



BALE SURVEY

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INTERNATIONAL
COTTON
ADVISORY
COMMITTEE

- **Avec un glossaire**
- **Con glosario**

Introduction

The current document is an update of the *Bale Standardization Survey* report prepared by the Secretariat of the International Cotton Advisory Committee (ICAC) in 1977 and presented to the 36th Plenary Meeting of the ICAC held in Seoul, Republic of Korea. A survey questionnaire was prepared by the Technical Information Section of the ICAC and sent to 61 producing/exporting countries. Data on 42 countries are included in this report. These 42 producing/exporting countries exported over 84% of the total cotton exported during 1994/95. It does not include non-producing/exporting countries which accounted for 2.5% of total exports during 1994/95. Assuming that cotton exported by non-producing countries also originated from one of the producing/exporting countries, the report covers about 87% of total world exports for the year 1994/95. It was not possible to obtain data from Azerbaijan, Kazakhstan and Tajikistan which represented about 6% of the total trade during 1994/95. Data from countries like China (Mainland) and Pakistan which were not net exporters during 1994/95 is also included in the report. The participating 42 countries represent all cotton growing areas and all types of cotton and almost all destinations. In 18 years, the structure of cotton trade has changed significantly. Some exporting countries became importing countries and cotton trade in general became limited to a few major producing countries. However, 17 countries which participated in the last survey are also repeated in the current report. With the exceptions of Greece, Mozambique, Peru and Tanzania, all missing countries are no longer on the list of cotton exporting countries.

The report is divided into five sections: Bale shape and size, bale covering, bale wrapping, bale covering cost and marking, and bale information and international standardization. Since the publication of the last report 18 years ago, there have been few changes in bale packaging. Bales continue to be packed in different weights and sizes and there is not a strong desire to standardize bales. Over time, among the participating countries, Angola, Argentina, Israel, Mexico and Syria have reduced the number of different types of bales packed, while others like Australia, Côte d'Ivoire, India, South Africa and Sudan have added new bale sizes. Most of the new sizes added belong to universal standards, but there was not much change in weight, thus reducing bale density. Regarding the shape of the bale, it is almost the same in all countries, but it seems that width has sometimes been measured as a depth and vice versa. However, it does not affect the density of the bale.

Four types of bale covering material are used, i.e., polypropylene, jute or hessian, plastic and cotton. Jute, the most commonly detected foreign matter in cotton during spinning, also seems to be the most commonly used material in wrapping bales, followed by polypropylene. Plastic is used in Guatemala and South Africa. There is a lot of variation in the thickness of the material used which is evident from the weight of the material used to wrap a bale. All sides are covered in most of the reporting countries.

In the last 18 years, only Angola, Argentina, Colombia and Nicaragua have shifted to cotton wrapping. However, cotton wrapping is available on request in many countries. Some countries provided information on the cost of wrapping material per meter and per bale, but the data are not comparable among countries. Mostly eight or more bands/wires are used to tie each bale. Samples for measuring cotton grade and other quality parameters are drawn either during

pressing or after the bale has been packed. The method of drawing a sample greatly varies among countries. Bales are mostly marked by gin, by area in only a few countries and by order number in the Republic of Angola. Indelible ink, in addition to paint, is commonly used for marking bales. The data received show that various precautions like lamination, instant-drying ink, etc., are used to avoid penetration. Pre-marked covering material is used in Chad, while in Kirghizstan a paper is placed over cotton so that ink does not penetrate into the cotton. According to the International Textile Manufacturers Federation's 1995 *Cotton Contamination Survey*, however, color contamination remains a concern in the textile industry.

There is no uniformity, nor are any serious efforts underway to bring uniformity, in the information given on bales. The data show that variation in bale size comes from the pressing units and replacement of these units involves heavy expenditures. No solid suggestions have come forth to improve uniformity among bales and it seems that variations among bales will continue.

In addition to the Coordinating Agencies of the ICAC member countries, many researchers and organizations helped to obtain data from non-members of the ICAC. Thanks are expressed to the Coordinating Agencies for their prompt responses and to the International Textile Manufacturers Federation, Cotton Program of the CIRAD-CA (France), Compagnie Française pour le Développement des Fibres Textiles (CFDT), Compagnie Cotonnière (COPACO) and researchers and cotton companies in various countries for their help in obtaining data.

The report has been published in English, but, in order to make it useful to non-English speakers, a glossary of equivalent terms in French and Spanish is included at the end of the report.

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Table 1: Bale Shape and Size

