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Workplace Hazards Faced By The Workers Of Selected Dairy Industry In Dindigul District, Tamilnadu.

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ABSTRACT:

Food industry is the collection of industries that produce a diverse range of food articles including agriculture, food production and processing, preservation, packing, and distribution. In every aspect of the food production and processing line, there are a lot of chances for the workers to encounter occupational hazards. A study was carried out through random sampling method in dairy units. A standard questionnaire was prepared and the survey was taken through personal interviews and google forms. The questionnaire includes socio-demographic profile and questions related to the occupational hazards faced by the workers of dairy units. The workers suffer from slips and falls in the unit is common and may lead to mild fractures, knee and body pain, and respiratory issues due to ammonia gas escape from leakage in pipelines in the refrigeration system. Sleep disturbances due to shift timings of the workers is quite common. The dairy units need to take care of the workers by ensuring proper platforms to work and mitigating the hazards encountered by them.

***Index words*: occupational, fractures, distribution, ammonia gas**.

I.INTRODUCTION

The dairy industry is a significant sector of the food industry, involving the production, processing, and distribution of dairy products. Dairy products are derived from milk, which is obtained from various mammals, such as cows, goats, sheep, and buffalo (FAO, 2019). Technological advancements are crucial in promoting safe and healthy nutrition for society. Within the agricultural sector, dairy and its by-products contribute significantly, fulfilling around 45% of the total animal protein demand. However, in our country, only 27% of total milk production occurs in modern facilities. (Orhan, 2016). Skin diseases are a common issue among dairy sector workers, with conditions like contact dermatitis and eczema being the most prevalent. Maintaining hygiene and sterility requires frequent hand washing and disinfection using soap and ammonia-based solutions. However, this practice can strip moisture from the skin, leading to contact dermatitis. Additionally, exposure to chemicals and additives can contribute to various skin conditions. Peptides and proteins formed during fermentation may trigger eczema and allergic reactions, while enzymes such as trypsin, chymotrypsin, and protease have been identified as causes of contact dermatitis. The most effective way to prevent these issues is the proper use of personal protective equipment. (Dickel et al., 2002).

II.METHODOLOGY

The methodology for the current study' '

- Research methodology
- Research design
- Source of data
- Questionnaire design

2.1. Research Methodology

Research methodology is a way to find out the workplace hazard faced by the workers of selected dairy industry units. It may be understood as a science of studying how research is done scientifically. Distinguished the presence of occupational hazards in food processing industries, specifically dairy units.

2.2 Research Design

This research is the collection on workplace hazards faced by the workers of the selected dairy industry units.The study was carried to find out the naturalistic observation and survey questionnaires, which are attributes of descriptive research.

2.3 SOURCE OF DATA

2.3.1.Primary data

Primary data is been collected through interview method. Primary data consist of original information collected for specific purpose. This study is relied on the response of the employees of dairy units. A structured questionnaire was used to collect the primary data. It aimed to determine insights about information about the health issues faced by the workers of food industry.

2.3.2.Data collection technique

Collection of data for the purpose of the research study was in form of primary data. As the study being presence of industries, primary data include employee's suggestion, open interview and survey questionnaire. The questionnaire was collected based on the sampling techniques from the workplace hazard faced by the workers.

2.4 Sampling Design

Since the presence of food processing industries, the sectors were distinguished. It was not able to collect information from all individual firms for a period of time, hence part of the area was taken for collecting data, analyzing and finding the sectors.

2.5 Sample size

60 samples were selected from various dairy units in Dindigul. Each sample's data was saved. The information in the questionnaire was gathered from industry proprietors and employees.

2.6 Statistical tools used

The collected data were analyzed, tabulated and percentage was calculated by using SPSS.

Sampling method: Random sampling method

Sampling units: Dairy industry.
Sample size: 60

III.RESULTS AND DISCUSSION

The study focused on workplace hazards in selected dairy industry units in Dindigul District, Tamil Nadu. Through a structured survey involving 60 participants, the study identified key occupational hazards, worker demographics, and safety measures implemented within these workplaces**.** The results indicate that while a majority of dairy industry workers feel safe and have access to proper lighting, hygiene, and first-aid facilities, certain hazards persist. Chemical exposure, allergic reactions, inadequate ventilation, and lack of PPE usage remain concerns. Overall, the study highlights the importance of improving workplace conditions to ensure the health and safety of dairy industry workers. Implementing these measures could significantly reduce occupational hazards and enhance worker productivity.

