

Occupational health hazards faced by the Dal mill workers

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Received: 18.12.2013; Revised: 14.04.2014; Accepted: 26.04.2014

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■ **ABSTRACT** : Unorganized sector in India is broadly characterized as consisting of units engaged in production of goods and services with primary objective of generating employment and income to the person concern It plays a vital role in terms of providing employment opportunities to large segment of the work force in the country and contributes to the nation. The aim of the present investigation was to find out the problems faced by the Dal mill workers, to find out their existing clothing practices and use of personal protective clothing by the workers. The results revealed that none of the Dal mill workers was wearing personal protective clothing which may be the major reason for the various physical problems faced by them. Major were related to skin allergies, respiratory and pain at different body parts.

■ **KEY WORDS**: Dal milling, Health hazards, Dal mill workers

■ **HOW TO CITE THIS PAPER** : Babel, Sudha, Sharma, Sangeeta and Rajvanshi, Rupali (2014). Occupational health hazards faced by the Dal mill workers. *Asian J. Home Sci.*, 9 (1) : 143-145.

India is major pulse growing country in the world. The different pulses grown in the country are Bengal gram, pigeonpea, green gram, black gram and lentils. Dal milling industry is one of the major agro-processing industries in India. Out of total production of pulses in the country, 75 per cent is processed by these Dal mills. Dal milling is the process wherein the whole pulse is transformed into Dal. After harvesting and drying, the crop is subjected to the primary milling operation which includes de-husking. Haled dust from Dal mill is dust particles of diameter smaller than 10 mm emitted from milling process to the surrounding air, can access through the lower respiratory tract and pulmonary air bags. Dust can be responsible for serious respiratory disorder including asthma. Present research work was undertaken with the objective to assess the occupational health hazards faced by the workers of Dal mill to study their existing dress pattern and the use of personnel protective devices.

■ RESEARCH METHODS

The present study was conducted in Dal mills of Udaipur Division. Two Dal mills from Udaipur and two from Pratapgarh district were randomly selected to fulfill the purpose. Thirty Dal mill workers were purposively selected for the present

study. These Dal mill workers were working at Dal mill from last three years. A questionnaire was used to generate information on self-reported problems. Critical examination of work place was also done to know about the work environment. Data were analyzed using frequency and percentage.

■ RESEARCH FINDINGS AND DISCUSSION

The results of the present study as well as relevant discussions have been presented under following sub heads:

General profile of the respondents:

The general profile of workers is presented in Table 1. Personal profile of the respondents indicated that equal per cent of the respondents belonged to 30-40 and 41-50 years of age group. It was good to note that all the respondents were literate and maximum level was up to Secondary education. Majority of respondents belonged to joint family and main occupation was service. Monthly income ranged from Rs. 5-10 thousand per month. Personal income of good number of workers was Rs.5000 -Rs. 6500 per month. Majority of respondents used to work for eight hours per day. Three fourth of the respondents were male (73.3%) and rest were female (Table 1).

Manufacturing process:

A very simple manufacturing process is followed. Procured pulse is put through a grading machine which separates it into three grades A, B and C. The grading machine also separates the dust and other impurities from the raw pulse. The "A" grade of pulse is believed to be of the best quality and the grade "C" is the least. After grading the upper cover

is removed with the help of water. It is kept outside in the sun to dry. Afterwards another machine with various filters separates the husk and besan (flour of Dal) is produced as a by-product in the process. The Dal is oiled (mustard) for removing the remaining husk and left it in the sun to dry. The refined Dal is now taken to another machine called "Fadka" for breaking the whole grain into two parts. It may take several

Sr. No.	Aspects	Categories	F	%
1.	Age	30-40	12	40.0
		41-50	12	40.0
		51-60	6	20
2.	Education	Literate	8	26.7
		Primary	12	40
		Up to Sec.	10	33.3
3.	Family type	Joint	20	66.7
		Nuclear	10	33.3
4.	Occupation	Service	28	93.3
		Farming	2	6.7
		Shop	-	-
5.	Monthly income (family)	5000-10000	18	60.0
		10001-20000	12	40.0
		20001-30000	-	-
6.	Personal income	> 5000	13	43.3
		5000-6500	17	56.7
		6501-8000	-	-
7.	Working hours	>8hours	25	83.3
		8-10 hours	5	16.7
8.	Gender	Male	22	73.3
		Female	8	26.7