Country	Bale Type	Dimensions of Bale (cm)			Bale Weight (kg)		Density (kg/m ³)
		Length	Width	Depth	Average	Range	
Angola	Catete (Bengo)	147	75	62	150	140-160	219.4
Argentina	Standard Super	105	85-100	55	200	195-205	346-407
		140	80-90	50	240	225-250	381-429
Australia	High Density Universal Density	108	55	85	227	150-240	449.6
		140	55	90	227	150-240	327.6
Benin		105	54	94	203	190-217	380.9
Bolivia	Standard Universal	135	50	90	224	210-260	368.7
		100	55	100			
Brazil	Nordeste/Brasil	120	60	80	140	110-180	243.1
Burkina Faso	Bobo III	140	75	55	217	152-250	375.8
	Bobo II	105	95	55	232	210-245	422.9
	Ouaga	106	100	51	211	187-230	390.3
Burundi	20"x54"	137	51	70	229		468.2
Cameroon	20" x 41"	103	92	53	213	190-250	424.1
	19" x 41"	103	92	50	192	175-220	405.2
Central African Republic	Lummus 20"x41"	90	54	108	208	198-227	396.3
	Continental 20"x41"	90	54	108	208	198-227	396.3
Chad	Universal Standard	138-140	50-52	74-75	220	218-225	403-431
China (Mainland)	Bale I	80	40	60	85	80-90	442.7
	Bale II	106	55	78	200	190-210	439.8
Colombia	Standard	133	67	50	230	200-240	516.2
	Flat	140	125	105	225	220-240	122.5
	High Density	142	100	55	225	220-240	288.1
Côte d'Ivoire	Korhogo	106 and 137 depending on the gin	89 and 85 depending on the gin	54 and 53 depending on the gin	215	150-280	327-450
	BKE-BLI 1-OLO-MNO				220	150-280	334-460
	SLA-ZTA-DRA				227	160-300	345-475
	Boundiali 2-Korhogo				230	160-300	349-482
Egypt	Egyptian Bale	130	86	54	327	290-345	541.6
El Salvador	Standard	140	92	55	227	200-227	320.5
Gambia	20" x 41"	104	51	100	218.5		412.0
Guatemala	Region II	125	85	85	220		243.6
	Region IV	125	85	85	225		249.2
	Region V	125	85	85	236		261.3
Guinée	20" x 54"	137	51	81	215		379.9
Guinée Bissau	20" x 41"	105	52	85	209		450.3

Country	Bale Type	Dimensions of Bale (cm)			Bale Weight (kg)		Density (kg/m ³)
		Length	Width	Depth	Average	Range	
India	Indian Bale	106	53	70	170	165-175	432.3
		140	53	70	170	165-175	327.3
Iran	Cuboid	90	70	140	200	170-240	226.8
Israel	Universal Density	140	90	55	249	235-265	359.3
Kirghizstan	Cupa	97	60	74	215	200-230	499.2
Mali	20" x 41" 20" x 54"	104	51	95	223	205-235	442.6
		137	51	95	223	205-223	336.0
Mexico	Standard	140	54	79	227	180-240	380.1
Myanmar	Long Staple Cotton Short Staple Cotton	114	51	48	164	161-166	587.7
		114	51	48	164	161.166	587.7
Nicaragua	Bale	142	95	58	218	205-227	278.6
Pakistan	Standard (Pakistan)	115	60	45	170	160-185	547.5
Paraguay	Cotton Fiber	105	80	56	198	160-225	420.9
South Africa	Universal - MT-1	107	96	53	220	215-225	404.1
	Universal - MT-2	103	80	53	208	150-240	476.3
	Universal - MT-3	106	88	53	203	198-230	410.6
	Universal LIS/OTK	106	80	53	203	170-235	451.7
	Gin Standard - LOR/OKB	140	98	55	195	185-205	258.4
Spain	Standard High Density	142	80-95	54	230	200-250	316-375
		105	96	55	220	200-235	396.8
Sudan	Gezira RG, Blue Nile & White Nile Rahad and Suki SG Girba SG	102	74	69	188	185-191	361.0
		107	92	51	188	185-191	374.5
		107	82	54	188	185-191	396.8
Syria	A (22%) B (53%) C (15%) D (9%)	140	54	86	213	210-215	327.6
		104-106	54	83	202	192-212	425-434
		114	54	77	205	200-210	432.5
		104	54	88	202	192-212	408.7
Thailand	Burlap Wrapped	100	50	40	100	100-130	500.0
Togo		105	51	95	230		452.1
Turkey	Aegean Region Roller gin Saw gin	95	65	105	214	190-230	330.1
		137	56	90	226	200-230	327.3
	Çukurova & Southeast Regions Roller gin Saw gin	95	65	105	217	195-245	334.7
		140	50	80	210	200-230	375.0
Turkmenistan	Compressed Standard	93	75	58.5	200	190-220	490.2

Country	Bale Type	Dimensions of Bale (cm)			Bale Weight (kg)		Density (kg/m ³)
		Length	Width	Depth	Average	Range	
Uganda	Standard Density	104	51	84	185	178-193	415.2
USA	Universal Density (91%)	140	53	71	225	217-230	427.1
	Gin Standard Density(7%)	140	53	79	225	217-230	383.8
	Compressed Universal Density(2%)	147	63.5	53	225	217-230	454.8
Uzbekistan	Compressed Standard	93	75	58.5	200	190-220	490.2
Zimbabwe	High Density	165	53.5	73	210	205-214	325.9

Notes:

In Benin, Nicaragua and Togo, there is no special name for bales.

In Côte d'Ivoire, there are four different types of bales, i.e., Korhogo, BKE-BLI 1-OLO-MNO, SLA-ZTA-DRA and Boundiali 2-Korhogo, but their lengths, widths, depths and wrappings depend on whether they are baled in an old or new ginning factory. Density has been calculated accordingly.

The weight and size of all the bale types in Colombia vary depending on the cooperative/farmer's association.

