Based on the optimal mordanting condition, the falling rate of fibre strength is relatively big, but fibre fineness and fibre crimp properties were apparently not damaged after bleaching. Meanwhile, due to the damage effect on the fibre internal structure, frictional properties of the fibres were also influenced.

During the spinning process, based on the damage degree of bleached yak fibres, the levels of wool lubricating oil, yarn twist, spinning gauges, and machine speeds were adjusted. The results show that the differences between these two yarns’ evenness and hairiness are small. Furthermore the falling rate of strength, elongation and tenacity are 8.23%, 8.90% and 8.35%, which can all be acceptable for industrial production.

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References


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