neps can affect textile quality and cotton marketability. Machine harvesting, lower fiber linear density (fineness), and more immature bolls at harvest, are factors that contribute to neps. However, it is not clear whether differences in fiber linear density or immature bolls at harvest combine with harvest method to substantially affect neps. The aim of this study was to compare machine spindle and hand-harvested cotton collected from four field studies with treatments that differed in % immature bolls and fiber linear density at harvest resulting from differences in harvest aid timing and to test for statistical interactions. By systematically varying the timing of harvest aids to cease crop growth, removing fruiting branches, or both, differences in % immature bolls and fiber linear density were generated. In all studies spindle harvesting increased neps, but there were no significant statistical interactions between the harvest method with harvest aid timing or branch removal treatments. When all measurements of neps were combined across studies there was a multiple regression that explained the level of neps with harvest method and fiber linear density (R^2=0.66) (Figure 1). These responses supported the individual season analyses finding no statistical interaction of harvest method with either variable. Spindle harvesting increased neps by an average of 53 count/g compared to hand-harvesting. Identifying reasons for differences in nep levels between cotton growing regions, may assist in developing strategies to reduce neps. The full description of this work is available in Bange and Long (2012).

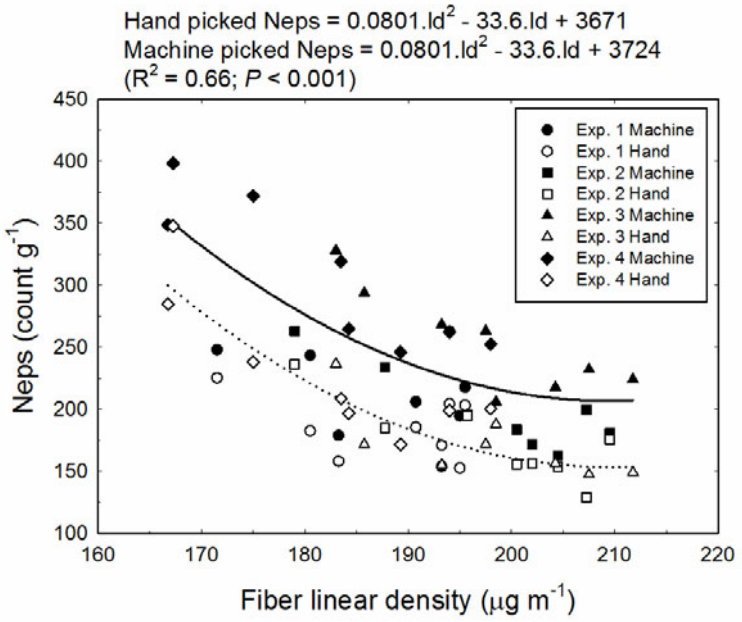

Figure 1. The relationship of fibre linear density (ld) and total neps for hand (open symbols) and machine harvested cotton (closed symbols). Regressions are fitted to the combined data of all four experiments.

References

Bange, M. P. and Long, R. L. 2012. Impact of harvest aid timing and machine spindle harvesting on neps in upland cotton. Tex. Res. J. 1 0: 1-8. DOI: 10.1177/0040517512461704