Results are discussed with the following headings:

- Socio demographic profile
- Workplace safety
- Clinical problem

3.1 Socio demographic profile

The demographic information of the respondent is shown in the following table. A total of 60 workers participated in the survey.

Table.1

Age of the Respondents

Variable	No. of respondent	Percent
20 – 30	18	30
30 – 40	17	28
40 – 50	14	23
50 – 60	11	19
Total	60	100

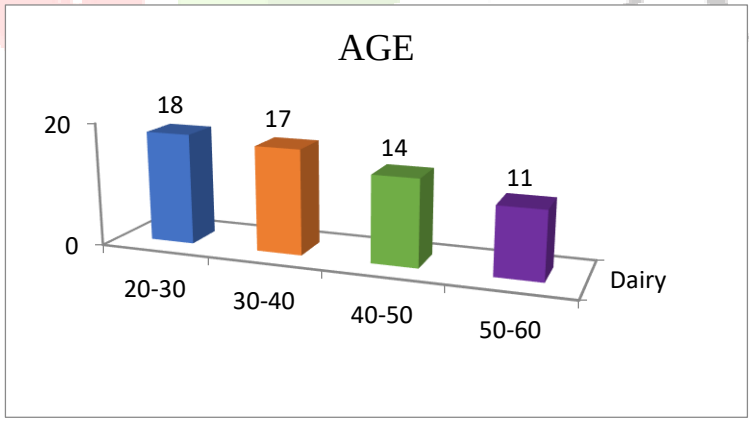

Figure. 1

The table presents the age distribution of respondents who participated in a survey. It categorizes them into four age groups and provides the number of respondents in each category along with their percentage representation. Age Group (Variable) – Categories of respondents based on their age. Number of Respondents – The count of people in each age group.percentage – The proportion of each age group relative to the total sample. The maximum number of workers are in the age group of 20 – 30 years.

Table2

Gender of the respondent

Gender	No. of respondent	Percent
Male	31	52
Female	29	48

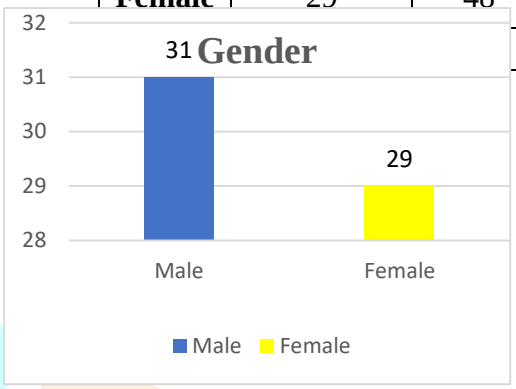

Figure.2

The table presents the gender distribution of respondents. It categorizes respondents into male and female and provides their respective counts and percentages.(Gender Category) – Divides respondents into Male and Female.Number of Respondents – shows the actual count of male and female, 52 percent of male workers and 48 percent of them comprises of female workers.

Table.3

General health issues

S.No	Health issues	Frequency	Percent
1	Yes	18	30
2	No	42	70
Total		60	100

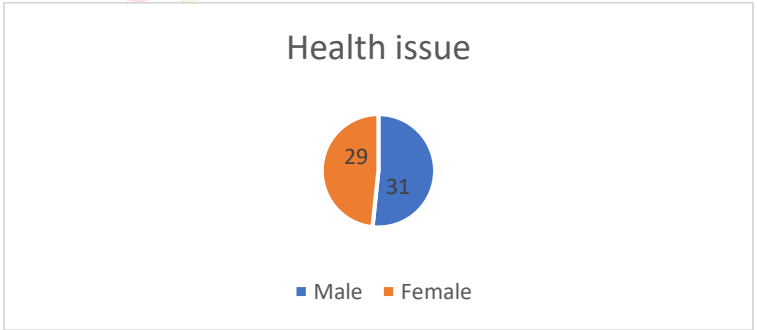

Figure.3

The table presents data on general health issues among respondents. It categorizes responses into two groups: those who reported having health issues and those who did not .The frequency and percentage of each response are also provided. Out of 60 total respondents, 18 individuals (30%) reported having health issues. The remaining 42 respondents (70%) reported no health issues. This suggests that a majority of the respondents (70%) consider themselves to be in good health, while a smaller proportion (30%) experience some health concerns.

