The Production of cotton yarns with open-end spinning with excellent quality and cost

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Abstract:

Open end spinning is one of the final spinning techniques used in the production of cotton yarn, and is characterized by increased production and reduced economic cost, and due to the low spread of open-end yarn technology, and limited production despite the low cost and the impact of its use in the production of cotton yarn of different types on the characteristics and performance This study was conducted in order to study the production of different cotton yarns with the system of open-end yarn with better properties in functional performance and economic cost, by producing (12) samples of cotton yarn of different number and composition, with open-end spinning, producing (6) samples of cotton yarn for the same number, with ring spinning, with different yarn number 30/1, 16/1, 20/1, 24/1, 6.5 / 1, 4/1, and conducted Different tests on yarns to illustrate the effect of using the open-end yarn in the production of the yarn under study compared to the technique of ring spinning yarn in their production, the results showed a clear difference in some yarn tests such as tensile strength and coefficient of variation Research in identifying the best types of yarns produced by the system of open-end yarn, reflected on Their performance, after analyzing the results of tests statistically, It is among the results Tensile strength values and RKM values for raw materials 50% cotton : 50% exhausts exhaust higher than the cotton exhaust. (Exhaust cotton and mix cotton with exhaust), Values of naps, thick places, and the thin places of the material 50% cotton: 50% exhausts less than exhausts cotton for all samples of the open end, the irregularity of the material was 50% cotton + 50% exhaust less than the raw material exhaust cotton for all open end samples. The quality coefficients of all the research samples showed that the sample number 12 produced by the open-end system of the material 50% cotton + 50% exhaust and the yarn number 4/1 with a quality factor (94.67%) followed by the second sample number 10 produced by the open-end system of the material 50% Cotton + 50% exhaust and yarn number 6.5 / 1 with a quality coefficient (93.68%), and in the third place came the sample number 18 produced by the ring-spinning system of the material No. 13 Produced by ring spinning system of material cotton and yarn number 30/1 quality factor (31.23%).

Keywords: Open end spinning, ring spinning, yarns tests

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