Programming(GEP), generally called intelligent techniques, were used to predict the count-strength-product (CSP).

Fibre properties such fibre strength (FS), micronaire (M), the upper half mean length (UHML), fibre elongation (FE), the uniformity index (UI), yellowness (Y), greyness (G) and short fibre content (SFC) are used to predict the CSP. The prediction performances have been compared to those provided by the classical Linear Regression (LR) model. Graphs illustrating the relative importance of fibre properties for CSP have been plotted. Fiber strength (FS) was ranked first in importance as a contributor to CSP by the five models, fibre elongation (FE) ranks second, and the remaining fibre properties do not contribute significantly to CSP.

In order to qualitatively study the effects of fibre properties on yarn strength, response surfaces plots were generated using the relationships obtained. The comparison with conventional methods indicated that these new approaches worked better in the prediction of yarn strength. The study has synthetised all the main new intelligent methods in order to evaluate and compare their performances. This will facilitate engineers, with respect to the type of the data, in choosing an appropriate and powerful model.

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