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Spinners Committee

Travel Report

United States

May 13 - 21, 2002

From May 13 to 21, 2002, members of the ITMF Spinners Committee visited the United States. In Washington, they met with the International Cotton Advisory Committee (Terry Townsend) and the US Department of Agriculture (Wayne Bjorlie, Lawrence Blum and Norma McDill); in Cary, NC, they held discussions with Cotton Incorporated (Dr. Preston E. Sasser and staff); in Knoxville with Zellweger Uster (Hossein Ghorashi and staff) and Schaffner Technologies (Dr. Frederick M. Shofner and staff); in Savannah, GA, with Lummus Corporation (Stephen H. Marbut, Donald W. Van Doorn and staff) together with representatives of John Deere and Case IH (cotton harvesting machines); and in Prattville, AL, with Continental Eagle Corporation (Roger B. Fermon, President and CEO and staff). The visit terminated in Gastonia, NC, with a meeting with representatives of the American Yarn Spinners Association and a visit to Parkdale Mills, the largest spinning company in the country. Committee members also participated in a seminar organized by the American Yarn Spinners Association at which they presented reports on the textile situation in their respective countries/areas, and on the activity and investment situation in the textile industry globally.

The purpose of the visit was to discuss subjects that the Committee considers vital for the future of cotton and the cotton spinning industry.

Participants

Committee Members & Secretariat

Kenan Koç	Turkey	Kult
Jung Soo Kim	Korea Rep.	Ilshin Spinning Co., Ltd.
Andrew Macdonald	Brazil	Santista Têxtil S.A . (Committee Chairman)
Walter Simeoni	South Africa	Frame Group Limited
Herwig Strolz	Director General ITMF	

General observations

US Farm Bill

The discussions held in Washington centred on the latest United States Farm Bill, and the Committee's concern on the effects and impact this new legislation would have on the world cotton market. The conclusions reached would indicate that there seems to be no direct effect specifically just on cotton, since the program covers many other crops, and the evolution of prices and the alternatives available to the grower will have a greater influence than the Bill itself. So the perception is that the new legislation will not significantly alter the overall global cotton situation, which appears will continue to be one of oversupply for some time in the future.

During discussions with USDA's Norma McDill, responsible for the cotton classing of USDA, the Committee once again raised the question of measuring short fibre content and the urgent need to include this parameter in the class card. The Committee had discussed this with the USDA two years ago during the ITMF Venice Conference, and subsequently Mr Romano Bonadei had made studies utilising the Short Fibre Index of the HVI to determine some of the yarn properties, with much success. Norma McDill was aware of the Committee's insistence and confirmed that a study made recently by researchers of the USDA had shown great promise in presenting the short fibre content in a more meaningful manner, based on the staple length of the specific cotton being measured. The Committee was encouraged by Norma McDill's assurance that these concrete plans where in the pipeline.

During the meeting with Mr Lawrence Blum it was confirmed that there were no plans to eliminate the GMS 4-export credit line for cotton, currently with repayment for up to three years, though he felt that changes might be made to reduce the repayment period in the near future.

Technical subjects

The Committee had prepared an agenda of topics to be discussed with the various organisations to be visited, and this report follows that agenda with each point covered based on the discussions held.

Picking

From presentations made at the meeting at the Lummus Corporation in Savannah, GA, by representatives of John Deere and Case IH, it was clear that both companies were aware of the importance harvesting machines played in the cleanliness and the quality of cotton for the cotton spinner, but they admitted that little research for substantial improvements was being undertaken. The technology of both machines is very similar and there is no qualitative evidence to show which machine preserves best the basic characteristics of the cotton. Great hope had been placed in UNR (ultra narrow row planting), in terms of cost reduction by increased yields per acre, but so far expectations were not fulfilled. No real new technological break-through was reported and the original enthusiasm for fingerhead picking has waned. The same applies to the attempts of putting cleaning machinery on pickers, or increasing the picking height of the spindle box to improve picking of the taller cotton plants.

Module averaging

The Spinners Committee fully encouraged the concept of module averaging for classing and recommended that the bales within one module should constitute one combined block of cotton, and even sold and delivered to the spinner as such, thus guaranteeing more uniformity

between laydowns in the mills. This process would also benefit the ginner through less handling, as the bales could be stored and blocked off by module, without requiring subsequent separation. Module averaging would also benefit the grower, since individual bales are always classed on the lower side of the two sides, thereby loosing the benefit of any better cotton. Averaging would ensure that the grower has an average of the module, rather than the average of the poorest side of each bale, as is the case today.

Ginning

The Committee was impressed with the increasing concern of the ginning machine manufacturers for fibre quality, though their primary interest continues to be to satisfy their client, the grower. The acceptance that the lint cleaners are one of the areas in the ginning process which most damages the cotton fibre was clearly emphasised and both companies are tacking this problem, with Lummus as well as Continental showing various new concepts designed to preserve fibre quality, whilst maintaining or improving efficiency, such as the;

- Lummus Sentinel Lint Cleaner

- Continental Eagle Lint Cleaner Grid Louvers.

