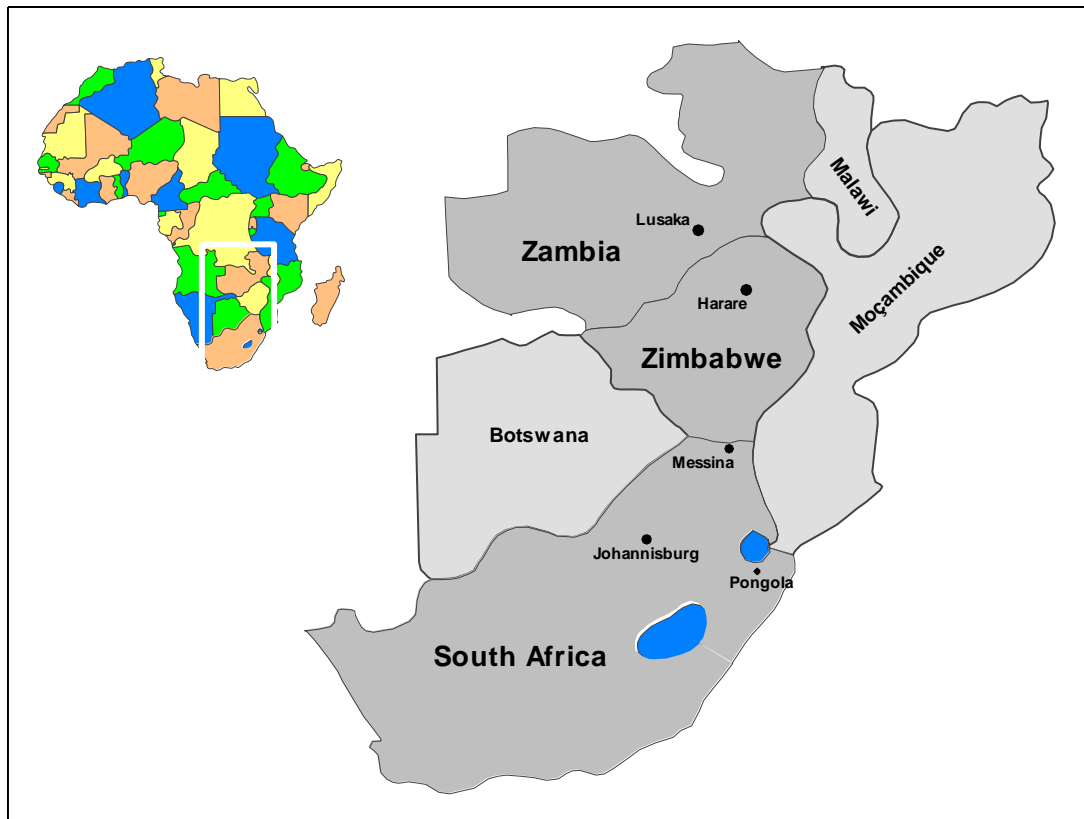


## Travel Report

# Zambia – Zimbabwe – South Africa

July 1 - 9, 2001



From July 1 to 10, 2001, members of the ITMF Spinners Committee travelled to Zambia, Zimbabwe and South Africa as part of the Committee's ongoing programme to visit cotton producing countries in an effort to establish close links and a dialogue between breeders, farmers, ginnerers and spinners, so as to evaluate the potential for quality improvements in cotton and to promote a better understanding of the requirements of the modern spinning industry.

In Zambia, the Committee visited cotton plantations, as well as ginning installations the latter belonging to the Dunavant Group in Mumbwa, Mazabuka and Gwembe (Gwembe Valley Development Estate).

In Zimbabwe, the Committee travelled to Chinhoyi where the ginning installations of the Cotton Company of Zimbabwe (Cotpro) were visited, and cotton fields in the surrounding area. Also communal farming and harvesting operations were inspected at Mazore Valley, north of Harare.

In South Africa, the Committee travelled to Messina on the Zimbabwe border where cotton fields and the ginning complex of Hanaline Farm were visited, proceeding thereafter to Marble Hall, and the ginning operations of Clark Cotton. At Groblersdal the Committee met with representatives of D&PL SA Inc. to discuss questions around breeding and variety development. Growing and harvesting operations in the Loskop irrigation scheme area were also inspected. The Committee then proceeded to Pongola on the Swaziland border and the Makhathini flats where meetings were held with small-scale farmers under the roof of Vunisa Cotton and on their farms.

