

Promoting Australian Long Staple Cotton with Cottonspec

Dr. Shouren Yang and Dr. Stuart Gordon

CSIRO Materials, Science and Engineering Division,
Henry Street, Belmont, Victoria 3216, Australia, 3216
Shouren.Yyang@csiro.au, Stuart.Gordon@csiro.au

To promote Australian Long Staple Cotton (ALS) large-scale spinning trials were carried out in China in late 2010 using Sicala 340BRF. Six major mills in China participated in the trials. Three yarn counts were spun: Ne 40, Ne 50 and Ne 60. The spinning performance of Sicala 340BRF was better than anticipated. The results show that ALS can be used for production of high quality fine count yarns Ne 50 and above. Partner mills have shown strong interest in continued supply of ALS.

Mill samples of raw cotton, card, comb and draw slivers, roving and yarn were tested at CSIRO under standard conditions. These tests showed large variations in spun yarn quality between the partner mills. Mills 2, 3 and 4 were the best three performers of the six mills. The results for Ne 50 and Ne 60 compact spun yarns produced by the top three mills are shown in Table 2.

Comparison of the measured and the predicted yarn evenness and tenacity for Ne 50 and Ne 60 yarns for the three mills are shown in Table 3. The results demonstrate that Cottonspec works well for good mills.

The trials showed ALS can be used for production of high quality, fine count yarns Ne 50 and above, and that Cottonspec works well for good spinning mills.

Table 1 Cotton properties of BRF340

Micronaire	UHML inch	LU%	SFC <16mm %	Tenacity cN/tex	Elongation %
4.06	1.31	82.9	14.4	32.3	5.41

Table 2 Results – Ne50 & Ne60 compact spun yarns

Count Ne	Mill	Evenness CV%	Thin/km	Neps/km	Tenacity cN/tex
50	2	11.27	0.1	14	21.87
	3	12.38	2.1	52	21.22
	4	11.55	0.3	47	21.45
60	2	12.10	0.6	24	21.87
	3	13.17	9.0	72	22.19
	4	12.15	2.4	66	21.21

Table 3 Predicted vs. measured yarn properties

Count Ne	Mill	Yarn evenness CV%			Yarn tenacity cN/tex		
		Meas.	Pred.	Error%	Meas.	Pred.	Error%
50	2	11.27	11.60	-2.9	21.87	22.05	-0.8
	3	12.38	11.69	5.6	21.22	22.06	-3.9
	4	11.55	11.68	-1.1	21.45	21.43	0.1
60	2	12.10	12.40	-2.5	21.87	21.84	0.1
	3	13.17	12.57	4.5	22.19	21.88	1.4
	4	12.15	12.36	-1.7	21.21	21.20	0.0



Dr Shouren Yang (CRC Project Leader) outside the Chongqing Sanxia Mill during Cottonspec validation trials



Spinning frame showing the spinning of high quality fine count yarn in the Chongqing Sanxia Mill

