SPINNERS NEEDS

By Bob Galmes
General Manager Textiles, Bonds Industries Ltd.
Chairman RCMAC
Member ITMF Spinners Committee

You may or may not be aware that I am a member of the ITMF Spinners Committee.

This Committee is made up of spinners from twelve different countries that represent over 70% of the total world consumption of cotton. It was established in 1985 and identified the following priorities as the major objectives for future work:-

- Cotton fibre development
- Problems relating to farming, ginning and handling
- Testing of raw cotton
- Consultation with spinning, ginning and fibre testing equipment and machinery manufactures

The Committee has visited cotton growing area's in Pakistan, Argentina, Paraguay, Australia, India, Uzbekist, Turkmenistan, Egypt, Chad, Cameroon, Benin, China, Turkey, Greece and in June this year, Brazil.

In each of these countries, they met with cotton breeders, farmers, ginners, merchants, spinners, government officials and other interested parties, to exchange ideas and give them feedback and recommendations on what they believed requires to be done to ensure that the country is heading in the right direction to meet the needs of the modern cotton spinning industry.

I believe these visits have been constructive but change has been slow and in some instances such as the marketing system, there has been no progress and with contamination and the direction is backwards.

I am firmly convinced that the only hope for a major change in the farming, ginning and marketing of raw cotton is a full transformation of the current marketing system into one that fully recognises the true utility value of a given fibre profile and incentifies growers, ginners and marketers to deliver the fibre quality and characteristics that their customer, the spinner wants and needs.

The Chairman of the ITMF Spinners Committee, Andrew MacDonald, detailed these needs at the ITMF Conference last year and I quote:

"The intrinsic values of cotton as we see it today are:

- Strength
- Length
- Length uniformity
- Fineness
- Maturity
- Short fibre content
- Neps

End quote".

You will notice that there is no reference to grade. That's because grade is not an intrinsic value, it is a commercial value and basically only represents trash and colour.

There are about 3000 spinning mills world wide. Each spinner has different requirements and needs of their raw cotton. However we cannot explore or details all those needs, but I believe they can be grouped into three basic categories:

- Medium to long staple for high quality fine combed yarns
  (cottons for this category would command premiums)

- Medium staple for mid range combed and carded yarns
  (cottons for this category would be + or – NY Futures)

- Medium to short staple for the bottom of the range yarns and other non yarn products
  (cottons for this category would be nearly always discounted)\

Regardless of which group they fit into, a cotton spinner today will not survive if they don't recognise that they must meet their customers needs and technical specifications at the given market price.

I have a saying that with yarn sales, the only premium for quality is the next contract. If you don't supply what your customer wants, some one else will and usually at a lower price.

THE FUTURE

Old spinning mills are rapidly being phased out because the old machines are incapable of delivering an acceptable quality yarn.

New spinning equipment is being installed throughout the world and similar machines can be seen in mills in India, Banglardes, China, Thailand, Indonesia. etc., etc., the only difference between these and ones in developed countries is the level of automation.

Therefore, walking through a modern spinning mill, you would encounter the following scenario's.

BLENDING AND CLEANING

Fully automated and continuous opening lines with less but more gentle and effective cleaning systems that can remove trash particles without destroying the intrinsic value of the cotton. One point that is worth highlighting here, for the ginners among us, is that a pin is far less damaging than a saw tooth.

These new lines will require much improved bale uniformity in terms of size and will be equipped with optical detection devices that will remove almost all contamination.

CARDING

New cards have achieved productivity improvements of up to 100% whilst also significantly reducing trash and nep content therefore enhancing the intrinsic value of the cotton being processed. Gin manufactures could learn something from this technology.

SPINNING SYSTEMS

The current high-speed ring and open end spinning machines will continue to evolve to improve yarn quality but may be near the end of their productivity improvements.