In India, during March through June, bale weight variation increases to ± 7 kg/bale.

In South Africa, MT stands for Mid-Transvaal growing area. 1, 2 and 3 refer to NSK, Marble-Hall/Clark Cotton and Worthing-Tongaati gins, respectively. LIS means Loskop Irrigated Scheme and gin OTK, and LOR means Lower Orange River area and gin OKB.

In Sudan, RG is roller ginned and SG is saw ginned.

In the USA, bale weight is for the year 1993 and is an average of about 90% of the total crop.

Table 2: Bale Covering

Country	Bale Type	Bale Covering			% Crop or Bales Covered	All Sides Covered ?	Heads Covered ?
		Material	Weight per Meter	Weight per Bale			
Angola	Catete	Cotton	About 370 g	About 3.0 kg	100		Yes
Argentina	Standard Super	Cotton Cotton	80 g 80 g	385 g 385 g	100 100		Yes Yes
Australia	High Density Universal Density	Light jute Light jute		600 g 1.0 kg	100 100		Yes Yes
Benin		Cotton, jute and polypropylene		2.0 kg		No	No
Bolivia	Standard	Cotton			100		Yes
Brazil	Nordeste/Brasil	Cotton	100 g	250 g	100	Yes	60%
Burkina Faso	Bobo III Bobo II Ouaga	Polypropylene Polypropylene Polypropylene	100 g 100 g 100 g	2.0 kg 2.0 kg 2.0 kg	49 51 51	Yes Yes Yes	Yes Yes Yes
Burundi	20" x 54"	Laminated woven polypropylene			100	Yes	Yes
Cameroon	20" x 41" 20" x 41" 19" x 41"	Polypropylene Jute Polypropylene	126 g 437 g 126 g	575 g 1.9 kg 550 g		Yes, two sides are covered with plastic	Yes Yes Yes
Central African Republic	Lummus & Continental 20"x41"	Polypropylene on 4 sides and plastic on 2 sides	Polypropylene = 57 g/m ² & plastic = 40 g/m ²	2 kg including ties (4 m poly. and 2 m plastic)	100	Yes	Yes
Chad	Universal Standard	Polypropylene		2.1 kg	100	Yes	Yes
China (Mainland)	Bale I Bale II	Cotton Cotton		0.7 kg 1.0 kg	100 100	Yes Yes	Yes Yes
Colombia	Standard Flat High Density	Cotton Cotton Cotton	160-300 g 300 g	225-750 g		Yes	Yes 50% 50%
Côte d'Ivoire	Old Ginneries New Ginneries	Polypropylene Polypropylene	115 g 115 g	387 g 537 g			No Yes
Egypt	Egyptian Bale	Hessian				Yes	Yes

Country	Bale Type	Bale Covering			% Crop or Bales Covered	All Sides Covered ?	Heads Covered ?
		Material	Weight per Meter	Weight per Bale			
El Salvador	Standard	Cotton	128 g	340 g	100		Yes
Gambia	20" x 41"	Laminated woven polypropylene			100	No	No
Guatemala	Region II Region IV Region V	Plastic Plastic Cotton					Yes Yes Yes
Guinée	20" x 54"	Laminated woven polypropylene			100	Yes	Yes
Guinée Bissau	20" x 41"	Laminated woven polypropylene			100	No	No
India	Indian Bale	Hessian	246 g		NA	Yes	Yes
Iran	Cuboid	Light jute	350 g	3.5 kg	98	Yes	Yes
Israel	Universal Density	Jute		1.2 kg	100		
Kirghizstan	Cupa	Cotton			100	Yes	Yes
Mali	20" x 41" 20" x 54"	Laminated polypropylene Laminated fabric		2.5 kg 2.5 kg	100 100	Yes Yes	Yes Yes
Mexico	Standard	Cotton	250 g	500 g			51%
Myanmar	Long Staple Cotton Short Staple Cotton	Light jute Polypropylene	454 g 227 g	1.36 kg 680 g	100 100	Yes	Yes
Nicaragua	Bale	Red cotton cloth		2.28 kg	100		Yes
Pakistan	Standard (Pakistan)	Hessian (light jute)			100		Yes
Paraguay	Cotton Fiber	Cotton	116 g	317 g (3.2x1.16 m)		Yes	No
South Africa	Universal - MT-1 Universal - MT-2 Universal - MT-3 Universal LIS/OTK Gin Standard - LOR/OKB	Plastic Plastic Plastic Plastic Plastic (200 microns)	1.9 kg 157 g 150 g 176 g	2.6 kg 2.0 kg 568 g 2.0 kg 705 g	100 80 100 100	Yes No Yes Yes No	Yes-95% Yes Yes No

