



Protective Clothing for Females Engaged in Wheat Threshing

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ABSTRACT

Protective clothing/accessories designed for female farm workers for wheat threshing were: apron, scarf mask, hood mask. Coloured/plain glasses, gloves and shoes were procured from the market. These were given to 15 females for a period of one month for field trials for assessment of suitability and acceptability. The result highlighted that Apron having Chinese collar and sleeves with elasticized cuffs provided protection against dust and wheat husk to upper body ($=2.78$). Hood mask ($=2.92$) as well as scarf mask ($=2.84$) were found to be highly suitable as these were easy to wear, provided protection to neck & face against husk, dust and sun rays. Protective glasses and gloves were found to be highly suitable as these protected their eyes from husk, dust and sunlight ($=3.00$) and protected hands from itching, irritation and cuts & sores ($=2.77$), respectively. Protective clothing /accessories were highly acceptable by the female farmers because these do not have 'adverse effect on work efficiency' ($=1.95$).

Keywords : health hazards, protective clothing, suitability and acceptability

INTRODUCTION

India has world's largest number of agriculture workers 58.4% of population engaged in Agriculture. Most of the farmers have small land holdings therefore activities like sowing, transplantation, weeding, manure application, harvesting, threshing etc. are performed manually. Both males and females work hand-in-hand during all activities. Common health hazards faced by farm workers during wheat threshing due to organic dust are eye irritation/itching, headache, skin irritation/itching, breathlessness, sweating, running nose, skin allergy/ailment, sneezing and bronchitis. To overcome some of these problems, women tie duppata on their face which needs to be tied time and again as it opens frequently and above all it does not provide proper protection. Hence it was felt necessary that women must use proper protective clothing/accessories during wheat threshing for better health and work efficiency which has been highlighted in this paper.

METHODOLOGY:

- Protective clothing developed under AICRP for threshing activity were: apron, scarf mask and hood mask.
- Accessories procured from the market and tried were: coloured/plain glasses and gloves.

Fifteen female farmers were selected from research farm of HAU, Hisar and nearby villages. Protective clothing /accessories were given to the respondents for a period of one month for assessment of suitability and acceptability.

Suitability and acceptability of designed garment/accessories

were assessed on requisite parameters on three point rating and weighted mean score was calculated to draw the inferences.

Based on assessment of suitability and acceptability, protective clothing was recommended for female farm workers.

RESULTS:

Background profile of farm workers

Personal profile of the respondents presented in Table-1 revealed that maximum number of respondents (80.00 %) belonged to the age group of 30 to 50 years, 53.33% respondents had primary education and 53.33% respondents were from nuclear families. 53.33% of the respondents were landless and 46.66% were doing self cultivation, 86.66 % had monthly income in the range of Rs. 20,000 to 30,000.

Suitability assessments of developed protective clothing/accessories of female farm workers during wheat threshing

Apron:

The assessment of functional features highlighted that chinese collar prevented sticking of husk/dust on neck portion hence was assessed to be highly suitable ($\bar{x}_w = 2.53$). Full

sleeves with elastic at wrist level were found to be highly suitable ($\bar{x}_w = 2.67$) as these were comfortable during wear (\bar{x}_w

$= 2.53$) and provided protection to arm against dust/husk.

Shape, size and position of pocket was found to be appropriate ($\bar{x}_w = 2.90$).

Belt provided at waist level prevents hindrance of clothing while working was also found to highly suitable ($\bar{x}_w = 2.80$).

The overall mean score was found to be highest ($\bar{x}_w = 2.78$).

But female respondents did not accept it as they preferred to wear *kameez* with full sleeves. However it has been recommended for those women who want to wear dress with short sleeves. They can wear it over the *kameez* and also wear with belt or without belt.

Hood-mask:

Data (table 2) elucidated that head cover made of hosiery fabric, in hood mask was found to be highly suitable

($\bar{x}_w = 3.0$) as it protected head & neck from husk/ dust.