The former showed evidence of improved fibre quality in the bale with this device, and the Committee approved the principle thoughts behind the Sentinel, which is to reduce the initial impact on the cotton of the saw teeth rotating at high speeds. The adjustable grid bars as presented by Continental Eagle had been examined by the Spinners Committee some years ago as a prototype in the USDA, and was very encouraged at that time by this revolutionary idea. However to date Continental are lacking any hard data on the spinning results of cotton produced on the different settings in their model, and the Committee encouraged the management to prepare this data together with a spinning company, as this would be very important information for spinners to evaluate this new technology.

New ginning concepts

Lummus showed the initial work being done as regards a new concept of ginning, the “rigid cage ginning”, which would appear to be an improvement over the original “cage ginning” process developed in the 80s in Texas and sponsored by Cotton Incorporated. At that time the commercial gin plant testing carried out by Cotton Incorporated, Acco and Lummus Corporation gave encouraging quality results, however the failures of bearings and nip roll covers presented insurmountable problems, and the project was subsequently abandoned. Lummus, however, continued to study modifications to correct these shortcomings because of the potential for cotton quality improvement, and the efforts resulted in the design of the “rigid cage gin”.

On the basis of the research results obtained so far, the Committee encouraged the further development of this concept as a means of maintaining fibre quality, though research will have to also concentrate on the output volume of this system which seems to be currently too low to compete with traditional ginning systems.

Intelligin (Zellweger Uster)

Encouraging any concept to improve the quality of the fibre at the ginning stage, the Committee fully supported Zellweger Uster’s Intelligin which, although conceived to benefit producers in the first place, today shows convincing evidence of benefits also for yarn quality. The gins manufacturers were encouraged to include this type of equipment as an option in any

new machines that are marketed. Lummus were doubtful that the potential return for the investment of this system could be achieved, however the Committee assured them that as spinning technology advanced over the next years, premiums will be available for cotton with better "after ginning" characteristics

Classing at gin-point

The Committee is in favour of gradually introducing the concept of classing at gin-point, and supports the development of equipment such as with the "Rapid Tester" of Schaffner Technologies, as well as a conventional HVI system, but adapted for the gin environment, being developed by Zellweger Uster. The concept would firstly guide the ginner as regards the ginning process, with the resulting quality being available almost "on-line", whilst it would also permit that the bales could be stored according to their characteristics without the subsequent warehouse costs of sorting the bales for shipment to consumers. Again this would result in the cotton being grouped together, which also might achieve more even-running cotton for the spinners.

Contamination

Noting the spinning industry's continued serious concern with cotton contamination, the Committee recommended that attempts should now be made to remove at least the larger pieces of contamination at the ginning stage, and strongly supported the suggestion that joint research efforts to this effect should be undertaken immediately, involving both ginning and spinning machine manufacturers.

Stickiness

The Committee was preoccupied with continuing problems of stickiness and noted with disappointment that despite much effort there had been evidence of further white fly attacks again this last season in the USA. The Committee recommended that research efforts in this respect should be intensified. However until such time that this dangerous condition can be eliminated, it was also recommended that the currently available rapid testing instruments for stickiness, such as those from Lintronics and Cirad should become standard installations in the classing of US cotton.

Seed-coat fragments

The appearance of seed-coat fragments in raw cotton has increased rapidly since the end of the 90s, as evidenced by the ITMF Cotton Contamination Survey. On the basis of available evidence, the Committee is of the opinion that the reason for this phenomenon is in the breading of smaller and more brittle seeds, in an attempt to increase lint yield at the gin point. This opinion was confirmed by most of those to whom the Committee spoke, and therefore it was recommended that growers and the trade should urgently draw this fact to the attention of the seed breeders, and harsher penalties introduced due to the considerable cost seed-coat fragments can cause the spinning industry.

Short-fibre content

As discussed with the USDA in Washington, the problem of short-fibre content in cotton was also the central item of discussion at the meetings with the various companies/organizations throughout the visit. It must be noted that an accurate method of measurement still alludes the scientists, but it has become increasingly apparent that the variation from one seed to another, even on the same plant, let alone the same variety, will in fact make this unfeasible based on just one sample of combed fibres as utilised in the HVI. The traditional method in HVI has

been the indirect measurement of SFI, calculated on other fibre properties. However, the latest direct method utilising a larger number of samples has shown a better correlation of SFI with the SFC of the AFIS. The USDA's work as regards module averaging has upheld this theory, especially when related to fibre length.

Encouraged by this progress in establishing a parameter for short fibre, and noting the different concepts of direct and indirect measurement of SFC, the Committee recommended that work must continue, and should look for:

- the reduction of short-fibre content through better ginning practices
- encouragement of the work of the USDA to measure short-fibre content in relation to staple length (upper half mean length)
- the earliest possible inclusion of such a "normalised" short-fibre index in the green card.

Maturity

The Committee took note with some surprise of the conclusions presented at the meeting with Cotton Inc., that micronaire seemed to be a sufficient indicator for maturity, the propensity for immature cotton increasing as micronaire decreases.

Zellweger Uster, on the other hand, believe that the maturity index is important, since it can vary independently from the micronaire, and has introduced an algorithm based on elongation, strength and uniformity which has correlated with many different cottons from around the world.

The Committee recommended that further research be carried out to validate such an index of maturity.

Convolutions (fibre twist)

The Committee recommended that further research be carried out to evaluate the influence of convolutions in the fibres on yarn performance during the high-speed fabric forming processes.

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