

**Table 5.** Effect of machine type on its optimum settings to achieve maximum strength of mercerized yarn; Error term is the mean square (Error) = 246700. a) Uses harmonic mean sample size = 1224. b)  $\alpha = 0.01$ .

Duncan <sup>a,b</sup>		
Machine	N	Subset
		1
Machine 2	1224	877.2
Machine 3	1224	878.1
Machine 1	1224	896.0
Sig.		0.381

of combed/carded yarns increases or decreases, respectively.

- The effect of the wetting agent concentration is elevated by decreasing the yarn linear density and/or increasing the number of plies.
- The effect of the cold rinsing temperature is more obvious in higher quality yarns and fibres. The effect of the cold rinse temperature on Egyptian and Uzbek cotton combed yarns is more obvious than for carded yarns spun from Iranian cotton fibres.
- Statistical analysis shows that fibre type, yarn structure (carded/combed)

and the number of plies have a significant effect on the optimum settings of the mercerising machine in achieving the maximum strength of mercerised yarn, while the linear density of single yarns and the mercerising machine type have no significant effect.

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## INSTITUTE OF BIOPOLYMERS AND CHEMICAL FIBRES LABORATORY OF METROLOGY

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