



Standardization of Cotton Picking Bag for Farm Workers

KEYWORDS

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ABSTRACT Farm workers are engaged in various agricultural operations like presowing, weeding, picking and post picking. All these tasks are time consuming and full of drudgery over the years. Access to affordable technology reduces drudgery, save time and increases work efficiency of farm workers. Adoption of such technologies radically changes their life. Cotton picking is one of the laborious tasks performed by the farm workers at the fields. Efforts have been made to develop user friendly cotton picking bag which would reduce the drudgery and increase their efficiency. The present study was carried out in pre dominantly cotton growing areas namely Sirsa and Fatehabad districts of Haryana with the objectives, to standardize cot bag for male and testing of cot bag prepared in different types of fabric for male and female both.

Designed and developed pick bag as per the standard anthropometric measurements of female farm workers was modified as per the standard anthropometric measurements of male farm workers and ready to use paper pattern was developed for further testing. Different fabrics were explored in local market keeping in mind the existing usages trend in the field and other hypothesis factors like strength, texture, weight, cost, width of fabric, color and durability. Technical knowhow imparted to the extension personnel's during training was found to be very useful as they would be able to utilize the knowledge while imparting training to the target group. These were distributed to extension personnel's for further field testing & trial of technology to the rural men & women of various districts of Haryana. As it can also be tested for other purposes like: picking of flowers, vegetables etc.

Introduction

Agriculture is the backbone of Indian economy contributing largest share to the national income. Farm workers are engaged in various agricultural operations like pre sowing, weeding, picking and post picking. All these tasks are time consuming and full of drudgery over the years. Cotton picking is one of the laborious tasks performed by farm workers at the fields. On an average, a woman spend approximately six hours daily in collecting 20-24 Kg of cotton using 'jholi' which is a traditional way of making 'conventional bag' out of their own garments and clothing (including *Chunni*, *Lugdi* and *Chadder*) which is tied in the form of a bag on their shoulders and back. This whole process is very time consuming and full of drudgery (Gandhi *et al.* 2012). After observing the problems of farm workers while picking cotton in the fields, cot bag was designed for farm workers. Cot bag was then tested in the field and was found better than existing method of cotton picking and came as a highly accepted technology being user friendly. Cotton picking bag is made of gray cotton fabric or markin cloth and designed as per anthropometric measurements of female farm workers. Shaped pockets are provided at the front and below waist level to make the bag comfortable in use. Cushioned straps on shoulders make it comfortable to carry cotton weight (Dahiya and Yadav, 2012).

Adoption of such technologies radically changes the lives of farm workers as access to affordable technology reduces drudgery, save time and increases work efficiency of farm workers. Efforts have been made to develop user friendly cotton picking bag which would reduce the drudgery and increase the efficiency of farm workers. Keeping all these aspects in mind, a study was undertaken to standardize cot bag for male and testing of cot bag prepared in different types of fabric for male and female both.

Technical Plan

Field visits for taking measurements: Cotton Research Farm CCS HAU, Hisar, Cotton Research Station, Sirsa, Cotton fields of Bighar and Dharnia villages of Fatehabad district and Nezza Della and Bajjegan villages of Sirsa district were selected for collection of measurements. Seventy five male farm workers were selected to take required measurements i.e. Across Shoulder, Round Waist, Total Length (shoulder to bag excluding straps) and Waist to Bag Length. These were statistically tabulated and standardized as per requirement of the cot bag.

Development of Paper Pattern: Paper pattern was developed as per the measurements of males' to make Standardized Cot Bag. Paper patterns of males' and females' were multiplied and 25 copies of each were made for further testing.

Selection of fabrics: Different fabrics were explored in the local market keeping in mind the existing usages trend in the field and other hypothesis factors like strength, texture, weight, cost, width of fabric, color and durability. Six different fabrics were procured i.e. Gray cotton (sample-1), Malasia (sample-2), two types of Polyester (sample-3 & 4) and two blends of Tricot (sample - 5 & 6). Cost of the prepared samples of Cot bag was calculated on the basis of material required and stitching charges.

Development of Paper Patterns: Paper patterns of standardized Cot Bag for Male and female farm workers were developed. Paper pattern envelopes were prepared for existing and developed pattern of Cot bag. Self explanatory information was provided on paper patterns itself i.e. a) Picture of wearing cot bag that explains how to wear it; b) layout of paper pattern; c) ready to cut patterns of different parts require stitching cot bag; d) necessary information required while stitching of cot bag.

Results and Discussions

This section includes the information regarding standardization of Cot Bag for male workers, development of basic paper patterns, exploration of different fabrics keeping in mind the existing usages trend in the field and other hypothesis factors like strength, texture, weight, cost, width of fabric, color, durability. Technical knowhow on use of paper patterns for cutting the cot bag was imparted through organizing training using developed paper patterns.

