Comparison of Cotton-based Hydro-mulches and Conventional Wood and Paper Hydro-mulches – Study 2

Authors: Greg Holt, Mike Buser, Daren Harmel, and Ken Potter
Pages: 128-134
Engineering and Ginning

Full Text PDF (204K)

The erosion of soil from steep slopes, bare soil, or construction sites can create gullies that adversely impact fish and wildlife in the surrounding environment and limit the ability of vegetation to become established. Mulches have been one means of mitigating the effects of erosion. Mulches that are commonly applied to disturbed soil or steep slopes with a hydro-mulcher are commonly known as hydro-mulches and are most often made from wood and paper. In this study, conventional wood and paper hydro-mulches were compared with cottonseed hulls and three types of processed cotton gin by-products. The mulches were applied at two rates, 2241 and 3362 kg/ha (2000 and 3000 lb/a). An unconsolidated sandy clay loam soil on a 9% slope was subjected to a 10.41-cm/h (4.1-in/h) rain event. The response variables investigated were mulch loss (as percentage of applied), soil loss, and mulch coverage factor (C-Factor). The initial C-Factors for the cotton-based mulches were lower than the wood or paper mulches, but the cotton-based mulches performed equal to or better than the conventional wood and paper mulches in reducing soil erosion. Overall, the cotton-based mulches showed promise in erosion control applications, but refinement of the product is needed in order to produce a hydro-mulch that provides soil coverage equal to conventional wood hydro-mulches.

The Journal of Cotton Science is published four times a year by The Cotton Foundation.
Articles are available as Adobe PDF files and can be viewed with the free Adobe Acrobat Reader.