Country	Bale Type	Bale Covering			% Crop or Bales Covered	All Sides Covered ?	Heads Covered ?
		Material	Weight per Meter	Weight per Bale			
Spain	Standard	Light jute, polyethylene	Jute 333 g/m ² and polyethylene 138 g/m ²	Jute 1.2 kg & poly. 0.8 kg	100	Yes	Yes
	High Density	Light jute, polyethylene		Jute 1.1 kg & poly. 0.8 kg	100	Yes	Yes
Sudan	Gezira RG	Hessian		2.5 kg		Yes	Yes
	Blue and White Niles	Hessian		3.6 kg		Yes	Yes
	Rahad & Suki SG	Hessian		3.0 kg		Yes	Yes
	Girba SG	Hessian		3.6 kg		Yes	Yes
Syria	A	Light jute		4.0 kg	100		Yes
	B	Light jute		3-4 kg	100		Yes
	C	Light jute		3-3.5 kg	100		Yes
	D	Light jute		3-3.5 kg	100		Yes
Thailand	Burlap Wrapped	Light jute (burlap)	<2 kg	2.0 kg	98	Yes	Yes
Togo		Polypropylene	100 g	2.0 kg		No	No
Turkey	Aegean Region						
	Roller gin	Jute	470 g	4-4.7 kg	100		Yes
	Saw gin	Jute	470 g	4.0 kg	100		Yes
	Çukurova & Southeast Regions						
	Roller gin	Jute	460 g	910 g	100	Yes	Yes
	Saw gin	Jute	510 g	980 g	100	Yes	Yes
Turkmenistan	Compressed Standard	Cotton	1.0 kg	4.0 kg	100	Yes	Yes
Uganda	Standard Density	Hessian cloth	2.0 kg	6.0 kg	100	Yes	Yes
USA	Universal Density	Polypropylene	85 g	475 g	62	Yes	Yes
	Gin Standard Density	Jute (Burlap)	305 g	1.71 kg	30	Yes	Yes
	Compressed Universal Density	Polyethylene film	130 g	725 g	7	Yes	Yes
		Cotton	261 g	1.36 kg	<1	Yes	Yes
Uzbekistan	Compressed Standard	Cotton	1.0 kg	4.0 kg	100	Yes	Yes
Zimbabwe	High Density	Cotton	125 g	500 g	100	Yes	Yes

Notes:

In Egypt, four meter square hessian cloth is used to wrap bales.

In Mali, 20"x41" bales are manually wrapped in two coverings of laminated polypropylene. 20"x54" bales are wrapped in laminated fabric and the process is semi-automatic.

In Pakistan, weight per bale is not available. 3 m of hessian cloth is used for wrapping.

In Turkmenistan and Uzbekistan, cotton cloth for wrapping the bales is prepared from cotton waste. No information is available from other CIS countries, but it is assumed that same practice is followed.

In the case of USA, weight values for wrapping material are the minimum.

Table 3: Bale Wrapping

Country	Bale Type	How the Bale is Wrapped	How Samples are Drawn
Angola	Catete	Two bale wrappings are used for each bale and it is tied with steel wires.	By hand
Argentina	Standard Super	Each bale has 6 parallel ties Each bale has 8 parallel ties	With puncher at press With puncher at press
Australia	High Density and Universal Density	8 wire bands are wrapped around the bale.	Cutting by blades on press and remove sample by hand
Benin		8-9 ties are given by different gins.	By a press notch
Bolivia	Standard	8 horizontal ties are given at 12 cm apart.	From both sides of press, with knife placed in press
Brazil	Nordeste/Brasil		Automatically during pressing
Burkina Faso	Bobo III, Bobo II and Ouaga	Bobo III has 8 ties while others have 9 ties per bale.	Automatically with a shoe
Burundi	20" x 54"	Bales are tied with 8 bands.	With a shoe attached to the press
Cameroon	20" x 41" & 19" x 41"	9 bands are wrapped around the bale.	Manually and by machine
Central African Republic	Lummus & Continental 20" x 41"	8 ties are given and each string is 2.55 meter long. 1.5 meter rope is use to stitch polypropylene.	By cutting with a knife during pressing
Chad	Universal Standard		With automatic sampler (shoe)
China (Mainland)	Bale I Bale II	8 small iron wires are used to tie bales. 5 large steel bands are used to tie bales.	By hand after cutting with knife. By hand after cutting with knife.
Colombia	Standard Flat High Density	6-8 self locking ties. 8 ties. 8 ties.	Manually with knife Manually with knife Manually with knife
Côte d'Ivoire	Old and new ginneries	8-9 wires wrapped around the bale.	With the help of a block during pressing.
Egypt	Egyptian Bale	8 hoops are used to tie bales.	By hand
El Salvador	Standard	7 ties, 3 wrapped at equal distance on both sides and one in center.	With knife at the press and by hand after baling
Gambia	20" x 41"	Bales are tied with 9 bands.	With a shoe attached to the press
Guatemala	All types		By hand
Guinée	20" x 54"	Bales are tied with 8 bands.	With a shoe attached to the press
Guinée Bissau	20" x 41"	Bales are tied with 9 bands.	With a shoe attached to the press
India	Indian Bale	Usually 10-12 hoops are tied, but sometimes there may be only 9 ties.	Manually by cutting bale with a knife

