The possibility of processing Burkina cotton in spinning factories and its impact on yarn produced properties

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Cottons Study

The table No (1) clarify the tests made on Burkina cotton which made by HVI Set as American standard ASTM

Table (1)

Cotton	Contamination	Length at 50%	Fiber Regularity	Short Fiber	Strength g/tex	Elongation	Accuracy	Maturity
Burkina	20.4	24.5	44.4	6.3	18.8	5.6	3.6	0.87

From the last table we find that Burkina cotton is on medium degree of accuracy that helps us to easy get middle count yarn, but this yarn produced is weak, and that returns to the weakness of the fiber strength, as the tests have been made to produce tree different counts with the Varity of spacer.

The effect of changing the quality distances in the Carding machines

Practical experiments and laboratory tests

1 - Lightening and cleaning:

Is the stage where the large cotton blocks turn into small pieces and in which the largest percentage of contaminations and dust is eliminated. Experiments have been done on the Swiss Ritter machines. The machine's settings have been checked between the weapons of the batter and the distances are checked to prevent the cotton conglomerate at the batter between the sloping mat and the batter, which is appropriate for the length of the staple and does not allow the fiber to be cut to ensure the quality of lightening with the opening of the passes so as to reduce the loss of the proportion of cotton and the disposal of crusts and dust The machines used in 2013 A79 / A11 / B12 / B72

2- The Card:

Experiments used the C70 Ritter 2013 machine with the shot feed. The machine speed was reduced from 80 m / min to 70 m / min. The uniformity of the product sliver was improved to produce a 0.12 cm ribbon instead of 0.100 with a new cladding for the 4.9 G / m instead of 5.9 g / m with the reduction of the weight of the cans of the cards to 1000 meters instead of 3000 meters so as not to bond between the slivers of the cards with the revision of the Flats settings to become the distances 9-9-10 instead of 10-11-12 in proportion to fiber length regularly allow the fibers to be oriented towards the longitudinal axis with the grinding of the saw blade and check its settings.

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3 Drawing Stage:

First: drawing the first pass:

Experiments were carried out on the stage of drawing the first pass on the Ritter DL/5 Drawing machine of 2013 with changing the diameters of the drawing cylinders to 35 mm instead of 34 mm to avoid the irregularity of the cylindrical inefficiencies while reducing the speed of the machine to 250 rpm, bubbling to be 8 instead of 6 and reset the spacing between the cylinders in proportion to the staple length of the porkina cotton, so as not to cause excessive distance in the floating hears so that the cylinder can not control them and thus affect the quality of the slivers.

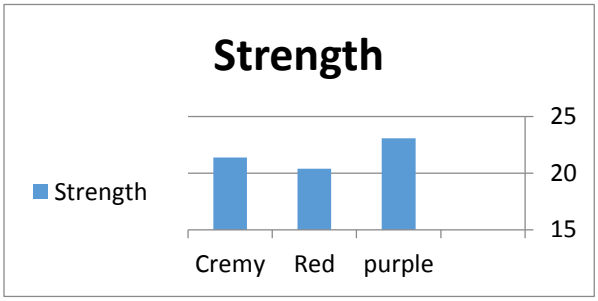
4- Spinning stage:

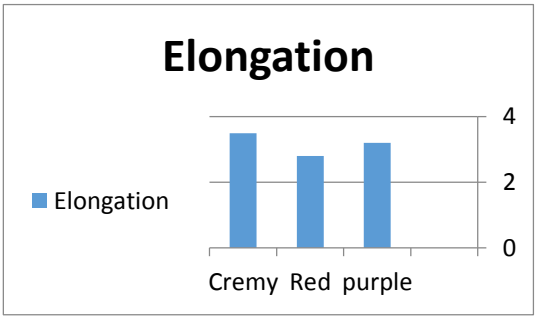
The G35 Ritter spinning machine 2013 was used in testing, and the speed was reduced from 16000 RPM to 10000 RPM, with the back and front distances changing to 36 mm., 56 mm forward distance instead of 65 mm back, 45 mm forward.

