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Occupational Health Hazards of Farm Women in Tobacco Cultivation

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ABSTRACT

The health of women is an important indicator of national development as the woman is the preserver of tradition and cultural heritage, manager of resources and rearer of future generation. In tobacco cultivation, women play a crucial role starting from the selection of seeds through sowing, manuring, nursery bed raising, transplanting, harvesting, curing, stringing, grading and packing, etc. These operations are time consuming and they require lot of patience and skill. The long hours of productive physical labour causes exhaustion and drudgery among farmwomen. The study was carried out in Rajanagaram, Korukonda and Rangampeta mandals of East Godavari district. Hundred-farm women labour, working in tobacco were selected following purposive random sampling method for study. A pre tested interview schedule was constructed to study the working conditions and drudgery of farm women. Study revealed a significant contribution of women labourers in every farm operation. All the agricultural operations in tobacco were compared and rated with a difficulty score. The drudgery index score was calculated by taking the parameters of difficulty score, ease of handling, time spent and frequency of performance. The high drudgery index was observed for weeding, watering, manuring followed by harvesting and stringing. The study recommends certain strategies for the benefit of women workers in tobacco depending on the health hazards expressed by them.

Key words : Tobacco cultivation; Farmwomen; Health hazards

The National Safety Council (NSC) consistently ranks agriculture as one of the three most hazardous occupations in the United States. Although the death rate has declined 28 per cent during the last three decades for agricultural-related injuries, it's also gone down in mining (65 %), construction (55 %), and all other industries (59 %). If this trend continues, agriculture will rank solely as the most hazardous industry. According to the report of National Institute of Occupational Health, ICMR (Indian Council of Medical Research), there are certain occupational health hazards in agriculture, which are harmful to the agrarian community. Women workers in India predominantly located in the informal sector of the economy face extremely exploitative conditions of work, which generally lead to a number of health problems. Literature on women workers in the informal sector focuses on their exploitative work relations, differential wages, and so on. A comprehensive attempt was made to take stock of health hazards faced by these workers in an important commercial crop of tobacco.

Tobacco is the most important commercial crop earning about Rs. 8,000 crores as excise tax (2002-03) and Rs.1, 360 crores of foreign exchange through exports to the country and providing employment to 36 million people, who depend on tobacco for livelihood in its various operations directly or indirectly. In tobacco cultivation, women play a crucial role starting from the selection of seeds to nursery bed raising, transplanting, harvesting,

curing, stringing, grading, packing, etc. These operations are time consuming and they require lot of patience and skill. The long hours of productive physical labour, feelings of exhaustion may sometimes cause drudgery among farmwomen. Little has been published documenting the human health and safety implications for workers who produce, handle, store, process or otherwise have contact with agricultural inputs or products. There are health and safety implications that result from exposure to pesticides and chemicals and other inputs and outputs themselves. In addition, there are differential exposures that result from production practices, worker skills and knowledge needed to produce agricultural products or use them as inputs during the production process. The study was undertaken with the objectives to study the involvement of farm women in regular operations of tobacco cultivation, to assess and compare the drudgery in farm operations of tobacco, to examine the occupational health hazards in farm operations of tobacco and to suggest suitable remedial measures and strategies for the improvement of working conditions of farm women.

METHODOLOGY

A sample of 100 farmwomen was selected based on purposive random sampling. Six villages, two each from three tobacco-cultivated mandals were selected purposively. A pre-tested interview schedule was used for collection of data.

RESULTS AND DISCUSSION

The involvement of farm women in various operations of tobacco was studied in the present study. The ratio of men and women involved in all the operations of nursery, field crop and post harvest operations was studied. The ratio of men to women involved in the nursery operations of watering, weeding, manuring, pulling and bundling, plant protection and mulching and demulching is 1M (Man) : 5 W (Women). Regarding field crop management, the ratio of men to women involvement ranges

from 1M:1W (plant protection) to 1M:2.5 W in manuring), 1M:4W in transplanting, 1M: 5W in preparatory cultivation and 1M: 8W in cultural operations. The ratio of man to women involved in the post harvest management ranges from 1M : 4W (grading) to 3M : 9W in harvesting and stringing and 1M : 13W in baling. A number of studies have indicated that the women involvement in tobacco was high (Lakshmikumari and Chari, 1988, K.Nagarajan *et al*, 1998).

Table 1. Drudgery index of farm operations in tobacco

Farm operation	Difficulty score	Body posture	Ease of handling	Time required	Frequency of operation	Drudgery Index
<i>Nursery Management</i>						
Watering	2.89	2.82	2.74	2.30	2.58	2.666**
Weeding	2.74	2.76	2.88	2.89	2.92	2.838**
Manuring	2.40	2.62	2.15	1.82	1.55	2.108
Pulling & bundling	1.30	2.64	2.25	2.06	1.95	2.04
Plant protection	2.67	2.62	2.85	1.28	1.28	2.14
Mulching & demulching	1.38	2.70	1.20	1.09	1.18	1.51
<i>Field Crop Management</i>						
Preparatory cultivation	2.47	2.78	2.65	1.32	2.25	2.294*
Manuring	2.40	2.62	2.15	1.62	2.45	2.248*
Transplanting	2.82	2.85	2.65	1.22	1.33	2.174*
Cultural operations	2.32	1.24	2.18	2.35	2.37	2.092
Plant protection	2.67	2.62	2.85	1.28	1.25	2.134*
<i>Post Harvest Product Management</i>						
Harvesting & Stringing	2.89	2.58	2.91	2.35	1.48	2.442**
Grading	2.54	2.39	2.80	1.60	1.25	2.116
Baling\ Packing	1.62	2.55	2.71	1.62	1.25	1.95