Country	Bale Type	How the Bale is Wrapped	How Samples are Drawn
Iran	Cuboid	11 wires are used per bale.	100 g sample is taken manually from each side of bale.
Israel	Universal Density		By automatic sampler during baling
Kirghizstan	Cupa	12 ties are wrapped around the bale.	By hand
Mali	20" x 41" 20" x 54"	9 ties with galvanized steel wires 8 ties with phosphated steel wires	With a rectangular sharp edged shoe fixed on the press in both cases
Mexico	Standard	Generally 8 metal bands are used.	A special rectangular cut is made with a knife at the 2nd window to draw a 150 g sample.
Myanmar	Long and Short Staple	The bale is wrapped by hand using 6 wires or jute ropes.	By hand
Nicaragua	Bale	8 ties placed every 16.5 cm except at heads (10.2 cm)	By automatic sampler during baling
Pakistan	Standard (Pakistan)	All sides are covered with hessian cloth and bands are used to tie bales.	By hand
Paraguay	Cotton Fiber	6-8 ties depending on bale size.	With the help of a knife and by hand
South Africa	Universal - MT-1 Universal - MT-2 Universal - MT-3 Universal LIS/OTK Gin Standard - LOR/OKB	8 wires are tied around the bale wrapped in 5 meter long plastic. 5 wires are wrapped around the bale. 2 bale wrappings are used. 6 wires are tied around the bale wrapped in 5.5 meter long plastic. 5 wires are tied around the bale wrapped in 4 meter long plastic.	By hand at the lint slide By cutting with knife Automatically during pressing By hand at the lint slide By hand at the lint slide
Spain	Standard and High Density	7-8 ties at a distance of 10-12 cm	By hand during pressing and with hand and knife from bale
Sudan	Gezira SG, Blue & White Niles Rahad, Suki and Girba	6 bands 8 bands	By hand after breaking bands for all bale types
Syria	A B, C and D	8 wires wrapped around the bale 6 wires wrapped around the bale	By hand after cutting bale with knife in all cases
Thailand	Burlap Wrapped	3 bands of thin iron sheet	By hand
Togo		Steel wires and ropes are used.	With a shoe attached to the press
Turkey	Aegean Region Çukurova & Southeast Regions	Both roller gin and saw gin bales have 6 wires. Roller gin bales have 6 ties and saw gin bales have 8 ties.	By hand in all cases
Turkmenistan	Compressed Standard	Bales are tied with either wires or bands. Total weight of wires/bands is about 2.0 kg/bale.	Samples are drawn before lint comes into the press.

Country	Bale Type	How the Bale is Wrapped	How Samples are Drawn
Uganda	Standard Density	Four pieces of hessian cloth measuring 3 meters are wrapped around the bale and bale is tied with 7 bands/wires.	By hand
USA	All types	Use of wrapping material and tie type is the ginner's choice. Bale tie may be six or eight flat steel straps generally placed under the bagging. All products must meet industry and USDA specifications.	Before wrapping, samples are drawn by cutting devices and subsequent sampling by mechanical sampling machines or by hand.
Uzbekistan	Compressed Standard	Bales are tied with either wires or bands. Total weight of wires/bands is about 2.0 kg/bale.	Samples are drawn before lint comes into the press.
Zimbabwe	High Density	2 wrappings, top and bottom overlapping the ends. 9 bale ties are used over the top of the wrappings.	Sample cutter placed in the press

Table 4: Bale Covering Cost and Marking

Country	Bale Type	Cotton Covering Available	Cost of Cotton Covering (US\$)	Cost of Other Material (US\$)	Bale Marked By	Material Used to Mark the Bales	Precautions Taken to Avoid Color Penetration
Angola	Catete	Yes, on request	1.75-2.5/bale		Order no.	Indelible marker ink	No special care is taken.
Argentina	Both types	Yes	0.5/m +tax	2.1/bale +tax for polyethylene	Gin	Permanent ink	Marking seal has barely enough ink.
Australia	High Density Universal Density	Yes Yes	1.68/bale 2.1/bale		Gin number	Ace A black ink	Instant drying ink is used to avoid penetration.
Bolivia	Standard	Yes	0.65/m		Gin	Water soluble paint	
Benin		Yes			Gin	Stamp ink	Stamp ink is moistened and applied carefully.
Brazil	Nordeste/ Brasil	Yes	0.72/m		Gin	Indigo ink with brush	Least diluted ink is used.
Burkina Faso	Bobo III, Bobo II and Ouaga	Yes			Gin and zone	Ink and mixed solvent	Stencil pad is used to avoid penetration.
Burundi	20" x 54"	Yes		Variable	Gin, area and zone	Ink	Lamination does not allow penetration of ink.
Cameroon	20" x 41" & 19" x 41"	Yes	1.4/m	Jute 0.5/m, poly. 0.2-0.5/m	Gin	Ink	One side of polypropylene is laminated.
Central African Republic	Lummus & Continental 20" x 41"	Yes			Production area	Indelible ink	Instant drying and non-penetrating ink is used.
Chad	Universal Standard	Yes, on request			Zone	Ink	Pre-marked covering material is used.
China (Mainland)	Bale I Bale II	Yes Yes	0.16/m 0.16/m	No other material is available	Area, zone and gin in both cases	Chinese ink Chinese ink	Almost no precautions are taken.

