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De-stalking and its impact on health of women de-stalkers of dry chilli pods in Guntur district

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Abstract

De-stalking is one of the problematic areas in chilli processing units. Generally, a women group is engaged in destalking daily 5-10 hours for 4 months in a year. Majority of the women at a time removed stalks more than 6 pods and destalked more than 6 kg per day. In this context, while de-stalking, the prickliness of the stalks creates injuries to the fingers. Majority of them expressed they got scars on fingers, pain in hands, itchiness in their fingers and also complained that facing difficulty in eating food and attending to the daily household chores. For these problems, used some of their own ordinary protective measures like wrapping of old cloth and purikosa (jute rope) to their fingers, worn band aids, rubber bands, etc. to get rid of them. But the survey results indicated that they were not comfort with their ordinary gadgets. Hence, this survey was indicated that the emerging needs to be developed protective gadget for hands with comfort and low cost while de-stalking of chillies in the study area.

Keywords: De-stalkers, gadgets, chilli pods, health problem

1. Introduction

De-stalking is the process of removing pedicle or stalk of chillies. This work is done manually by women exclusively in the chilli processing units. The reason for de-stalking chilli is for the purpose of good market and to retain the red colour when made into powder. Some buyers/exporters prefer stemless chilli for both domestic and export market. Hence, de-stalking is carried out at trader's level manually. Also, adulteration in chilli powder is done by grinding the whole chilli which deteriorates its quality and its red colour. De-stemming is highly labour intensive. According to an estimate, it requires 106 lakh labour days to handle the country's total chilli production of 16 lakh metric tonnes (Jalgaonkar and Mahawar, 2017) ^[1]. With de-stalking many health problems occurred as per Yadav and Gaba (2016) farm workers engaged in harvesting of wheat and barley crops. Workers revealed that eye irritation/itching, headache, skin irritation/itching, breathlessness, sweating, running nose, skin allergy/ailment; sneezing and bronchitis were the problems they encountered. To avoid these problems Padma and Khateeja (2017) ^[2] developed a functional clothing kit with apron, knitted gloves and scarf for agricultural workers while harvesting different crops like okra, cotton, chilli, sugarcane crops, castor, fodder and removing weed. To overcome the difficult of cuts in hands, severe finger wounds, piercing of thorns. Hence, this study was indicated that there is needed to be developed protective gadget for hands while destalking of chilli.

The survey on de-stalking practice of women workers of chilli was carried at dry chilli processing unit in 'mirch yard' of Guntur town. Fifty women engaged in the activity were involved in the study. The survey results were presented below.

2. Material and Methods

The survey was conducted in chilli processing units in Guntur area. Fifty women de-stalkers were selected for the study to know the working conditions and health problems due to de-stalking of chillies.

3. Results and Discussion

3.1 Age and education of de-stalkers

De-stalking which is a seasonal work may not have attracted men to this activity. Among the different age groups, thirty-six percent of the de-stalkers started to work from 20-30 yrs of ages, fifteen percent between 31-40 yrs. and 41-50 yrs.

Only 4 percent of them started the operation at above 51 years. As seen from table 1, more women belong to the age group of 20-30yrs. It was surprising to see this age group as their earning are very meagre in this activity. When asked about why this age group is working for low wages, it was clarified by them that they have been advised by doctors not to do any strenuous physical work due to surgical intervention

or general weakness. It was also explained by the subjects that women who cannot take up any other field work are generally involved in de-stalking activity. The data pertaining to de-stalkers education indicated that majority (46%) of the de-stalkers studied up to primary class followed by secondary (30%), 10th and above (10%) and illiteracy (14%) respectively (Table 1).

Table 1: Age and education of de-stalkers (n = 50)

S. No.	Starting age of the worker	No. of persons involved	Education	No. of persons involved
1	20-30	18 (36)	Up to Primary	23 (46)
2	31-40	15 (30)	Secondary	15 (30)
3	41-50	15 (30)	10 th & above	5 (10)
4	Above 51	2 (4)	Illiteracy	7 (14)

Figures in parenthesis indicate percentages.