This was the Committee's third journey to Africa, the destination of the first two journeys having been Mali and the Ivory Coast (1988) and Chad, Cameroon and Benin (1996).

## **Participants**

### **Committee Members & Secretariat**

Romano Bonadei	Italy	Filati Filartex Spa.
Juan Gallarde	Spain	La Preparación Textil S.A.
Andrew Macdonald	Brazil	Santista Têxtil S.A . (Committee Chairman)
Walter Simeoni	South Africa	Frame Group Limited
Jaipuria Rajaram	India	Ginni Filaments

### **ITMF Secretariat**

Herwig Strolz	Director General
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### **Invited Guests**

H.P. Bhattacharya	India	Ginni Filaments, India
Rickard Laurin	Switzerland	Dunavant SA
Nick Wilkinson	Zambia	Dunavant SA

The Committee would like to thank all those who made this visit so interesting, comfortable and worthwhile. In this respect it would like to single out Dunavant Zambia, the Cotton Company of Zimbabwe and Cotton SA, South Africa.

# Zambia

## The country in figures\*

Area	752,614 sq km	Currency	Zambian Kwacha (K)
Capital	Lusaka		
<b>People</b>			
Population	9,872,000 m	Life expectancy:	men 46.7 years
Pop. per sq km	12.6		women 48.0 years
Av. ann. growth		adult literacy	78.2%
in pop. 1990-2000	1.9%	Fertility rate (per women)	6.5
Pop. under 15	49.4%	Urban population	43%
Pop. over 65	3.0%		<i>per 1,000 pop.</i>
No. of men per 100 women	98.2	Crude birth rate	45.0
Human Development Index	...	Crude death rate	23.0
<b>Economy</b>			
GDP	USD 3.23bn	GDP per head	USD 330
GDP		GDP per head in purchasing	
Av. ann. growth in real (98-99)	0.2%	per parity (USA = 100)	...
<b>Origins of GDP (in 1999) (of total)</b>			
Agriculture	24.6%	<b>Components of GDP (in 1996) (of total)</b>	
Industry, of which:	24.5%	Private consumption	91.5%
Manufacturing	12.0%	Public consumption	9.6%
Services	50.9%	Investment	17.5%
		Exports	22.3%
		Imports	40.9%
<b>Structure of employment (in 1990) (of total)</b>			
Agriculture	71%		
Industry	5%		
Services	24%		
<b>Principal exports</b>			
Copper	372	<b>Main export destinations (of total)</b>	
Cobalt	95	Japan	17.9%
Total incl. others (1999)	USD 755,000,000	Saudi Arabia	12.9%
		Thailand	12.8%
		Taiwan	7.2%
		India	5.3%

\*Source: World Bank

## The cotton industry

The cotton industry was privatised in 1995, and Lonrho and Clark Cotton purchased several of the national gins. The Lonrho gins were later acquired by the Dunavant company, who are now operating five gins in the country, giving them about a 55% market share. Clark Cotton, based in South Africa, accounts for about 35%, while other small ginneries cover the balance.

Zambia-China Mulungushi Textiles, a joint venture is managed by China (Mainland), and has established its own gin with a capacity of 10,000 tons of seedcotton in Kabwe.

Between 1995 and 1998 the cotton area rose from 33,000 hectares to 270,000 hectares and production increased from 9,000 tons of lint to 42,000 tons. In 2000/01, production in Zambia is estimated at about 80,000 tons of seed cotton or 32,000 tons of lint. Production has declined

during the past two years due to lower market prices, unfavourable weather, and competition from the Government's policy to provide maize seed and fertiliser to small-scale farmers based on attractive credit terms.

It is interesting to note, for the future, that with the increased number of gins, current production equals only half of the ginning capacity, which since 1997 has a potential to handle up to 150,000 tons of seed cotton, or 60,000 tons of lint.

The number of cotton farmers has doubled since 1995/96 reaching an estimated 100,000, small-scale growers each cultivating between 1.5 to 5 hectares on average.