Table.4

Experience of worker

S.No	Experience of workers	Frequency	Percent
1	1year	8	13
2	1 to 10 years	26	43
3	10 to 20 years	14	23
4	20 to 40 years	12	21
Total		60	100

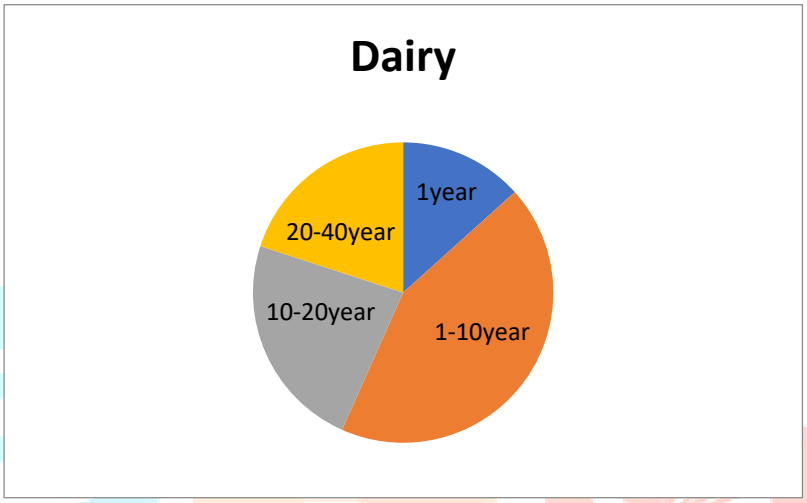

Figure.4

The table presents data on the experience levels of workers, categorized into three groups of 8 workers (13%) have only 1 year of experience, indicating a small proportion of new or relatively inexperienced workers.26 workers (43%) have 10 to 20 years of experience, forming the largest group, which suggests that most of the workforce is mid-career professionals with significant experience.12 workers (20%) have 20 to 40 years of experience, representing the highly experienced segment of the workforce.

1. Workers with 1 year of experience

2. Workers with 10 to 20 years of experience

3. Workers with 20 to 40 years of experience

Table.5

Pains or discomfort

S.No	Pains or discomfort	Frequency	Percent
1	Yes	22	36
2	No	38	64
Total		60	100

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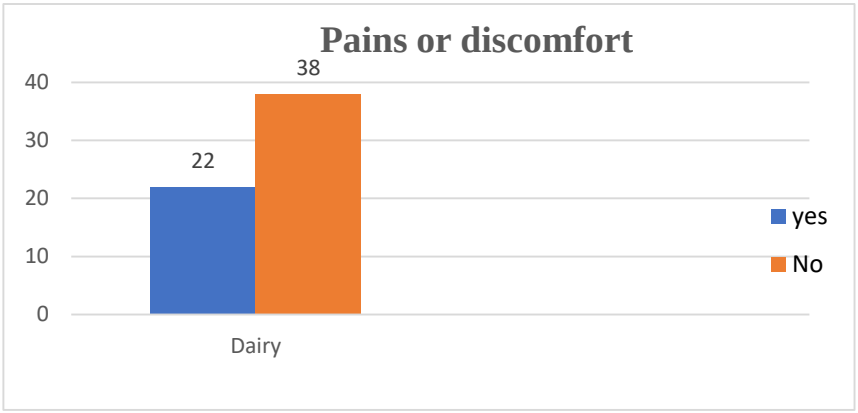

Figure.5

The table, labeled as Table 5, presents data on the occurrence of pain or discomfort among workers. The data suggests that while most workers do not report pain or discomfort, a considerable proportion (over a third) do experience it, which may indicate the need for further investigation into workplace conditions and possible interventions to improve worker health and safety.

WORKPLACE SAFETY:

Table.6

Safe in work place

S.No	Safe in work place	Frequency	Percent
1	Yes	44	73
2	No	16	27
Total		60	100

Figure.6

The table, labeled Table 6, presents data on workers' perceptions of workplace safety. The data indicates that most workers have confidence in their workplace safety, but a substantial percentage (over a quarter) do not feel safe. This suggests a need for further investigation into workplace hazards, safety training, or improvements in protective measures to ensure all employees feel secure.