Country	Bale Type	Cotton Covering Available	Cost of Cotton Covering (US\$)	Cost of Other Material (US\$)	Bale Marked By	Material Used to Mark the Bales	Precautions Taken to Avoid Color Penetration
Colombia	All types	Yes	4.0/bale		Gin	Ink from plant extract	Does not penetrate.
Côte d'Ivoire	Old ginneries New ginneries	Yes	1.9/bale	1.4/bale	Gin name	Ink	One side of polypropylene is laminated.
		Yes	3.4/bale	1.8/bale	Gin name	Ink	
Egypt	Egyptian Bale	Yes	1.5/double cotton		Origin and company	Paint	Heavy hessian cloth is used.
El Salvador	Standard	Yes			Zone & gin	Paste	None
Gambia	20" x 41"	Yes		Variable	Gin, area and zone	Ink	Lamination does not allow penetration of ink.
Guatemala	All types	Yes	N/A			Ink	None
Guinée	20" x 54"	Yes		Variable	Gin, area and zone	Ink	Lamination does not allow penetration of ink.
Guinée Bissau	20" x 41"	Yes		Variable	Gin, area and zone	Ink	Lamination does not allow penetration of ink.
India	Indian Bale	Yes	0.6-0.7/m	0.25-0.32/m	Area and gin	Washable black ink	Pre-printed cloth tags and small letter size are being promoted.
Iran	Cuboid	Yes	0.3/m	1.5/bale	Area, zone and gin	Carbon and gas oil	Suitable mixture is prepared.
Israel	Universal Density	No		5.0/bale	Gin	A tag is attached	Ink is not used.
Kirghizstan	Cupa	Yes	0.3/m		Gin	Typographic ink	Paper is placed under the wrapping material.
Mali	20" x 41"	Yes		0.5/bale+ 4/kg steel 3/bale+3. 6/kg steel		Ink	Laminated material is used in both cases.
	20" x 54"	Yes				Ink	
Mexico	Standard	Yes	15 Mexican Pesos	15-20 Mexican Pesos	Area	Special ink or vinyl paint	None

Country	Bale Type	Cotton Covering Available	Cost of Cotton Covering (US\$)	Cost of Other Material (US\$)	Bale Marked By	Material Used to Mark the Bales	Precautions Taken to Avoid Color Penetration
Myanmar	Long staple and short staple cotton	Yes	Depends on the market price of cotton	9.0/bale for jute and 8.5/bale for poly-propylene		Direct dyes which are used for dyeing coarse yarn.	Soft marking is used as a precaution to avoid penetration.
Nicaragua	Bale	Yes	1.5/bale (4.62 m at US\$ 0.33/m)	0.33	Gin	Ink	Wooden board is used.
Pakistan	Standard (Pakistan)	Yes		1.4-1.6/bale	Gin	Ink	Light ink is used.
Paraguay	Cotton Fiber				Gin	Aniline	It is tried to do it on the ground but complaints are received.
South Africa	All types	Yes	3.6-4.4/m	N/A	Gin	Marker ink pen	Ink cannot penetrate into plastic.
Spain	Standard and High Density	Yes Yes		Jute = 1.5/bale Poly.=1.2/bale	Gin	Printing press ink, acrylic paint & adhesive label for both	Print burlap before baling and stitch white cloth (45x23 cm) over burlap.
Sudan	All types	Yes	N/A		Area	Black ink	Only skillful labor is used to mark bales.
Syria	A, B, C & D	No		12-13.5/bale	Gin	Ink	All necessary precautions are taken.
Thailand	Burlap Wrapped	Maybe		>1.0	Gin	Magic color or ink	None
Togo						Ink applied with stencils and stamper	One side of the covering is laminated.
Turkey	Aegean Region	Yes	0.5/m		Audit center	Ink	Water proof material is used.
	Çukurova & South East Regions	Yes	0.5/m		Area	Ink	Polyethylene is used.

Country	Bale Type	Cotton Covering Available	Cost of Cotton Covering (US\$)	Cost of Other Material (US\$)	Bale Marked By	Material Used to Mark the Bales	Precautions Taken to Avoid Color Penetration
Turkmenistan	Compressed Standard	Yes	1.0/bale	NA	Code no. for area, zone & gin	Ink	Thick cotton cloth is used.
Uganda	Standard Density	Yes	0.6/m	Jute = 0.36/m	Gin, year and area	Special marking ink	Ink of appropriate viscosity is used with a special brush and stencil.
USA	All types	Yes	6-6.25 per bale	2-2.25 per bale	Area and gin or warehouse tag	Felt-tipped marking pens	Wrapping material and marking pens prevent excessive application.
Turkmenistan	Compressed Standard	Yes	1.0/bale	NA	Code no. for area, zone & gin	Ink	Thick cotton cloth is used.
Zimbabwe	High Density	No	N/A	N/A	Gin	Black marking ink	Quick drying ink and light application.

Notes:

Cotton covering is available in Burundi, Gambia, Guinée and Guinée Bissau through the Logistic and Supply Directorate of the Compagnie Française pour le Développement des Fibres Textiles (CFDT). In these countries, stencils are used to mark bales.

In Turkmenistan and Uzbekistan, only cotton cloth is used for wrapping bales hence cost of other material is not available. The cotton cloth used is very thick and does not allow penetration of ink into cotton.

In the USA, cotton covering is available only if contracted before ginning. Polyethylene is the least expensive followed by jute and woven polypropylene. Bale tie cost ranges from \$1.75 - 2.25 per bale.

