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Critical Control Point Analysis of Workers Uniform Used in Dairy Processing Plants: A Post-Modern Perspective

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1. Dairy Production

Dairy plants are discovered everywhere throughout the world, but since their sizes and the sorts of made items differ immensely, it is difficult to give general qualities. The dairy business can be partitioned into a few creation areas. Every division produces wastewater of a trademark structure, contingent upon the sort of item that is delivered (Dairy, N., & Board, D., 2012)

2. Dairy Processing Stages

The dairy industry has several important processes like milk receiving unit, storage tanks, clarification, pasteurization, milk and milk products manufacturing, packing, storage and shipment. (Croguennec, T, et al 2016), (Park, Y. W, et al 2013)

3. Post Modern Perspectives of Hygiene and Health Conditions in Dairy Production

The cutting edge dairy industry needs to assume an urgent job in providing sheltered and secure nourishment for human; anyway the expanding requests for animal protein have in numerous area rapidly driven policy creators, directors and manufacturers to build strong health and hygiene policies. (Vaarst, M, et al, 2001)

The rising misfortunes because of lessened longitivity, lifted expense of treatment and animal expulsion, and unsteady feed, have truly tested the world dairy industry (Edwards, R. C, 1978). The mind boggling medical problems including annihilating metabolic sicknesses among workers in different level and related immune deficiencies regularly occur in the dairy industry (Kristensen, E. S., et al, 2001). A noteworthy all inclusive implemented activity has been generally scattered to truly modify the circumstance by means of an assortment of sickness control programs (Birhanu, W, 2017).

4. Critical Control Point Analysis in Dairy Production

The following section briefs out the hazard level of dairy production at various levels:

The following Table 1 shows the waste production data of dairy production unit. It is evident that the waste water production in different production section of dairy industry on an average is 2400 and ranges upto 12400. The Biochemical Oxygen Demand on an average is from 0.5 to 71 and ranges up to 5.5. The suspended solids range to about 0.2 and nitrogen and phosphorous emission is from 0.15 and 0.012 (Al-Saed, A. K, et al, 2012).

Table 1: Waste Production Data

S.No	Details	Average	Range
1.	Waste Water Production	2400	Up to 12400
2.	Biochemical Oxygen Demand	0.5 to 71	5.5
3.	Suspended Solids		2.0
4.	Nitrogen		0.15
5.	Phosphorous		0.012

Table 2: Air Pollution Data

S.No	Activity	Air Emission	Rate of emission
1.	Warming by consuming gas or oil	Carbon	0.05
		Carbon dioxide	90
		Nitrogen oxide	0.1
		Sulphur dioxide	0.5
2.	Producing milk powder	Fine dust	0.5
3.	Cleaning	Volatile organic compounds	0.05

The Table 2 shows the air pollution data of dairy production unit. It is evident from the table that on heating by burning gas or oil the carbon emission ranges to 0.05, carbon dioxide emission is about 90, nitrogen oxide emission is about0.1 and sulphur dioxide emission is about 0.5. While producing milk powder the fine dust emission is about 0.5 and the volatile organic compounds produced while cleaning ranges to about 0.05 in various production processes of dairy production.

The Table 3 shows the dairy processing management's attitude in different level milk product manufacturing which ranges from poor to fair.

Table 3: The executive's demeanor towards waste generation

S.No	Product	Milk Processed	Biological Oxygen Demand	Waste Water	Executives Level
1.	Milk	60000	8	5	Poor 1

2.	Cottage Cheese	295000	70	12.5	Poor 2
3.	Milk, Cottage Cheese	409	3	1	Fair 8, 9
4.	Milk Powder, Butter	90,000	3	2.5	Fair 12, 14

5. Identified CCPs in Workers Clothing and Uniforms

Representatives ought to pursue these rules to guarantee sustenance wellbeing:

The Uniforms, overskirts, and articles of clothing of the specialists ought to be spotless toward the start of each move and changed consistently wherever fundamental. The Uniforms or covers ought not to be worn outside the production zone. The specialists must abstain from utilizing hankies for wiping or cleaning out noses and should utilize dispensable tissues and wear expendable gloves (McAloon, C, et al, 2015). Spotless clean is known as "a decrease in microbial checks to a dimension free of microscopic organisms, infections and other ailment creating living beings".