* Significant at 5 per cent level ** Significant at 1 per cent level

The drudgery index was calculated for the activities of the nursery management, field crop management and post harvest product management. The drudgery index was calculated based on the linear combination method using the scores obtained from the degree of difficulty experienced in the work, body posture difficulty, handling difficulty, time spent on the activity and the frequency of operation. The respondents were asked to rate their answers against three point continuum of scores 1, 2 & 3 indicating easy, moderate and difficult. The mean scores were calculated based on the formula,

$$\text{The drudgery score : (in each item)} = \frac{\text{The total scores of the respondents}}{\text{The total number of the respondents}}$$

Drudgery Index : Linear average of drudgery scores

The Table 1 reveals that the drudgery index of the

activities was highly significant for weeding, watering followed by harvesting & stringing. The activities of preparatory cultivation, manuring, transplanting and plant protection were also significant but the average drudgery index score was low because of less of time required and low frequency of work. The energy requirement is higher because of the time spent for the activities. The results of various studies also revealed that many of the agricultural and allied activities consume more time and energy (Mrunalini *et.al*, 1990). Results of various studies are in consonance with the present study indicating that there is more drudgery in the activities of transplanting, weeding and harvesting and post harvesting of the paddy crop (Rajani, 1988; Ratna Kumari *et al*, 1998).

Studies have shown that farm workers suffer from increased rates of respiratory diseases, skin disorders, certain cancers, chemical toxicity, and heat-related illnesses.

Table 2. Perceived health hazards of farm women in tobacco cultivation

Operation	Health Hazard	Causative Factor	Type of Hazard
<i>Nursery management (90- 100 days) 15 th August to 15 th December</i>			
Watering	Shoulder pain, Body ache	Working of arms in repetitive fashion	Physical
Weeding	Low back pain, Pain in joints of arms, Body ache	Bending constantly for hours, in bent posture	Physical
Manuring*	Low back pain	Continuous bending posture	Chemical
Pulling & bundling	Discolouration & Tanning of palms	Working of arms in repetitive fashion	Physical
Plant protection**	Toxicity, Infection, Congestion, Respiratory problem, Insect bite	Constant contact with pesticides, Ignorance about right use of pesticides & chemicals	Chemical Biological
Mulching & demulching	Back pain	Bending constantly for hours in bent posture	Physical
<i>Field crop management (150- 160 days) 1st October – 30 th February</i>			
Preparatory cultivation	Cuts, Wounds, Bodyache & Fatigue	Lack of proper safe equipment	Physical
Manuring*	Poisoning, Toxicity	Inhalation of fumes & polluted air	Chemical
Transplanting	Back pain & Body ache	Long hours of working under scorching sun	Physical
Cultural operations*	Skin problem, Dermatitis, Urinary infections	Parasitic infections. Improper use of spear	Physical
Plant Protection**	Congestion, Respiratory problem	Constant contact with pesticides, ignorance about right use of pesticides & chemicals	Chemical
<i>Post harvest product management (10-20days) 15 th August to 15 th December</i>			
Harvesting & Stringing **	Skin infection, Nausia, Vomitting Allergy, Dermatitis	Nicotine absorption due to constant skin contact with tobacco leaf	Chemical
Grading	Strain & irritation of eyes	Fungal spores and pollen grain	Biological
Baling\ Packing**	Respiratory problem	Inhalation of tobacco dust & husk	Chemical

* Moderately hazardous ** Highly hazardous

The health hazards expressed by the farm women in all the operations of tobacco were collected, the causative factors were analyzed and the type of hazard was noticed (Table 2). The plant protection operations and post harvest operations like harvesting and stringing and packing were found to be highly hazardous. Manuring and other cultural operations were found to be moderately hazardous. By using protective clothing like gloves, aprons and shoes the hazards can be avoided to a moderate extent. Results of many studies were in accordance with the present study indicating that certain operations like in tobacco are harmful for farm women (Ghosh *et al*, 1985).

Strategies for improvement of working conditions :The farm women bare the triple burden of poverty, gender and health problems. They have the least access towards technologies to reduce the drudgery and monotony of the work. These operations are time consuming and they require lot of patience and skill. Based on the health hazards expressed by the women labourers some of the strategies have been suggested for their improvement as follows:

- Use of protective clothing, foot wear, head cover, gloves, mask etc., Information on various kinds of accidents, health hazards and protection against chemicals, insecticides and pesticides should be properly documented and published.

- Development of appropriate cost effective & location specific technology suitable to women’s body stature & ergonomics. The development and standardization of tools in terms of comfort, quality and efficiency by keeping in view of ergonomics of women.
- Functional literacy programmes like training and education of farm women in use of tools, implements and machinery may be emphasized.
- Provision of toilets & adequate washing facilities
- Periodical medical checkup and supervision. Improvement of health & nutrition through various schemes. Combating malnutrition in vulnerable groups through health policies and programmes.
- Upgradation of traditional skills is needed.
- Women should be freed from wage and sex discrimination, exploitation.
- Self-help groups can also be formed cooperative sectors for more coordination in terms of functional operation.

CONCLUSION

The study indicates that the quality of work life of women in agriculture is characterized by long hours of work, disadvantageous postures, and drudgery experienced at work due to the defective and

uneconomical use of human energy. Hence, economically and harmless technologies are needed to enhance the feasible, cost effective, easily operated and eco-friendly quality of life of farmwomen.

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