Cotton yields in Zambia remain relatively low, averaging up to 230 kg of lint per hectare using little or no fertiliser, but this will continue to improve as farmers gain further expertise. (There has been a 40% improvement in average yields since privatisation in 1995).

The quality of seed for planting is not reckoned to be a limiting factor as regards yields. All seeds are tested and meet international standards before release to farmers. Some of the ginning companies have now introduced dressed seeds and variety trials, in order to determine the performance of current varieties against alternatives. One particular ginning company, Dunavant, has also introduced a fertiliser programme for their better performing farmers. So the major factors limiting yields are lack of fertiliser, low farmer skills, inadequate extension services and training programs.

A Cotton Development Trust was established in 1999 under the initiative of Government and all stakeholders, which include farmers, ginners and donor agencies, to specifically promote and develop cotton in Zambia. Immediate programmes cover research, training of extension officers, and seed multiplication under contract with private enterprise.

The Trust is governed by an independent Board of Trustees, representing all stakeholders, and acts as a co-ordinator between all role players. Initial funding was obtained from the donor community and a levy will be introduced on the production of seed cotton to fund continued operations. Contracted seed multiplication and performance trials for private enterprise along with relatively small commercial production will provide further income.

In 1999/00, production cost was estimated at 15 U.S. cents per pound of lint, and farmers were able to sell at about 28 U.S. cents per pound of lint, which resulted from international CIF Europe average price of 55 U.S. cents per pound of lint, after deducting ginning costs, domestic and international freight, and promotion expenses. Of the total quantity produced 80% is exported.

However lower international prices projected for 2001/02 will squeeze margins, which could discourage cotton plantings. Maize is a major competitor to cotton and currently, with the use of fertiliser, provides a better profit per hectare.

# Zimbabwe

## The country in figures\*

Area	390,759 sq. km	Currency	Zimbabwe dollar (Z\$)
Capital	Harare		

### People

Population	11.3 m	Life expectancy:	men 43.6 years
Pop. per sq. km	28	women	44.7 years
Av. ann. growth		adult literacy	85.1%
in pop. 1990-2000	1.7%	Fertility rate (per women)	3.8
Pop. under 15	43.3%	Urban population	32%
Pop. over 65	2.8%		<i>per 1,000 pop.</i>
No. of men per 100 women	98.3	Crude birth rate	31.5
Human Development Index	50.7	Crude death rate	17.4

### Economy

GDP	Z\$98bn	GDP per head	\$720
GDP	\$8.2bn	GDP per head in purchasing	
Av. ann. growth in real		per parity (USA = 100)	7.7
GDP 1990-97	1.8%		

<b>Origins of GDP</b> (in 1996)	(of total)	<b>Components of GDP</b> (in 1996)	(of total)
Agriculture	17.5	Private consumption	52.1
Industry, of which:	22.2	Public consumption	20.0
manufacturing	17.9	Investment	20.8
Services	60.3	Exports	36.1
		Imports	-35.9

### Structure of employment (in 1990) (of total)

Agriculture	68
Industry	8
Services	24

### Principal exports

	\$m fob		\$m fob
Tobacco	481	Cotton	117
Gold	304		
Ferro-alloys	149	Total incl. others	<b>2,128</b>

### Main export destinations (excl. gold) (of total)

South Africa	12.1	Japan	6.1
United Kingdom	11.1	United States	5.5
Germany	7.8		

\*Source: The Economist

## The cotton industry

The 1999/2000 crop produced a record 353,000 tons of seed cotton, or 152,000 tons of lint, on 363,000 hectares. Many farmers recorded excellent yields, and a few cultivating larger areas under commercial management, achieved yields in excess of 4,000 kg/ha. This demonstrates the significant potential for this country bearing in mind that the national average yield in recent years is between 800 and 900 kg/ha. Even some smaller farmers achieved yields in excess of 3,000 kg/ha under dryland conditions, similarly reflecting the adaptation of new varieties, good seed quality, reliable input supplies and good rains last season.

The 2000/1 production is reported to be somewhat less, at about 325,000 tons of seedcotton, despite an increase in the area sown this year, basically due to the unfavourable rains and a shift in production away from the larger farms.