Some countries gave the cost of wrapping material in local currencies. The exchange rates used are as follows:

1 US\$ = 0.714 Australian Dollars
 1 US\$ = 515 CFA
 1 US\$ = 5.4145 FF
 1 US\$ = 8.3 Yuan
 1 US\$ = 125 Comas
 1 US\$ = 31.42 Indian Rupees

1 US\$ = 30.97 Pakistani Rupees
 1 US\$ = 125 Pasetas
 1 US\$ = 11.23 Syrian Pounds
 1 US\$ = 0.282 Rands
 1 US\$ = 931.5 Shillings

Table 5: Bale Information and International Standardization

Country	Information on Bale Tag	Obstacles to International Standardization of Bales	Suggestions to Improve Standardization of Bales
Angola	Order no. and bale weight	Old presses are a major obstacle to international standardization.	It is recommended to standardize bale density, dimensions and covering material.
Argentina	Gin, bale no., year and "Product of Argentina"	It is difficult due to different sizes of presses.	It is recommended to standardize types, dimensions and weights.
Australia	Bale tag has 8 digit no. starting with the gin no. and "Namoi Cotton Co-operative Limited." Jute bag has Namoi's emblem on one side.	Need for different warehouse for separate sizes.	
Benin	Serial no., grade, variety, gin, country	No material is available for technical analysis.	
Bolivia	Bale no., variety and grade		It is recommended to standardize presses throughout the world.
Brazil	City, state, bale no., type, length and company logo	1. Non-existence of standardized equipment 2. Credit problems for modernization of industry	
Burkina Faso	Gin identification mark, grade, variety, serial no., weight and order no.	1. Different press sizes 2. Difference in bin size	1. Instal presses which allow production of uniform shape and density bales 2. Standardize humidification system
Burundi	Company name, gin name, production year, sale type, fiber length, variety, weight of wrappers, net weight and bale identification no.	Main obstacle is the expense involved in replacing old presses.	New press units installed are of universal density and measure 20"x54".
Cameroon	Gin name, variety, staple length and grade		
Central African Republic	Gin, logo, variety, type of sale, weight, departure order no. of mill		
Chad	Gin no., bale no., quality, grade, color and weight		
China (Mainland)	Country, area, province, gin, grade, fiber length and weight	1. Way of loading and unloading 2. Means of transportation (railways)	1. Propose using Chinese Bale II or Universal Standard as a standard. 2. An international meeting should be held to decide the issue.

Country	Information on Bale Tag	Obstacles to International Standardization of Bales	Suggestions to Improve Standardization of Bales
Colombia	Cooperative, bale no., lot no., gin, weight, owner, city, country	1. Lack of resources 2. Different types of presses 3. Lack of communication and international policies in cotton marketing	1. Information to be used in future must be given on the bale. 2. Press basket and pump capacity be standardized.
Côte d'Ivoire	Company, country, 4 letter gin name, length, grade and variety	1. Dimensions of the wire 2. Humidity level of cotton	
Egypt	Variety, crop year, origin and company lot	Pressing mills are designed to press different sizes.	
El Salvador	Company name, gin name, grade and "Product of El Salvador"		
Gambia	Company name, gin name, production year, sale type, fiber length, variety, weight of wrappers, net weight and bale identification no.	Main obstacle is the expense involved in replacing old presses.	New press units installed are of universal density and measure 20"x54".
Guatemala	Weight, origin, gin name and variety		
Guinée	Company name, gin name, production year, sale type, fiber length, variety, weight of wrappers, net weight and bale identification no.	Main obstacle is the expense involved in replacing old presses.	New press units installed are of universal density and measure 20"x54".
Guinée Bissau	Company name, gin name, production year, sale type, fiber length, variety, weight of wrappers, net weight and bale identification no.	Main obstacle is the finances involved to replace old presses.	New press units installed are of universal density and measure 20"x54".
India	Variety, press mark, code no. for crop, year and station, press no. and lot no.	1. Climatic conditions, particularly in tropical countries, affect bale weight. 2. Availability of covering material at a comparative price may be a problem.	The Bureau of Indian Standards has already laid down norms for standards. Cotton growing and baling conditions in various countries should be taken as a basis for international standardization.
Iran	Gin name and location, bale no., grade, variety, date of ginning, length, gross and net weight and gin logo	New equipment need to be installed.	1. All bales should be standardized to universal size. 2. All gins should be equipped to produce universal bale size.
Israel	Bale no. and gin no.	None	
Kirghizstan	Gin name, lot no., destination, bale no., press seal, station of origin		