Fabric used at the portion of nose and mouth was assessed to be highly suitable ($\bar{x}_w = 3.00$)

as it protected the wearer from inhalation of husk/dust. Height and width of the mask portion was found to be very appropriate ($\bar{x}_w = 3.00$).

Overall hood mask was found to be highly suitable as it could be worn & removed very easily ($\bar{x}_w = 2.60$)

and also very comfortable ($\bar{x}_w = 2.90$).

Scarf-mask:

During field trials it was observed that cambric fabric used in scarf mask protected head and neck from husk/ dust hence was evaluated to be highly suitable ($\bar{x}_w = 3.00$).

Elastic used at nose and forehead portion of mask was assessed to be very useful as it helped the mask to keep it in position ($\bar{x}_w = 2.90$)

and it was assessed to be very comfortable during wear

($\bar{x}_w = 2.90$).

Shape of head cover in respect to its height and width was found highly appropriate ($\bar{x}_w = 3.00$).

It was very easy to tie knot ($\bar{x}_w = 2.50$) and open the knot ($\bar{x}_w = 2.60$) due to straps provided in the mask. Aggregated

score revealed that scarf mask was rated to be highly suitable ($\bar{x}_w = 2.84$).

It is evident from overall mean score that both the mask i.e. hood mask as well as scarf mask were found to be highly suitable scoring ($\bar{x}_w = 2.92$) and ($\bar{x}_w = 2.84$) respectively.

Slight difference was found between the two masks as tying of knot in case of scarf mask was little difficult.

Goggles/plain glasses were also assessed to be highly suitable ($\bar{x}_w = 3.00$)

by female farm workers, as these protected their eyes from husk, dust and sunlight.

Gloves provided to the female farm workers were found to be highly suitable scoring ($\bar{x}_w = 2.77$)

as these has been prevented from irritation and itching on hand ($\bar{x}_w = 2.80$)

and also protected hands from cuts and sores ($\bar{x}_w = 2.75$).

Acceptability assessment of developed protective clothing/accessories

Data pertaining to acceptability assessment for protective clothing/accessories for female farm worker involved in wheat threshing presented in table 3 elucidated that protective clothing/accessories were found to be acceptable to maximum number of female respondents because 'protective clothing do not have adverse effect on work efficiency' ($\bar{x}_w = 1.95$)

followed by 'functional features/fasteners used in the garment do not cause pinching' ($\bar{x}_w = 1.90$),

protective clothing can be washed and maintained easily' ($\bar{x}_w = 1.85$)

and 'to prevent health hazards, one should definitely use protective clothing' ($\bar{x}_w = 1.75$).

Most of the farm workers accepted the statement that 'I will suggest other fellows to adopt protective clothing' ($\bar{x}_w = 1.65$).

It is worth spending extra money on protective clothing

($\bar{x}_w = 1.60$).

A very few respondents revealed that 'protective clothing/accessories look awkward' ($\bar{x}_w = 1.10$)

and take more time while wearing and removing ($\bar{x}_w = 0.80$)

There were a few respondents who did not like protective clothing/accessories as they opined that "The modified garments are protective but no need to adopt these if one is managing with the existing dress' ($\bar{x}_w = 0.55$).

Very few of them were also of the view that "Garments are not comfortable due to functional features' ($\bar{x}_w = 0.25$),

'The functional features in protective clothes cause hindrance at work place' ($\bar{x}_w = 0.22$), 'These garment should not be recommended because they are not useful' ($\bar{x}_w = 0.20$),

and 'The washing and maintenance of protective clothing is difficult' ($\bar{x}_w = 0.16$)

Recommended protective clothing for wheat threshing:

- *Kameez* with full sleeves preferably elasticized cuffs
- Hood mass/Scarf mask
- Glasses/goggles
- Sports shoes
- Mittens/gloves

Conclusion:

Protective clothing/accessories i.e. apron, hood mask, scarf mask, gloves, plain glasses/goggles and shoes tried on female farm worker for suitability and acceptability were found to be highly suitable and acceptable, hence recommended for their health protection.