The required measurements taken were tabulated and presented in Table 1.

Table 1: Anthropometric Measurements for foundation paper pattern of Cot Bag (Male) n= 75

Sr.No.	Measurement	Range (inches)	Frequency (%)
A	Across Shoulder	16-17	29 (39)
		17-18	31 (41)
		18-19	15 (20)
B	Round Waist	28-32	12 (16)
		32-36	48 (64)
		36-40	15 (20)
C	Total Length (Shoulder to bag end excluding straps)	30-32	20 (27)
		32-34	48 (64)

Table 2: Selection of Fabric for Cot bag

S. No	Fabric	Texture	Cost/Meter (Rs.)	Width of fabric (inches)	Material Required/ Bag(meter)	Cost/Bag (Rs.)	Stitching Charges (Rs.)	Total Cost/ Bag (Rs.)
1	Gray Cotton (sample-1)	Rough	28.00	52	1.50	42	50	92
2	Malasia (sample-2)	Rough	29.00	45	2.25	66	50	110
3	Tericot (sample-5)	Soft & Smooth	60.00	35	2.50	150	50	200
4	Tericot (sample-6)	Soft & Smooth	75.00	52	1.25	95	50	145
5	Polyester (sample-4)	Hard & Rough	60.00	36	2.50	150	50	200
6	Polyester (sample-3)	Partial Smooth	55.00	46	2.25	125	50	175

The cost of Cot Bag prepared was calculated including cost of the materials and stitching charges. Gray Cotton (sample-1) of Rs. 92/- (including stitching charges Rs. 50/-) was found low cost suitable fabric to prepare Cot bags followed by Malasia (sample-2) of Rs.110/-, Tericot (sample 6) of Rs.145/-, Polyester (sample-3) of Rs.175/- and Tericot (sample 5) & Polyester (sample 4) of Rs. 200 each. It was observed that the cost of the material is affected by the 'Width of the material' as cot bag require 52-54" width. Other materials can also be tried out as per the availability.

Development of Paper Pattern: Paper patterns were developed using required measurements for male. Basic paper pattern of cot bag was developed using drafting technique. Twenty five copies were got made for further testing. Paper pattern envelopes were prepared containing developed paper pattern of Cot bag of female and one for male. Prepared paper patterns itself contain the necessary information that is: a) picture of wearing cot bag that explains how to wear it; b) layout of paper pattern; c) ready to cut patterns of different parts require stitching cot bag; d) necessary information required while stitching of cot bag.

		34-36	7 (9)
D	Waist to Bag Length	15-17	19 (25)
		17-19	51 (68)
		19-21	5 (7)

Forty one percent respondents had 'Across shoulder' in the range of 17-18 inches followed by 39% in the range (16-17") and 20% (18-19"). 'Round waist' of 64% respondents was in the range of 32-36" followed by 20% in the range (36-40") and 16% (28-32"). Regarding 'Total Length(Shoulder to bag end excluding straps)'64% were in the range 32-43" followed by 27% in 30-32" range and 9% were in the range of 43-46". 'Waist to bag length of 68% respondents was in the range of 17-19", followed by 25% in the range of 15-17" and 7% in 19-21" range.

Selection of fabrics for developing Cot bag: Different fabrics were explored in the local market keeping in mind the existing usages trend in the field and other hypothesis factors like strength, texture, weight, cost, width of fabric, color, durability. Six different fabrics were taken i.e. Gray cotton (sample 1), malasia (sample 2), two types of Polyesters (sample 3 & 4) and two types of Teri cot (sample 5 & 6).

Conclusion

- Pick bag for cotton picking was found to be a highly accepted and demanding technology.
- Basic paper patterns of Cot Bag of male and female farm workers were developed using required measurements.
- Thirty Cot bags were prepared using different fabrics. The cost of the Cot bag prepared in Gray Cotton was found to be low i.e. Rs 92/- (including stitching charges).
- Cutting & Stitching instructions given on paper patterns and on its envelope, made it more user friendly.

Developed ready to use paper patterns along with technical details will be helpful in the cutting & stitching of Pick bag for cotton and using fabric of different materials. Technical knowhow mentioned on the envelopes will be very useful to the extension personnel's as they would be able to utilize the knowledge while imparting training to the target group. These were distributed to DES's for further field testing & trial of technology to the rural men & women of various districts of Haryana. Pick bag designed and developed for Cotton can also be tested for other diversified activities like picking of flowers, vegetables etc.

Field Visit for Taking Measurements**References**

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