Over 98% of the total Zimbabwean cotton crop is hand picked and a high quality lint is produced. About 80% of the country's production is exported to South Africa as well as to Europe and the Far East. The local textile industry consumes the remaining 20%.

A total of five companies, of which The Cotton Company of Zimbabwe is the largest, compete in the purchase, ginning and marketing of the cotton crop. There is a total ginning capacity of 375,000 tones of seedcotton, with three ginning companies operating 12 gins in the country. It is reported that Cargill will install an additional gin in the 2001/2002 season.

More than 200,000 farmers and their families derive their livelihood directly from cotton farming. Input costs and interest rates continued to increase, however until recently. Local currency prices for cotton have tended to keep up with these increases. Current cotton prices will undoubtedly put pressure on margins. The smallholder communal and resettlement farmers grew to more than 80% of planted area, with the large-scale commercial farmers reducing their plantings by 40% and accordingly their participation in the market.

The recently released seed varieties of Albar FQ 902 and Albar SZ 9314, with potential for high seed cotton yields, lint outturns of over 40% and producing good quality fibre is encouraging. Long staple varieties have also been developed and have proven successful, in both the rain fed and irrigated land. This breeding work has been done by the Cotton Research Institute and will also permit the reduction of the number of varieties on offer to three, as well as just three in the long staple market.

The interest in cotton farming continues to grow, and though land suitable for cotton growing being resettled by smallholders will almost certainly be used extensively for cotton production, unfortunately at the expense of the large-scale commercial sector, doubts must be raised as to the possibility of maintaining the high yields which have been achieved in the commercial area over the last seasons.

# South Africa

## The country in figures\*

Area	1,225,815sq km	Currency	Rand (R)
Capital	Pretoria		

### People

Population	38.8m	Life expectancy:	men 51.5 years
Pop. per sq. km	31		women 58.1 years
Av. ann. growth		adult literacy	81.8%
in pop. 1990-2000	1.72%	Fertility rate (per women)	3.3
Pop. under 15	36.1%	Urban population	50%
Pop. over 65	3.4%		<i>per 1,000 pop.</i>
No. of men per 100 women	96.9	Crude birth rate	27.1
Human Development Index	71.7	Crude death rate	12.2

### Economy

GDP	R600bn	GDP per head	\$3,210
GDP	\$130.2bn	GDP per head in purchasing	
Av. ann. growth in real		per parity (USA = 100)	24.7
GDP 1990-97	1.5		

<b>Origins of GDP</b> (in 1996)	(of total)	<b>Components of GDP</b> (in 1996)	(of total)
Agriculture	4.5	Private consumption	59.4
Industry, of which:	34.6	Public consumption	21.7
manufacturing	23.9	Investment	18.1
Services	60.9	Exports	32.8
		Imports	-32.0

<b>Structure of employment</b> (in 1990)	(of total)		(% of labour force)
Agriculture	11	Unemployment 1997	5.1
Industry	25	Av. ann. rate 1990-97	4.7
Services	64		

<b>Principal exports</b>	\$m fob		\$m fob
Metals and metal products	6.3	Machinery and transport	
Gold	6.0	equipment	2.6
Diamonds	2.9	Total incl. others	23.5

<b>Main export destinations</b> (excl. gold)	(of total)		
United Kingdom	10.1	Japan	5.4
United States	6.0	Germany	4.4

\*Source: The Economist

## The cotton industry

### Production and Imports of Cotton Lint (metric tons)

(Production by RSA & Swaziland ginners & lint imports by RSA and Swaziland spinners)

Marketing Year	Production				Imports From		
	RSA**	Swaziland**	Other***	Total	Zimbabwe	Other	Total
1991/92	39656	8810	984	49450	8765	18189	26954
1992/93	18047	2039	442	20528	2450	32249	34699
1993/94	10310	3924	813	15047	10162	39733	49895
1994/95	22791	3269	917	26977	15710	26453	42163
1995/96	21472	1775	816	24063	7268	38977	46245
1996/97	37699	4952	1983	44634	10465	20936	31401
1997/98	24180	5786	1168	31134	24187	27661	51848
1998/99	34507	5959	1915	42381	17143	20857	38000
1999/00	44926	5630	2588	<b>53144</b>	11322	17863	29185
2000/01****	24584	3006	2014	<b>29604</b>	18852	10870	29722
2001/02****	29343	3961	2424	35728	n/a	n/a	30000