New spinning systems will be either friction or air turbine and these system will definitely require a different set of fibre parameters to the current technologies where the emphasis will be on length, cleanliness, fineness and strength.

Optical clearing systems will be employed to check every millimetre of yarn produced to ensure that it is free of contamination and as close to perfect as you can get.

Extensions to these systems can predict and display what the yarns will look like in whatever fabric that may be produced from them.

Similar technologies are being used to predict the spinning factors of cotton fibres and predict how those fibre parameters will impact on the finished yarns and fabrics.

Instruments such as these will be used in the future to establish true international fibre standards and determine the real value of the cotton fibre and will ultimately replace the current grading system.

Cotton fibres will be valued and selected because of their total contribution of the spinning and following manufacturing process.

Raw cotton accounts for more than 50% of the total manufacturing costs of yarns but a few cents saved by purchasing a cheaper inferior quality cotton may be lost many times over by the reduction in machine efficiencies and possible quality claims as it moves down the value added chain.

Let us explore this vertical process a little further just to demonstrate how the needs of the fibre change through the chain and how the value adding process impacts on the initial value of the fibre and yarn.

I have chosen two of our products to demonstrate the dramatic and quite irrational impact of fashion and cost:

G-string brief	15 g
Cotton content	8 g
Value of cotton	2.2 cents Australian
Value of yarn	6 cents
Cost of manufacture	18 cents
Wholesale price	$4.00
Retail price	$8.00

Singlet	
Cotton content	144 g
Value of cotton	34.8 cents
Value of yarn	62 cents
Cost of manufacture	$1.34
Wholesale price	$4.30
Retail price	$7.00

In summing up, let me suggest some benchmarks that will be required to meet the future needs of spinners and see if current Australian varieties fit these needs.

Colour white
Staple length 2.5%, span length minimum 1.10"
Micronaire min 3.8 max 4.6 fully mature
Colour (Rd) not less than 75 and yellowness value (+b) more than 10
Nep content less than 150/gram
Strength (tenacity) to be more than 30 g/tex
Length uniformity ratio not below 85%
Elongation more than 8% index
Short fibre content not more than 5%
Seed coat fragments less than 15/gram

Commercially, cotton spinners will require all these initial benchmarks together with the usual commercial aspects of:

- Price competitiveness
- Price stability
- Year round availability
- Improved classing and grading systems
- Even running cotton in all characteristics
- Fidelity in deliveries and sanctity of contracts

However, I must add to this list, as subjective values, but which represents a most serious problem facing spinners today and which must be addressed immediately so that it will not be a problem in the future.

All cotton must be free of contamination (and I include bark in this category) stickiness and chemical residues.

Spinners would also like bales with plastic bands instead of steel and that should show gin identifications and seed variety and should be in cotton wrapping.

The Australian cotton industry charted it's course many years ago and whilst it still has a number of quality challenges ahead (a lot not fibre related ie. nep, uniformity and short fibre content) I believe that it has positioned itself well and is still heading in the right direction to meet the needs of spinners in the next decade.

In closing, let me offer some food for thought, there are still many opportunities to improve the value and consumption of Australian cottons, some of which are:

A reduction in short fibre content would minimise the need for the expensive combing process that is required to remove up to 20% short fibre in order to produce fine high quality yarns. Thus, offering a significant cost saving to the spinner and premium opportunities to the grower. It will also render the cotton more suitable for the new friction and air jet spinning systems.

With the now accepted practice of once over picking, spindle pickers need to be modified so they only select the fibres, rather than closing the doors and aggressively attacking the plant, to collect as much cotton as possible resulting in a dramatic rise in unacceptable bark and plant residue in the cotton.

Gins need to be modified to provide more gentle and efficient cleaning with a reduction in nep and short fibre content. The new carding technology shows that this may be possible without sacrificing productivity.

And for the plant breeder, what about a cotton plant that is resistant to insect and bacterial attack, that is less dependant on water and with bolls that open and mature uniformly.