Table.7

Proper Lighting

S.No	Lighting	Frequency	Percent
1	Yes	52	86
2	No	8	14
Total		60	100

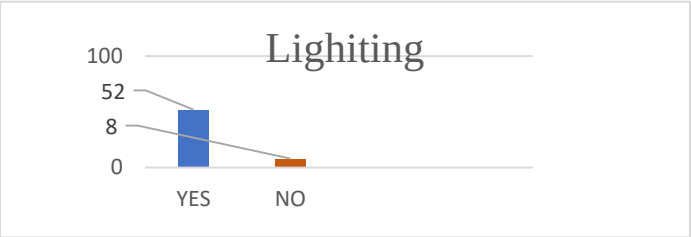

Figure.7

The table, labeled Table 7, presents data on the adequacy of lighting in the workplace. The data suggests that most workers are satisfied with workplace lighting, which is a positive indicator. However, the 14% who report inadequate lighting highlight a potential area for improvement. Employers should investigate specific areas or workstations where lighting may be insufficient and consider enhancements such as additional lighting, task lights, or maintenance of existing fixtures.

Table.8

Ventilation

S.No	Ventilation	Frequency	Percent
1	Yes	27	45
2	No	33	55
Total		60	100

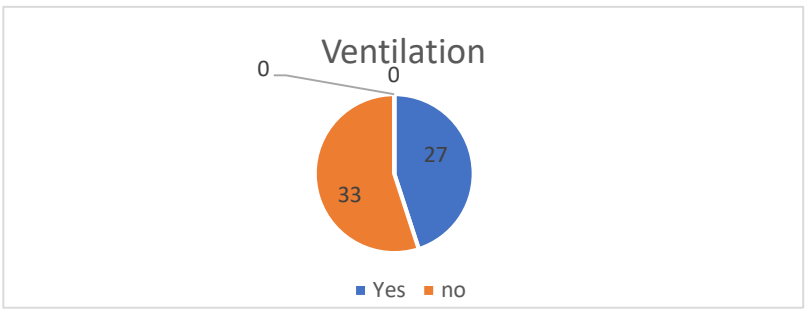

Figure.8

The table, labeled Table 8, presents data on workplace ventilation. Poor ventilation is a significant issue, affecting more than half of the workforce. To improve workplace conditions, management should consider increasing airflow, installing fans, improving HVAC systems, or adding natural ventilation sources like windows and vents. Addressing this issue can enhance worker comfort, productivity, and overall health and safety.

Table.9

Hygiene Aspects

S.No	Hygiene Aspects	Frequency	Percent
1	Yes	49	82
2	No	11	18
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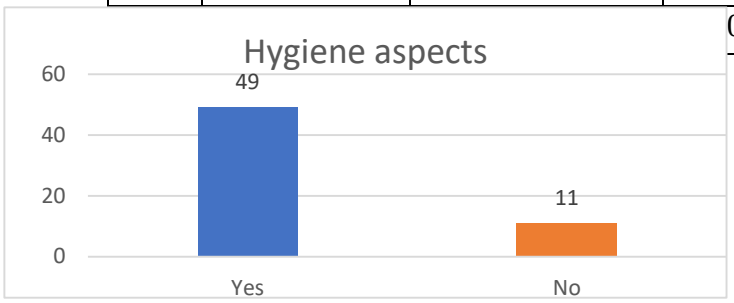

Figure.9

The table, labeled Table 9, presents data on workplace hygiene conditions .The overall workplace hygiene appears to be well-maintained, with the majority of employees (82%) expressing satisfaction .However, the 18% who perceive hygiene as inadequate suggest that there is room for improvement in specific areas.