\*

\*\* Lint produced by RSA ginners from RSA seed cotton

\*\*\* Lint produced by RSA & Swaziland ginners from Swaziland seed cotton

\*\*\*\* Lint produced by RSA & Swaziland ginners from Botswana, Namibia, Zimbabwe & Mozambique seed cotton

\*\*\*\*\* 2000/01 Skatting / Estimate

As can be seen from the figures above the 1999/2000 production of cotton lint in the Republic of South Africa (RSA) and Swaziland was 53,144 tons, an increase of 25% from that of the previous season, whilst cotton consumption increased by about 8% over that of the previous year, to 75,058 tons. Exports amounted to 6,139 tons, 45% less than the record exports of 11,113 tons of the previous season.

However the 2000/01 production reached only 29,604 tons, a decline of 44% , mainly due to the low international prices that prevailed at planting time. Unfortunately cotton consumption also fell back to levels even lower than two years ago (65,115 tons).

The area under cotton (139,900 hectares in 1999/2000) was down to 78,900 hectares this crop, a corresponding decline of 46%. This does, however, not tell all the story, since the irrigated area declined more sharply, 33,298 hectares to 11,832 hectares, 64% less, whilst the dryland declined 37%. The greatly improved yields of the dryland cotton, 515 kg/ha to 621 kg/ha, compensated somewhat the large loss of the hectares of the more productive irrigated cottons.

For 2001/02 there is some optimism that irrigated cotton will regain some lost ground rising to 21,000 hectares, but the drylands are expected to loose further acreage, due to the current prices for cotton. Therefore, though the same area to be planted could be expected, Cotton South Africa is looking for a 25% production increase to hopefully 35,000 tons next season.

As far as the development of the small-scale cotton-farming sector is concerned, the objective of the cotton industry is to derive 30% of the domestic cotton production from this sector by the year 2005. More than 70,000 hectares of state-owned land has been identified for future



cotton development for small-scale farming. The current area of land under small-scale farming is about 12,000 hectares, which represents about 17% of the potential land that could be utilised for cotton. This would mean that about 24,000 additional tons could be produced by small-scale farmers on state-owned land, which would go far in alleviating the annual production shortage.

Cotton has proved itself to be an ideal crop for the small-scale farmer, and is well suited as a crop for the emerging farmer as it is highly suited for marginal agricultural areas being fairly high resistant to drought. Furthermore, there is the argument that cotton is basically a non-perishable and labour-intensive product, which means more job creation at the farm level. Still today for certain end uses, handpicked cotton is sought after, and usually fetches a premium price on the market.

In order to maintain continuity and correctness of testing results, the Quality Control Division of Cotton SA participates in International Check Test Programmes, which are compiled and controlled by the Cotton Division of the USDA as well as the Bremen Cotton Exchange.

Overall grade performance, compared to the previous season, was disappointing due to late rains that caused a higher percentage of dull white and discoloured cottons. This in turn led to an increase of lower grades, especially Strict-Low to Low Middling categories, and there was also a significant downward trend when comparing the quantities of Good Middling cottons with the results obtained the previous year.

The increase of 1-1/32" to 1-1/16" cottons and the decline of longer staples can mainly be attributed to serious draught conditions encountered in certain rain fed areas. 73% of the total crop compared to 83% the previous year was still within a staple range of 1-3/32"-1-3/16" (1.09-1.18 inches) with the balance classified as 1-1/32"-1-1/16" (1.03-1.06 inches).

As far as micronaire was concerned, only 3.83% of the total SA cotton crop measured below 3.5.

High strength values ranging from 24–31 g/tex (1/8 gauge Pressley values) were also maintained.

On 6 January 1998 the Cotton Board terminated its functions and all assets were transferred to the Cotton Trust to be used for the benefit of the whole industry. A new statutory levy is applicable to finance the research, information, promotion and grading functions of Cotton SA, a non-profit seeking company founded by role-players after the demise of the Cotton Board. Cotton SA is not in any way involved in the marketing of cotton, which is traded on free market principles.