3.2 Experience

The number of years of experience of women de-stalkers indicate that there are few women who have an experience of less than one year to having experience of more than 5 years among the subjects. Greater number of women (40 percent) of the target group have more experience. There were fewer women (16 percent) who do not work continuously but intermittently (Table 2).

Table 2: Experience of women in de-stalking activity (n = 50)

S. No.	Period of experience	No. of persons involved
1	Less than 1 Year	12 (24)
2	1-5 years	10 (20)
3	More than 5 years	20 (40)
4	Not continuous but now and then	8 (16)

Figures in parenthesis indicate percentages

As per the subjects, de-stalking is not a year round activity and is done only during summer months. They also said that rainy and winter seasons are not suitable for de-stalking of chilli.

3.3 Working days, duration, quantity and earnings

a. Working days

Work exposure and duration of de-stalking operation by the farm women on weekly basis was studied and reported. Maximum number of participants (70 percent) revealed that they work 4-6 days a week while 1/5th of the participants work for 7 days a week. A small number of people were found to work from 1-3 days a week in de-stalking operation.

b. Duration

Data pertaining to the duration of the exposure to de-stalking operation indicated that majority of the farm women (64 percent) were exposed for 5-10 hours in day in de-stalking operation followed by 1-5 hours (12 percent) and less than 1 hour (8 percent) but eight farm women (16 percent) were exposed for more than ten hours in day (Table 3).

Table 3: Number of hours of de-stalking per day (n = 50)

S. No.	Daily duration	No. of persons involved
1	Less than 1 hour	4 (8)
2	1-5 hours	6 (12)
3	5-10 hours	32 (64)
4	More than 10 hours	8 (16)

Figures in parenthesis indicate percentages.

c. Pods destalked at a time

A single dried chilli pod is never destalked at a time by them. They take a handful of them and destalk at a time. The reason is because, wages are based on the quantity destalked. Information on this aspect disclosed that more than 6 pods are destalked at a time by more than half of participants (56 percent). Slightly lower number i.e. 5-6 pods are done at a time by 32 percent of them and none destalk less than 2 pods at a time.

The above facts proved that maximum number of workers participate in de-stalking activity for 4-6 days a week, working almost 5-10 hours per day and de-stalking higher number of pods at a time. This indicated the amount of repetitive motion they perform and the level of injury to their hands.

d. De-stalking quantity per day

The data pertaining to the de-stalking output capacity of farm women indicated that more than 6 kg of chillies were destalked by 64 percent of women, 28 percent of them could give an output of 5-6 kgs and 2-4 kg by the last 8 percent of them. None have a output less than 2 kg per day (Table 4).

Table 4: De-stalking quantity per day (n = 50)

S. No.	Turnover per day	No. of persons involved
1	Less than 2 kg	-
2	2-4 kg	4 (8)
3	5-6 kg	14 (28)
4	More than 6 kg	32 (64)

Figures in parenthesis indicate percentages.

e. Earnings

The study revealed that Rs.10 per kilogram of dried chilli pods is paid to the worker. So, from the above table it can be concluded that they earn about 60 Rs. Per day if a maximum of 6 kg is destalked. It was described by subjects that women who are strong enough for physical work do not take up de-stalking activity but are weak and unable to do any other physical work choose this activity.

f. Period of de-stalking

It was found that the period of de-stalking work was slightly more than four months, but women according to their convenience would attend the work for a period of one month to four months.

3.4 Problems in de-stalking operation

All 50 women expressed that they face various problems in de-stalking operation. Facts seen and narrated about the problems faced due to de-stalking operation indicate the physical injury and other conditions they face. In a pilot survey, all participants said that they face many problems

during de-stalking process. The type of problems they encounter were discussed at length and the questionnaire was devised with a number of suggestive conditions faced by women de-stalkers. During the actual interview with the subjects the suggestive conditions were named for their response.