Table.10

First aid kit in work spot

S.No	First aid kit	Frequency	Percent
1	Yes	45	75
2	No	15	25
Total		60	100

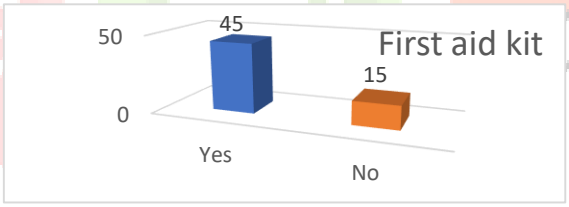

Figure.10

The table, labeled Table 10, presents data on the availability of first aid kits in the workplace. Most employees (75%) have access to first aid kits, reflecting good workplace safety practices. However, the 25% gap suggests that improvements are needed to ensure that every worker has immediate access to first aid resources. Steps should be taken to address this gap by distributing more first aid kits and reinforcing workplace safety policies.

Table.11

Usage of PPE

S.No	PPE	Frequency	Percent
1	Yes	48	80
2	No	12	20
Total		60	100

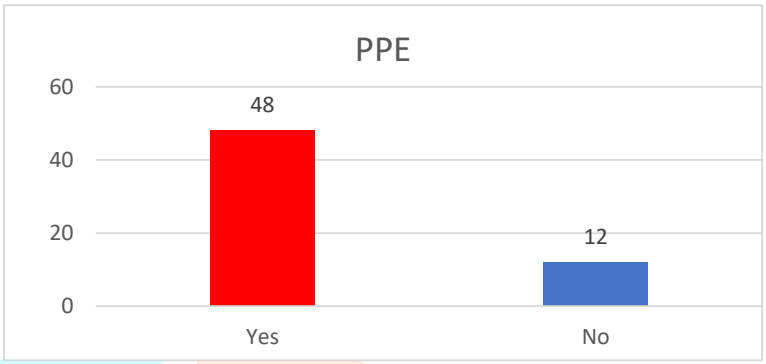

Figure.11

The table presents data on the usage of Personal Protective Equipment (PPE) among a sample of 60 individuals. The majority of individuals (80%) comply with PPE usage, indicating a strong adherence to safety measures in the workplace. However, a significant minority (20%) do not use PPE, which may pose a safety risk. These findings suggest that while PPE compliance is generally high, efforts could be made to address the reasons why some individuals do not use it. This could involve better enforcement, education, or availability of PPE.

Clinical problem

Table.12

Allergy symptoms

S.No	Allergy symptoms	Frequency	Percent
1	Yes	18	30
2	No	42	70
Total		60	100

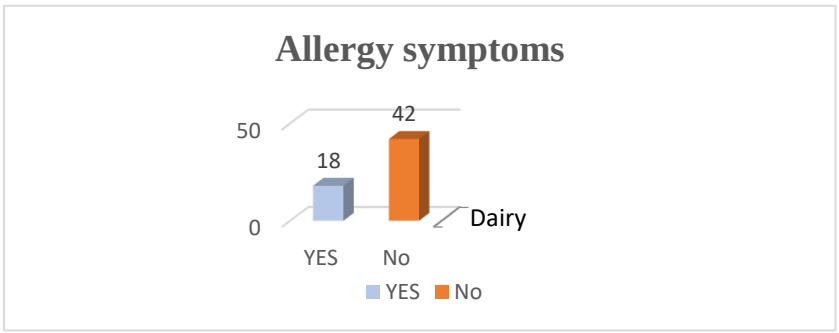

Figure.12

The table presents data on the prevalence of allergy symptoms among a sample of 60 individuals. The majority (70%) do not suffer from allergy symptoms, suggesting that allergens may not be a widespread issue in the environment studied. However, a significant minority (30%) do experience allergy symptoms, which may indicate exposure to allergens in the workplace or general environment.

Further investigation may be needed to identify potential allergens and implement measures to reduce exposure for affected individuals.