A free trade agreement between countries within the Southern African Development Community (SADC) has recently come into place and South Africa is committed to phase out its tariff on cotton in equal instalments in five years. The R1.60/kg duty has already been scaled down to R1.20/kg and is expected to be further reduced to R0.90/kg next year with regard to imports from SADC countries.

## Observations and Recommendations by the Spinners Committee

Undoubtedly the first and overwhelming impression of the Committee was the emphasis and work being done to combat contamination of cotton with foreign matter. Initially the feeling was that such emphasis was a must for any visiting delegation of cotton spinners, and everybody had been well primed. However it did not take long for this initial cynical approach to be dispelled (cynical, since the Spinners Committee has been preaching “no contamination” since its inception more than a decade ago and saw clear, well defined efforts and investments being made in this area).

The best example was perhaps at Dunavant’s gin in Mumbwa, Zambia, where a very extensive and extremely well thought out inspection system of the seed cotton prior to ginning had been set up. In addition a post-ginning examination of random bales was also being carried out, by opening the bales and rechecking the lint.

In Zimbabwe, large notice boards at the gin points warned farmers that severe penalties would be applied, or deliveries even rejected, if the cotton was found to be contaminated. In South Africa the Committee found the same emphasis, and one ginner was even marking the bales “contamination free” because of their extensive inspection system. In this case, the Committee was not so impressed with the system being used, since the lighting was poor at the inspection point, and the cotton was moving very fast. Unfortunately, also at this gin, as an example of the extra care that still needs to be taken, the cottonseed was being loaded into woven polypropylene sacks. A strong wind could easily blow loose polypropylene strings and fibres into the cotton stored in modules in the patio. Likewise in all three countries module covers though usually made out of non-contaminating material, were tied down with synthetic ropes. These ropes are “decomposed” by the sun and become brittle and give off loose fibres. The Committee **recommends** that all module ties should be made exclusively of cotton rope.

However pleased as the Committee were to observe the dedicated fight against polypropylene in cotton, these three countries seem to have overlooked the need to eradicate also the other contaminants which spinners find in cotton today, especially small pieces of plastic sheeting and jute fibres. There seemed to be a general misunderstanding regarding what the textile industry considers to be contamination. The answer is quite clear:

**Contamination is anything that is found in the cotton that cannot be removed by machines.**

This includes, bark, grass, jute and hemp fibres, feathers, hair, paper, tar, ink, coloured cotton cloth, plastic sheeting, polypropylene, non-cotton string and so on.

The Committee therefore **recommends** that the source of any or all of these contaminants should be avoided and eventually eliminated, and that must clearly include jute sacking for harvesting, cottonseed bale packs and bale wrapping, and that, albeit more expensive, cotton cloth should be used at every stage of the process. The same criteria must be applied to bags or coverings made out of plastic sheeting. Picking sacks and cotton packs should not be identified with coloured cloth however well they are fastened to the covering.

Perhaps the misunderstanding occurs because some years ago jute fibres were not necessarily considered such a serious contaminant, as with more labour available in the mills and

machines running at slower speeds than today's equivalents, an end-down (yarn break) caused by a jute fibre was not considered so important. Today apart from the costly loss of production with an end-down, foreign fibres create a weak point in the yarn, or introduces the necessity for a splice, both causing a possible future break on the loom, or worse a break during the warping and sizing process, and thereby a possible defect in the final product.

Small pieces of torn plastic sheet from bagging, such as the Committee has seen in all three countries for packing and wrapping cotton, is perhaps even worse than the Committee has polypropylene today since, if undetected, a small piece can be torn to shreds and peppered throughout the yarn.

The Committee **recommends** that if initially for economic and social reasons plastic packing is utilised then it should be of a very *bright colour* to at least facilitate mechanical extraction in the opening lines of the spinning process. White or clear plastic, or for that matter white and clear polypropylene, cannot be detected by video scanners used for this purpose. Bright colours would also facilitate visual extraction at the various gin points where contamination extraction is practised by hand.