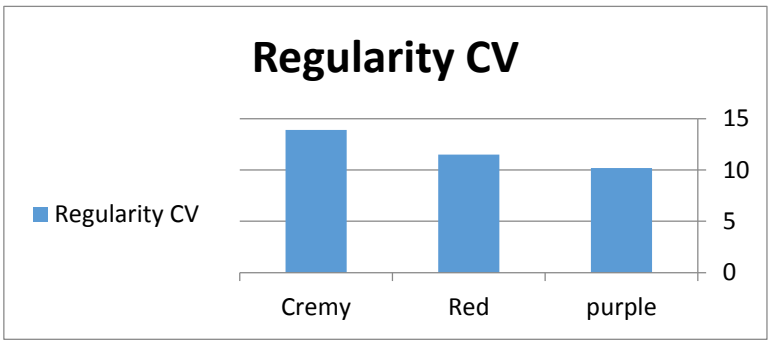
The Results

Table (2)

Spacer	Count yarn (Ne)	Elongation	Strength	Regularity CV	Thin places	Thick places	Neps
purple	16	3.2	23.1	10.2	74	105	176
Red	16	2.8	20.4	11.5	85	216	224
Cremy	16	3.5	21.4	13.9	106	187	210







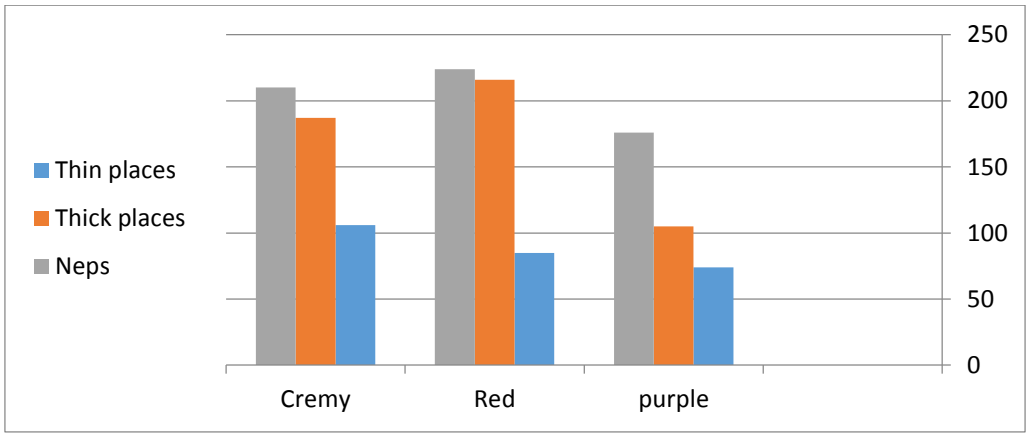
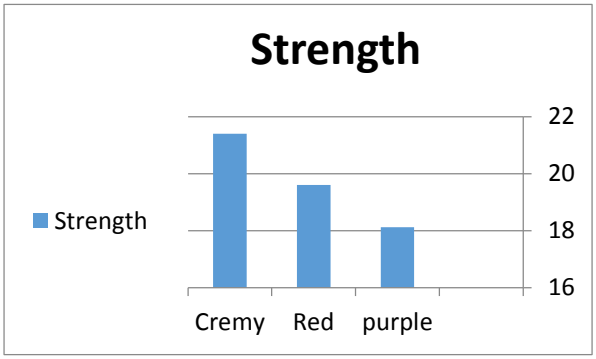
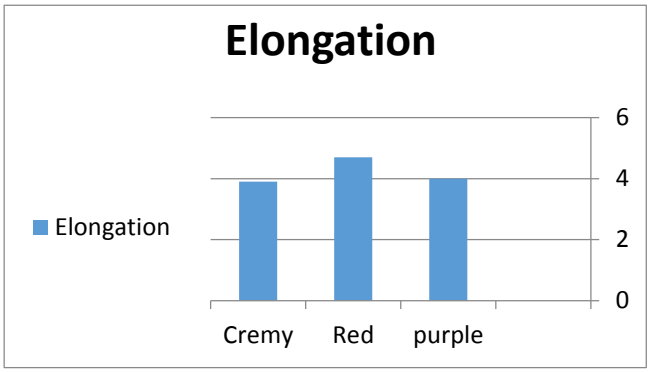
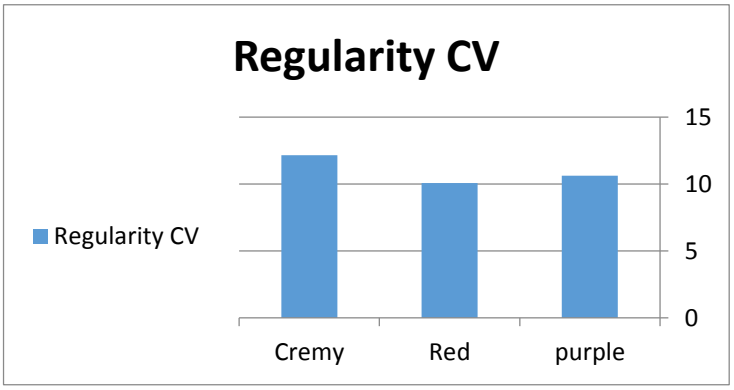


Table (3)

