Using artificial neural network to predict cotton fiber strength*

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Abstract

The strength of fiber is considered on of the most important properties which distinguish the cotton fibers from each other. also It considers important variable to assess the quality of fiber with observation that it has a direct impact on yarn strength which is produced from this fiber .

This research aims to provide a way to predict the strength of cotton fiber by using ar tiFical neural networks. (short fiber index, fiber fineness, uniformity of fiber length, fiber length, number of neps, trash content were seleeted as inputs to neural networks, while the strength of cotton fiber as a output of the neural Network .

Data sets (103 set) were collected from the Generd Company for cotton yarn (coast) – Lattakia. These data sets entered the ANN and results recorded.

Results show that the prediction method using artificial neural networks is effective and successful. Comparison were made between the neural network output and laboratory findings, and the ratio of an internal fault in the performance of the network was about 1.1%.

Keywords: strength of fiber, the neural network, cotton, prediction.

* For the paper in Arabic see pages (161-174).

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