Table.13

Chemical exposure

S.No	Chemical exposure	Frequency	Percent
1	Yes	28	47
2	No	32	53
Total		40	100

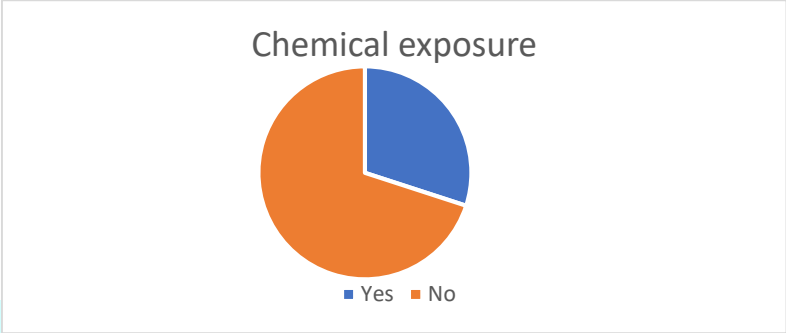

Figure.13

The table presents data on chemical exposure among a sample of 60 individuals. A significant proportion (47%) of individuals are exposed to chemicals, indicating a potential workplace or environmental hazard. The majority (53%) are not exposed, suggesting that certain roles, departments, or environments may be more at risk than others. Given the nearly even split, workplace safety measures should be assessed to minimize chemical exposure. This could involve improved ventilation, use of personal protective equipment (PPE), and proper handling procedures. Further investigation might be needed to determine the types of chemicals involved, their effects, and possible mitigation strategies. The exposure of ammonia gas from cold storage units and prolonged exposure lead to skin irritations and allergies.

Table.14

Hazards slip

S.No	Hazards slip	Frequency	Percent
1	Yes	18	30
2	No	42	70
Total		60	100

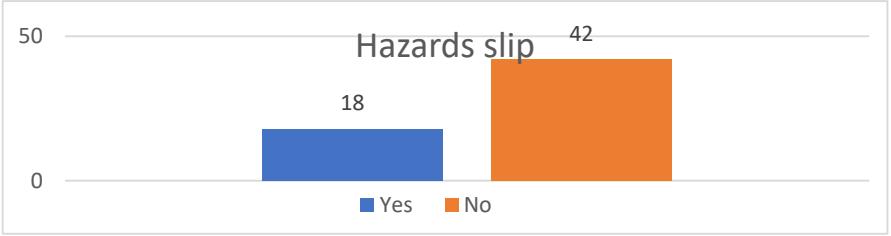

Figure.14

The table presents data on hazard slips among a sample of 60 individuals.A majority (70 to 60) did not encounter hazard slips, indicating that workplace safety measures may be effective for most individuals.However, 30% experiencing hazard slips is still a significant concern, as slips can lead to injuries and workplace accidents.This suggests the need for improved safety measures, such as better

flooring materials, anti-slip mats, proper signage, and employee awareness programs to further reduce slip hazards.

Table.15

Noise

S.No	Noise	Frequency	Percent
1	Yes	15	25
2	No	45	75
Total		60	100

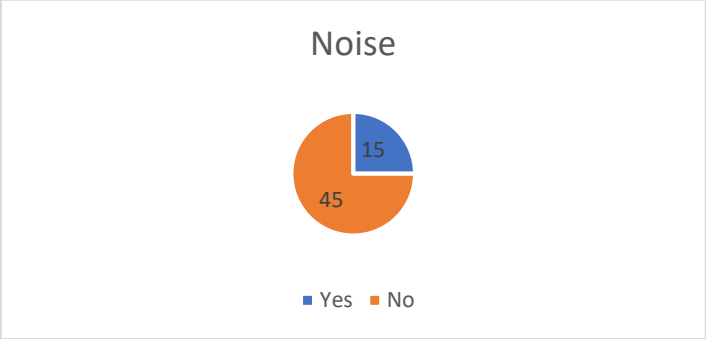

Figure.15

The table presents data on noise exposure among a sample of 60 individuals. The majority (75%) of individuals do not find noise to be a significant problem in their environment, suggesting effective noise control measures. However, 25% reporting noise issues indicates that a quarter of the sample is affected, which could lead to potential health risks such as hearing damage, stress, and reduced productivity. This suggests a need for further assessment of noise levels, potential installation of soundproofing materials, provision of personal protective equipment like earplugs, and enforcement of noise control policies.

CONCLUSION:

The study focused on workplace hazards in selected dairy industry units in Dindigul District, Tamil Nadu. The study results indicate that while a majority of dairy industry workers feel safe and have access to proper lighting, hygiene, and first-aid facilities, certain hazards persist. Chemical exposure, allergic reactions, inadequate ventilation, and lack of PPE usage remain concerns. Overall, the study highlights the importance of improving workplace conditions to ensure the health and safety of dairy industry workers. Implementing these measures could significantly reduce occupational hazards and enhance worker productivity.

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