

# The Association of Skin Rashes with Work Environment, Personal Protective Equipment and Hygiene Practices in Female Farmworkers

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## Background

Skin rashes are common among farmworkers due to the significant cutaneous contact with crop-associated materials, pesticides, and work-related practices. Exposure varies by type of chemicals applied, dosage/method of application, personal protective equipment (PPE), and personal hygiene practices.

The objective of this study was to assess work environment, self-reported personal behaviors and the frequency and location of skin rashes among female nursery and fernery workers in central Florida.



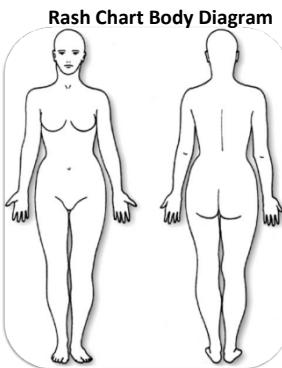
## Methods

A secondary analysis was conducted on data collected in a larger study to assess pesticide risk perception and biomarkers of exposure in Florida female farmworkers. The parent study was a cross-sectional study designed to compare workplace characteristics, behaviors, and health beliefs of female farmworkers working in a nursery or fernery setting. The study included focus groups and used the "Agricultural Work Practices Questionnaire" to explore self-reported pesticide exposure, workplace practices and personal hygiene practices. Additionally a body diagram to document self-reported location of skin rash was collected. Community interviewers assisted farmworkers in using the body diagrams to document self-reported skin rashes.

## Data Collection Tools

The rash chart was based on the work of Lund & Browder (1944) and estimates of Body Surface Area (BSA). Each area of the body was designated a percentage to determine total percentage of rash to body surface area.

The "Agricultural Work Practice Questionnaire" contained questions related to work that could expose the body to plant material and residual pesticides on plants. The questionnaire also surveyed hygiene practices and use of PPE.



**Personal Protective Equipment (PPE) and Hygiene Practices related to Percent of Total Body Rash**

PPE and Hygiene Practices	Frequency	<30% Total Body Rash N (% of Rash category)	>30% Total Body Rash N (% of Rash category)
Hand washing available at work site	Always/Sometimes	56 (82%)	12 (80%)
	Never	12 (18%)	3 (20%)
Soap/Paper towels available at work site	Always/Sometimes	48 (94%)*	7 (64%)
	Never	3 (6%)	4 (36%)
PPE available at work site	Always/Sometimes	19 (29%)	2 (13%)
	Never	47 (71%)	13 (87%)
Shower after leaving work site	Within 30 minutes	41 (62%)	6 (40%)
	Greater than 30 min	25 (38%)	9 (60%)
Remove clothing after leaving work site	Within 30 minutes	45 (68%)**	5 (33%)
	Greater than 30 min	21 (32%)	10 (67%)

\*p=0.015; \*\*p=0.018

## Results

83 female farmworkers between the ages of 20-40 completed skin assessments, including 18 nursery and 65 fernery workers. Nursery workers reported 5.7 average years working in agricultural and fernery workers 10.5 years. Similar distributions of body area covered in rash were reported for and nursery workers (16.8%) and fernery (20%).

The most common sites of rash varied based on exposed skin; rash was most common on forearms (62%), hands (56%), and anterior chest or neck (23%). Areas of non-exposed skin demonstrated rash less than 20% of the time.



## Key Findings

- High prevalence of skin rash among farmworkers** indicates the potential value of using this rash chart in a clinical setting
- Higher degree of rash associated with lack of access to soap and paper towels** for hand washing identifies a need for improved facilities at the work site
- Higher degree of rash seen with greater than 30 minutes before removing clothing** after work highlights an opportunity for health education intervention to limit pesticide exposure

## Conclusions

These findings provide further evidence of the frequency of skin rash among farmworkers. Areas of the body in direct or close contact with crops were more likely to have rash than areas not in direct contact with crops. The association between skin rash and access to hand washing supplies or time to disrobe identify strategies for better practices. Further research is needed to better understand the development of skin rashes among farmworkers, including long-term effects of cumulative exposure, and effective prevention strategies.

References available upon request

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