The other contaminant of growing importance which can directly affect the value of cotton, is **stickiness** which occurs when fibres have been exposed to either the white fly, called "honey-dew", or aphids infestation. Generally the three countries visited have a reputation as "sticky free" cottons. However in some of the fields the Committee visited, some "fumagin" or "Black Sooty Mould" as it is sometimes called, was evident. Fumagin is evidence that sugar had been present at some time on the cotton, but the fungus, "fumagin", has broken the sugar down into a non-sticky form. The problem always is whether the process has been completed, or some residue of stickiness remains. The Committee was impressed by the awareness of the cotton community of this problem. Generally such cotton is separated and independently processed at the gin. These contaminated cottons would normally be used in the domestic industry with careful blending and with lower humidity levels.

The Committee however **recommends** that, to maintain the reputation of "sticky free" and avoid any undetected mixture with sound cotton, the origins of "stickiness" are eliminated during the plant cycle, especially when the cotton bolls are open. The recommendation implies early detection, but the best solution is not allowing the cotton bolls to remain on the plants too long before picking, the more so if there is evidence of the existence of these pests in the area.

The Committee **recommends** each ginning factory, or group of gins, to have available instruments capable of detecting "stickiness" before and after ginning, to make sure no bale can escape the system, since it is clear that in the event a boll is contaminated with sugar and harvested **before** the fumagin has had time to work, there would be **no visual** evidence of stickiness.

The fields that were visited by the Committee were naturally very varied, especially between the irrigated and dryland cottons. Generally fields were clean and handpicking was carried out with care. For machine picking the Committee would **recommend** a strict control of the height of the plants to avoid damage during harvesting. The gins in both Zambia and Zimbabwe were very fine examples of the principles of good ginning, exceptionally clean and the workers all in uniforms and boots. These apparent small housekeeping details say a lot for the management, and both Dunavant and Cotco are to be congratulated, since in the opinion of

the Committee the cotton was being well ginned, with the gins running at speeds slower than the maximum in order to preserve its intrinsic qualities. Handline Farming in South Africa was impressive not only because of the excellent lint but also the fine understanding of the art of ginning.

The Committee was not so happy about the gin visited at Marble Arch, in South Africa. Though the cotton was being delivered to the gins in cages, thereby avoiding the greatest risk of contamination, it was being subsequently transported by airtubes to “mixing bins”. The declared objective was to blend the cotton before ginning, which however could result in mixing of varieties. The Committee **recommends** that seed cotton should be transported as little as possible by ventilation systems, since the fibre tends to “knot up” during the movement, and the ginning quality deteriorates. Likewise, when moving the cotton piles formed in the “mixing bins” by bulldozer, the cotton can be damaged again. Such blending of cotton has become less important today with the extensive opening lines now available in modern spinning mills.

The Committee therefore **recommends** that great care be taken NOT to mix varieties, though mixing might perhaps result in an *apparent* uniformity, mixed varieties within a bale can be disastrous for the industry. Each variety has a different dye take up due to its individual properties, and mixing can cause an uneven, or flat appearance to dyed cloth, especially with the finer-count yarns. The Committee **recommends** that it is far better to gin cotton from the same farm field, even if this means some variance in grade, than to mix cottons from different fields farms and worst of all, different *seed varieties*.

The Committee **recommends** that all cotton producing countries should to be aware of the growing importance for the modern spinner as regards short-fibre content, *neps* and seedcoat fragments, all serious problems, which are either created, or at best just worsened in the ginning process. In this respect after the visit to the cotton producing areas of Southern Africa the Committee **recommends** that all ginners should invest in HVI instruments, which can determine these quality aspects of the cotton, thereby providing guidance to the management as far as the quality of ginning is concerned, by testing samples before and after ginning, and adjusting the gin for the optimum settings. The HVI would also be a marketing tool, able to pre-advise clients, or prospective clients, as to the quality of the cotton being produced, or available for sale.

As regards the quality of the cotton itself, the Committee has no specific recommendations since the quality in general is excellent. Obviously there is room for improvement which can be achieved though seed breeding, harvesting and the application of excellent ginning procedures.

The Committee was most impressed with the work being done by Dunavant in Zambia in respect of educating and incentivating the grower as regards productivity and quality. The Committee witnessed a presentation to growers including on economic and ecologic ways of dealing with weeds and pests, and at the same time encouraging the farmer not to spoil his cotton by adding water for weight or allowing contamination to occur. The Committee **recommends** and fully supports this approach which is one of the many steps being recommend by the Committee world wide, i.e. bringing the grower, merchant and spinner together to achieve the same objectives.