Sr. No.	Problems encountered	Dal mill activities					
		Cleaning %	Dehusking %	Drying %	Sieving %	Packaging %	Loading and unloading %
1.	Skin allergies	50.0	70.0	10.0	16.67	13.33	23.33
2.	Burning sensation on skin	10.0	10.0	20.0	0	0	0
3.	Eye irritation and itching	13.33	20.0	10.0	0	0	0
4.	Neck pain	6.66	23.33	16.66	0	6.6	13.33
5.	Back ache	16.66	16.66	16.66	16.66	13.33	20.0
6.	Shoulder ache	16.66	16.66	16.66	0	6.6	20.0
7.	Pain at hand	40.0	26.66	16.66	40.0	20.0	10.0
8.	Wrist pain	20.0	10.0	16.66	0	20.0	23.33
9.	Body ache	20.0	16.66	23.33	16.66	6.6	10.0
10.	Joint pain	16.66	0	26.0	20.0	6.6	
11.	Watering nose	20.0	23.33	6.6	20.0	0	0
12.	Coughing and sneezing	60.0	10.0	23.33	33.33	16.66	16.0
13.	Breathlessness	30.0	60.0	23.33	23.33	10.0	10.0
14.	Allergic bronchitis	16.66	10.0	10.0	10.0	10.0	10.0

rounds to break the whole grain into pieces. The two separate pieces of the whole grain is called 'Dal'. The final produce is sent to another section called the 'packaging centre'. The Dal is packaged into three different packs of 1 kg to 50 kg each. The Dal is now ready to sell as well as the by-products like besan and the husk. The by products are a good supplement food for animals and are sold between Rs. 8 to Rs. 10 per kg.

Occupational health hazards faced by the Dal mill workers:

Skin allergy was the major problem faced by the Dal mill workers during dehusking (70%), cleaning (50%), sieving (16.67%), drying (10%), packaging (13.33%), loading and unloading (23.33%). Burning sensation on skin was faced by 20 per cent respondents involved in drying activities. It may be due to strong sunlight. Followed by 10 per cent in cleaning and dehusking. Twenty per cent respondents faced the problem of eye irritation and itching during dehusking followed by cleaning (13.33%) (Table 2).

Neck pain was reported by 23.33 per cent respondents during dehusking and 13.33 per cent during loading and unloading. Nearly equal percent of the respondents reported backache and shoulder ache during cleaning, dehusking, drying, sieving while 20 per cent reported during loading and unloading. The problems may be due to faulty posture. Forty per cent of the respondents reported pain at hand while cleaning and sieving activities. Wrist pain was reported by nearly one fourth of the respondents during loading and unloading.

Twenty and slightly more than twenty per cent respondents faced the problem of watering nose during cleaning, dehusking and sieving activities. Coughing and sneezing was encountered by 60 per cent during cleaning, followed by 33.33 per cent during sieving activities. Sixty per cent respondents faced breathlessness during dehusking, followed by cleaning activities (30%). Ten per cent respondents faced allergic bronchitis while dehusking, sieving, packing and loading and unloading. The process of cleaning, dehusking and sieving produces fine organic dust in the environment, which may be one of the reasons for respiratory problems among the workers. The researchers observed that working environment was quite unsafe and unhealthy for workers and also found that the occurrence of various health problems were due to work pressure, long working hours, monotonous work, and insufficient cleaning at the work place.

The present results are also in line with Ray and Dasgupta (2008) that woman workers in small scale industry working in sitting position faced lots of health problems. Neck was the most commonly affected part followed by low back pain. The other problem includes generalized weakness,

insomnia, headache, excessive sweating, burning sensation, swelling of feet and problem with vision (Hunter, 1955).

Existing clothing practices of Dal mill workers:

Information on existing clothing practices was also collected and it was found that majority of them were wearing *kurta* and *pajama* and *dhoti* and *chaps* in feet. *T shirt* and *saffa* and *pagdi* were occasionally worn by the respondents. No one was wearing the cap / hat and mask or face cover. Female respondents were wearing *blouse*, *Ordhni Ghagara* and *Chapal*.

Use of personnel protective devices:

Personal protective devices was not available and was not used. The workers in the work area were not wearing masks and caps on head. No ear muffs were used although noise level was quite high. Use of personal protective clothing would help to protect the workers health from the dust prevalent in the workplace environment.

Conclusion:

This can be concluded that Dal mill workers faced by the major problems related to skin allergies, coughing and sneezing, eye irritation, breathlessness due to presence of fine organic dust in the work environment. Majority of male respondents were wearing *dhoti kurta* followed by pant shirt, while female were wearing *blouse*, *Ordhni* and *Ghaghara*. None of the respondents was wearing the personal protective clothing during work. It is recommended that awareness should be generated among Dal mill workers about the use of personnel protective devices like apron, face mask and ear muffs.

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