Spacer	Count yarn (Ne)	Elongation	Strength	Regularity CV	Thin places	Thick places	Neps
purple	20	4.0	18.12	10.61	119	114	211
Red	20	4.7	19.6	10.06	97	99.0	129
Cremy	20	3.9	21.4	12.14	190	173	172







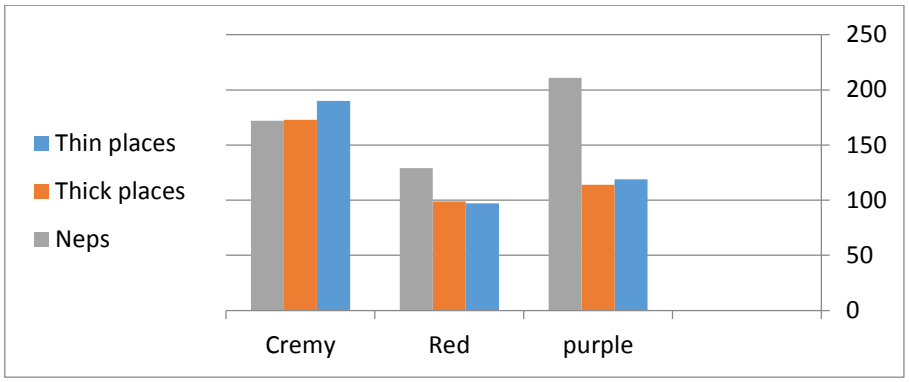
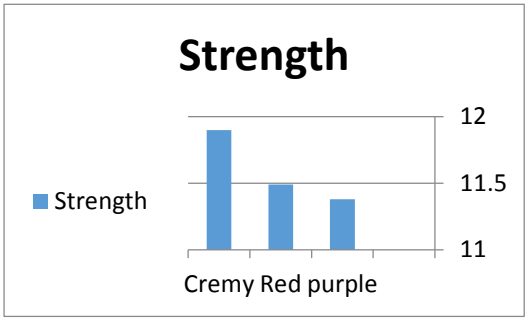
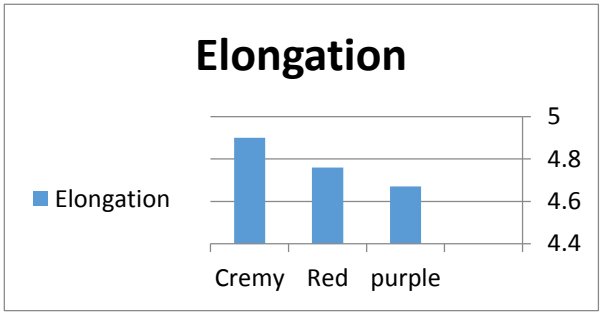
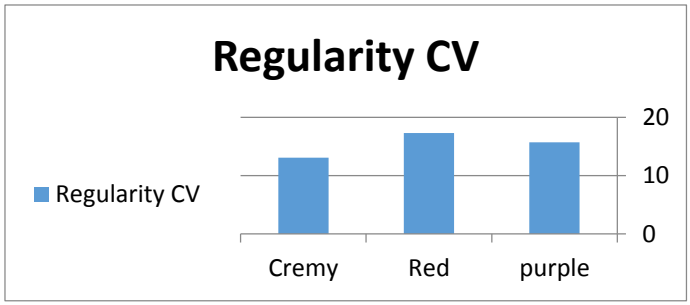


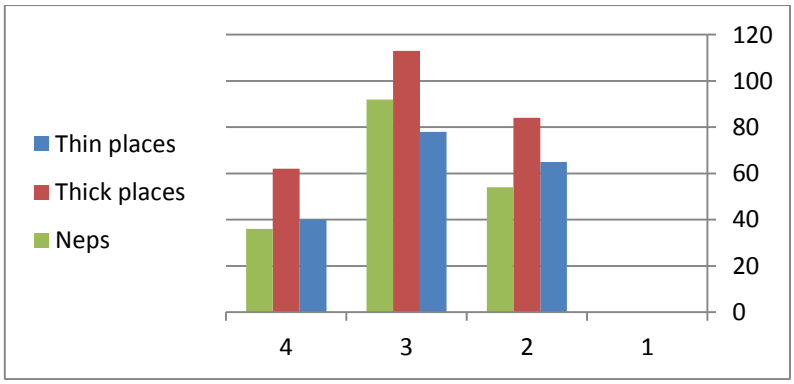
Table (4)

Spacer	Count yarn (Ne)	Elongation	Strength	Regularity CV	Thin places	Thick places	Neps
purple	30	4.67	11.38	15.7	65	84	54
Red	30	4.76	11.49	17.3	78	113	92
Cremy	30	4.9	11.9	13.1	40	62	36









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