Table 5: Types of problems faced by the farm women while de-stalking (n = Multiple responses)

S. No.	Problems encountered	No. of persons involved
1	Cuts and scars on fingers	12 (24)
2	Pain of fingers and hands	24 (48)
3	Deformation on nails	4 (8)
4	Minor cracks on the fingers/nails	10 (20)
5	Cough due to continuous expose to dry chilli pods	12 (24)
6	Irritation in nostrils due to pungency	30 (60)
7	Feeling of burning/hot sensation on hands, fingers	41 (82)
8	Burning sensation in eyes and mouth	12 (24)
9	Eye irritation	23 (46)
10	Running nose	17 (34)

Figures in parenthesis indicate percentages.

The first and the foremost problem women have encountered was the burning sensation on hands and fingers, which was expressed by 41 among 50 subjects. The next highest scoring was given to problem of irritation in nostril by 60 percent of them. They also said that though this is an existing problem, they would wrap a cloth around their nostril whenever they feel like and not continuously as it would give them a feeling of being choked. 'Eye irritation and 'pain of fingers and hands' were the next two symptoms faced by 30 percent and 24 percent, respectively (Table 5). Cuts and scars on fingers, and minor cracks in nails was a problem for almost 50 percent of the subjects. During the course of discussion, it was noted

that it was this problem coupled with pain in fingers and hand that hampered their household work, food preparation and in eating food.

3.5 Time duration of discomfort

It was indicated by the subjects that 74 percent of the de-stalkers had burning sensation for 1-5 hours. 72 percent had finger pain for a period of 1-5 hours while 60 percent de-stalkers expressed that they suffer pain in hands for 1-5 hours. Almost 20-24 percent of the subjects conveyed that burning sensation and pain existed for more than 5 hours (Table 6).

Table 6: Hours of discomfort after de-stalking (n = multiple responses)

S. No.	Type of discomfort	Duration	No. of persons involved
1	Burning sensation	1-5 hours	36 (74)
		More than 5 hours	16 (26)
2	Pain in fingers	1-5 hours	38 (72)
		More than 5 hours	12 (28)
3	Pain in hands	1-5 hours	30 (60)
		More than 5 hours	20 (40)

Figures in parenthesis indicate percentages.

3.6 Control measures followed

Women explained that to overcome pain and burning sensation they do use some oils, pain balm etc. to reduce the effect. Some use pain balm, some use oil and others use a combination of both oil and balm. From the data collected, it

was seen that seventy percent of them described that coconut oil is used after the work to reduce both pain and burning sensation. Sixteen percent of them said that they simply hand wash. Four percent of them said that they do not give any special attention to the pain and burning sensation (Table 7).

Table 7: Control measures followed for pain and burning sensation (n = 50)

S. No.	Control measures	No. of persons involved
1	Hand wash	8 (16)
2	Apply pain balm	3 (6)
3	Apply coconut oil	35 (70)
4	Both a & b	1 (4)
5	No special attention	2 (4)

Figures in parenthesis indicate percentages

3.7 General protection measures taken by de-stalkers

Information on protection measures, if any followed by them against the problems indicated that ninety percent workers follow some protective measures with indigenous materials to temporarily overcome the problems.

It was witnessed and narrated by them the different type of protective measures followed. Five types of protection

measures followed by them were, wrapping with old waste clothing (14 percent), covering mouth with towels (18 percent), wrapping fingers with Band-Aid (18 percent), wrapping of fingers with cellophane tape (10 percent) and wrapping of fingers with fine jute thread (purikosa) respectively (Table 8) and (Fig 1-a, b and c).

Table 8: Type of protection measures followed (n = 50)

S. No.	Protective measures followed	No. of persons involved
1	Covering mouth with cloth/towels	9 (18)
2	Wrapping fingers with old waste clothing	7 (14)
3	Wrapping fingers with 'Band-Aid'	9 (18)
4	Wrapping fingers with cellophane tape	5 (10)
5	Wrapping fingers with fine jute thread (purikosa).	20 (40)

Figures in parenthesis indicate percentages.