Country	Information on Bale Tag	Obstacles to International Standardization of Bales	Suggestions to Improve Standardization of Bales
Mali	Company, year, abbreviated gin name, length, sale type and variety, gross weight and bale order no.	Bale dimensions vary according to the type of presses. Factors like humidity and range variation also affect weight. Marking is confidential.	Same types of bales can be standardized for coverings, information on the bale and abbreviations, characters and marking side.
Mexico	Bale no., gin name, producer's code and weight	None	
Myanmar	Type (grade), growing season (pre-monsoon, monsoon, late monsoon), purchase center, bale no., bale weight and fiber length	It is tried to keep a constant weight of 163.3 kg/bale. However, bale weight and dimensions vary among countries because of different conditions in different countries.	Standardization of bales is desirable for uniformity at international level and easy shipment in container carriers.
Nicaragua	Customer code, weight and serial number	None	
Pakistan		None	None
Paraguay	Company name, bale no., production year and official seal showing grade	Each gin has a different press size.	
South Africa	Bales usually carry gin logo in addition to lot no., bale no., bale weight, variety, grade and year	According to some gins there are no obstacles, while others think that it is expensive to move to universal standards.	Use Lummus press.
Spain	Company and gin name, bale no., batch no., year and "Spanish Cotton"	Many different types and makes of presses already installed.	Press manufacturers should standardize measurements.
Sudan	Saw gin, year, lot no. and bale no.	None	None
Syria	Gin, lot & bale no, weight, type/grade and contract no.	None	Support high density bales to reduce volume and lower freight cost.
Thailand	Weight	It is expensive to change to new system	None
Togo	Country, marketing center, year, variety, sale type, quality and gin		
Turkey	Region, grade, bale no., audit seal, audit center, mill, part no., type of ginning & year	No obstacles	Bale dimensions and weights should be standardized to accommodate more bales in containers.
Turkmenistan	Gin code, lot no., bale no., and running bale no.	Different sizes of presses	Uniform bales can only be made if all ginners use the same press specifications.

Country	Information on Bale Tag	Obstacles to International Standardization of Bales	Suggestions to Improve Standardization of Bales
Uganda	Lot no., gin no., gin name, year, and serial no.	Lack of knowledge of packing requirements and procedures.	<ol style="list-style-type: none"> 1. Bales should be properly tied and it should be of correct density. 2. Bales should be properly covered. 3. Markings should be proper and storage conditions should be improved.
USA	Bale no. & weight, may contain geographical information	US cotton bales meet standards of the International Standards Organization. Any changes will effect 1350 ginneries and involve investment of over US\$ 3 billion.	
Uzbekistan	Gin code, lot no., bale no., and running bale no.	Different sizes of presses	Uniform bales can only be made if all ginneries use the same press specifications.
Zimbabwe	Bale number, company trade mark and "Product of Zimbabwe"	Different pressing units and different bale weights pressed by similar pressing units.	Standard weights for universal density and high density bales are recommended.

Notes:

In Australia, the response is from Namoi Cotton Co-operative Limited. Other enterprises may have different practices.

In Colombia, because bales are marked by many associations, there may be some difference in the information shown on the bale.

Annex: Glossaire, Glosario

Anglais, Inglès	Français	Español
All sides covered	Toutes les faces couvertes	Cubierto por todos lados
Automatic	Automatique	Automático
Area	Région	Región
Average	Moyenne	Promedio
Bale	Balle	Fardo
Bale covering	Emballage de la balle	Cubierta del fardo
Bale information and international standardization	Normalisation internationale et informations relatives à la balle	Información y normas internacionales sobre el fardo
Bale marked by	Balle marquée par	Marca del fardo
Bale shape	Forme de la balle	Forma del fardo
Bale size	Taille de la balle	Tamaño del fardo
Bale type	Type de la balle	Tipo de fardo
Bale weight	Poids de la balle	Peso del fardo
Bands	Bandes	Zunchos
Centimeters (cm)	Centimètres (cm)	Centímetros (cms)
Cost of cotton covering	Coût de l'emballage du coton	Costo de cubierta de algodón
Cost of other material	Coût des autres matériaux	Costo de otros materiales
Cotton covering available	Emballage de coton disponible	Cubierta de tela de algodón disponible
Cotton covering cost and marking	Coût d'emballage et marquage de coton	Costo de cubierta de algodón y etiquetado
Country	Pays	País
Density (kg/m ³)	Densité(kg/m ³)	Dimensión (kgs/m ³)
Depth	Profondeur	Espesor
Dimensions of bale	Dimensions de la balle	Dimensiones del fardo
Gin/ginneries	Egrener/usines à égrener	Desmotadora(s)
Grade	Grade	Grado
Hand	A la main	A mano, manualmente
Heads covered	Faces couvertes	Cubiertas las cabezas
High Density	Haute densité	Alta densidad
How the bale is wrapped	Comment la balle est emballée	Cómo se cubre el fardo
How samples are drawn	Comment les échantillons sont prélevés	Cómo se obtienen las muestras
Ink	Encre	Tinta
Length	Longueur	Longitud
Light jute/hessian	Jute léger/chanvre	Yute liviano, tela de embalaje
Manual	Manuel	Manual
Material	Matériel	Material
Material used to mark the bale	Matériel utilisé pour marquer les balles	Material usado para marcar el fardo
Name	Nom	Nombre
No	Non	No
Plastic	Plastique	Plástico
Polypropylene	Polypropylène	Polipropileno

Anglais, Inglés	Français	Español
Precautions taken to avoid color penetration Quality Range Region Sample Standard Ties Universal Density Variety Weight per bale Weight per meter Width Year Yes % crop or bale covered	Précautions prises pour éviter la pénétration de la couleur Qualité Rang Région Echantillon Norme Liens Densité universelle Variété Poids par balle Poids au mètre Largeur Année Oui Pourcentage de la récolte ou balle couverte	Precauciones para evitar la penetración de la tinta Calidad Gama Región Muestra Norma Ataduras Densidad universal Variedad Peso/fardo Peso/metro Ancho Año Si % de cosecha cubierta, o de fardos cubiertos