Table 1: Background profile of female's farm workers for threshing period (n=15)

Sr. No.	Variables	Category	Frequency	Percentage
Socio-personal Variables:				
1.	Age	Below 30 years	3	20
		30-50 years	12	80
2.	Education of Respondents	Illiterate	5	33.33
		Primary	8	53.33
		Middle	2	13.33
		Matriculate	-	-
		Graduate	-	-
4.	Family Type	Nuclear	8	53.33
		Joint	7	46.66
Economic Variables				

5.	Cultivation method	Self cultivation	7	46.66
		Contract	2	13.33
		Sharing basis	1	6.66
		labour	5	33.33
6.	Land Holding	No land	8	53.33
		Upto 5 acres	4	26.66
		5 to 10 acres	3	19.99
7.	Gross Income	Upto 10,000	-	
		10,000 to 20,000	1	6.66
		20,000 to 30,000	13	86.66
		Above 30,000	1	6.66

Suitability level: Highly suitable: 2.34-3.00*, Suitable: 1.67-2.33**, somewhat suitable 1.00-1.66***

Table: 2 Suitability assessments of developed protective clothing/accessories for female farm workers during wheat threshing n=15

Functional features of garments	Characteristics of functional features	WMS	Overall WMS
Apron:1			
Chinese collar	Protects neck from husk/dust	2.53***	2.78***
Elasticized cuffs	Protects arms from husk/dust	2.67***	
Size of elasticized cuff	Comfortable	2.80***	
	Position of pocket	2.90***	
Pocket	Shape and size of pocket	2.90***	
	Belt at waist	Prevents hindrance of clothing while working	
Hood mask			
Head cover of hosiery fabric	Protects head from husk/dust	3.0***	2.92***
	Protects neck from husk/dust	3.0***	
Mask of cambric fabric	Protects from inhalation of husk/ dust	3.0***	
	Height of mask	3.0***	
	Width of mask	3.0***	
	Comfortable	3.0***	
Overall hood mask	Easy to wear	2.6***	
	Easy to remove	2.6***	
	Comfortable	2.9***	
Scarf mask			
Head cover of cambric fabric	Protects head & neck from husk/ dust	3.0***	2.84***
	Protects from husk/ dust inhalation	3.0***	
Elastic at nose and forehead in the mask	Keep mask in position	2.9***	
	Comfortable	2.9***	
Shape of mask	Height of mask	2.8***	
	Width of mask	3.0***	
Size of head cover	Appropriate	3.0***	
Strap for knotting	Easy to tie knot	2.5**	
	Easy to open knot	2.6***	
Overall scarf mask	Easy to wear	2.6***	
	Easy to remove	2.9***	
Goggles/plain glasses	Protects eyes from husk/dust	3.0***	3.00

Gloves/ Mittens	Prevents irritation and itching on hand	2.8***	2.77
	Protects hands from cuts and sore	2.75***	

Suitability level: Highly suitable: 2.34-3.00*, Suitable: 1.67-2.33**, somewhat suitable 1.00-1.66***

Table-3 Acceptability assessment of protective clothing/accessories by female farm workers for threshing activity n:15

Statements	WMS
Protective clothes and accessories are easy to wear and remove	1.75
Protective clothing does not look awkward	1.25
Functional features/fasteners used in garments do not cause pinching	1.90
Protective clothing do not have adverse effect on the work efficiency	1.95
Protective clothing can be washed & maintained easily	1.85
Design of garment are so simple that person good at stitching can follow the design	1.85
It is worth spending extra money on protective clothing	1.70
One must wear protective clothing /accessories to protect against health problems	1.90
I will suggest other fellows to adopt protective clothing	1.65
The garments are not comfortable due to functional features	0.25
The functional features in protective clothes cause hindrance at work place	0.22
The washing and maintenance of protective clothing is difficult	0.16
It will be difficult to get these stitched due to their complicated design	0.55
The modified garments are protective but no need to adopt these if one is managing with the existing dress	0.55
Protective clothing should not be worn as these might entangled while working	0.32
These garment should not be recommended because they are not useful	0.20

Acceptability Score: High: 1.34 – 2.0 Medium: 0.67 – 1.33 Low: 0 – 0.66

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