3.8 Comfort with the indigenous protection measures

Survey about comfortability with existing protection measures indicated that they eighty-six percent de-stalkers were not very comfortable with them. The remaining eight percent de-stalkers expressed that they were comfortable.

The remaining 10% women who were not adopting proper protection measures in de-stalking disclosed major reason that

they were feeling tightness with any type of wrapping on fingers after a period of time (36 percent) (Table 9) and very few de-stalkers expressed that the wraps interfere with work (14 percent) and not comfortable/reduces efficiency in removing the stalks (20 percent each) and only 10 percent of the de-stalkers said that measures either become too tight/too loose.

**Fig a:**

Wrapped fingers with purikosa

**Fig b:**

Wrapped finger with old cloth piece

**Fig c:**

Wrapped fingers with Band-Aid

Fig 1: Commonly used gadgets for fingers while de-stalking**Table 9:** Reasons for not adopting the measures (n = 50)

S. No.	Reasons	No. of persons involved
1	Interferes with work	7 (14)
2	Not comfortable to work	10 (20)
3	Too tight/too loose	5 (10)
4	Feeling of tightness after a period of time	18 (36)
5	Reduced efficiency in removing stalks	10 (20)
6	Any other reasons	-

Figures in parenthesis indicate percentages.

3.9 Awareness and willingness on special protective gadgets

Perusal of data indicated that 90% of de-stalkers are not aware of any protective gadgets. Remaining 20% said they are aware of them but do not know completely about them.

The opinion of the de-stalkers in the study area, on willingness to wear protective gadgets indicated that hundred percent opined that they like use protective gear, if provide.

3.10 Suggestive factors in developing protective gadget

The collected data indicated that 78 percent de-stalkers expressed that complete hand protection is required while 20 percent expressed that any measure to protect hands has to help in easy removal of stalks, 1 percent expressed that any gadget developed should be slightly flexible to move fingers freely (Table 10).

Table 10: Suggestions by subjects (n = 50)

S. No.	Suggestions by subjects	No. of persons involved
1	Finger protection	-
2	Complete hand protection	39 (78)
3	Should be slightly flexible to move fingers freely	1 (2)
4	Help in easy removal of stalks	10 (20)

Figures in parenthesis indicate percentages.

Based on group and individual interactions carried out with the women de-stalkers and consolidation of data collected, it can be construed that they were facing finger and hand injury as major problem besides other temporary conditions. Gathered information also revealed that they require a gadget that can help them overcome the problem and at the same time do not hinder their performance. Hence 2 glove types, each with 2 different lengths were designed, which are cost effective, user friendly and without any hindrance of the work efficiency of the de-stalking operation. A total of 4 different designs were developed and were evaluated for their selection and appropriateness by both subjects and experts.

4. Conclusion

In this study, the survey results indicated that majority of the women de-stalkers belongs to the age group of 20-30 and more of them studied only up to primary class in the study area. Majority of them said that they had more than 5 yr

experience in de-stalking and worked for 5-10 hours per day depends on their need to get money. More of the workers de-stalked 6 kg per day. In this context, they are getting problems on hands due to de-stalking. The problems simple head ache and high number of workers encountered some types of problems such as burning sensation, on hands, irritation in nostrils due to pungency of chillies, pain of fingers and hands, eye irritation and running nose. To overcome from these problems most of them used Wrapping fingers with fine jute thread (purikosa) and applied coconut oil when they get burning sensation on hands. But they felt that the followed measures were not giving complete protection/comfort. However 78% de-stalkers suggested complete hand protection during destalking of chillies. Hence, in this study we suggested 3/4th length which are made with cotton and knitted fabric gloves to get comfort and flexibility are suitable for de-stalking purpose.

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