Soaps and detergents have some microbial properties and hot water washing is recommended for the workers uniforms. There is a possibility of cross contamination during drying workers uniforms hence they must be properly wrapped in polythene bags to ensure microbial protection.

Customary materials utilized for workers garments, similar to vinyl and polyurethane, have clean ability issues. The correct materials can advance sustenance and worker security. A vinyl overskirt, for instance, will in general solidify after continued cleaning and presentation to cool temperatures. The plasticizers used to make vinyl are a flexible material which will begin to drain out. Every so often the material turns out to be hard and weak, and it could begin flecking into the nourishment supply. Professional clothing must incorporate different shirts, jeans and coveralls explicitly intended for nourishment preparing situations, all without catches or pockets that could include potential for pollution. What's more, shading coded pieces of clothing can enable supervisors to more readily recognize laborers and guests who could be polluting sustenance items by being outside their assigned work regions. Research demonstrates 100 percent spun-polyester pieces of clothing give more elevated amount of cleanliness than cotton. Trucks used to transport clean garments ought to be either assigned for conveying clean garments just or furnished with an expendable plastic liner or a dispensable nylon liner/cover to guarantee clean garments that don't contact trucks or ruined articles of clothing. Every clothing preparing plant ought to have a viable irritation control program to limit dangers (Cullor, J. S, 1997).

6. Alleviating Measures of Critical Control Points

The following measures and conditions that are recommended:

6.1 Administration and Regulation

It is imperative that directors and managers, who are mindful in any case to guarantee the quality and wellbeing of dairy items, have enough learning of dairy cleanliness standards and practices to have the capacity to pass judgment on potential dangers, make proper preventive and restorative move, and guarantee that compelling checking and supervision happens.

6.2 Facilities

Successful risk control expects thoughtfulness regarding great cleanliness plan and development, suitable area, and the arrangement of satisfactory offices. Contingent upon the idea of the activities and the dangers related with them, premises, gear and offices ought to be found, planned and built to guarantee that:

- The industry is found, developed and kept up as per clean plan rehearses.
- There is a straight (one way) item stream and traffic control to limit immediate or circuitous cross-pollution from crude to cooked materials.
- Different types of defilement are limited.
- Proper Plan and format allow proper upkeep, cleaning and sterilization and limit airborne defilement.
- Surfaces and materials, specifically those in contact with nourishment, are non-lethal.
- Suitable temperature and humidity level as prescribed by dairy industry standards must be maintained throughout the production process.
- Strong bug control approaches ought to be set up.

6.3 Manufacturing Apparatus

The machineries and apparatus coming into contact with milk products should have the following characteristics:

- They ought to be planned and built to guarantee that they can be satisfactorily cleaned, sanitized, and kept up to stay away from the defilement of nourishment.
- They ought to be produced from non-poisonous materials.

6.4 Safeguarding, Cleaning and Hygiene

Sufficient places, reasonable assigned, ought to be accommodated cleaning sustenance, utensils and types of gear. Such offices ought to have a sufficient supply of hot and cool versatile water. Where suitable, cleaning should expel buildups promotion dirt's, which might be a wellspring of sullying. The essential cleaning techniques and materials will rely upon the idea of sustenance business.

6.5 Bug Control

Successful vermin control ought to be operational consistently, in light of the fact that bothers represent a noteworthy risk to the wellbeing and reasonableness of sustenance.

6.6 Squander Management

Sufficient seepage and waste transfer frameworks and offices ought to be given. They ought to be planned and built so that the danger of defiling nourishment on the convenient water supply is killed.

6.7 Staff Hygiene

People who don't keep up a proper level of individual tidiness, who have certain ailment of conditions, or who act improperly can debase nourishment and transmit sickness to purchasers.

6.8 Cross Contamination

The dairy industry workers are prone to direct contact with pathogens at different levels while in contact with floor or through air. It is a perquisite that the workers and the visitors need to put on hygiene protective apparel including their shoes and ensure that they wash their hands and legs prior to entering the workplace.

7. Conclusion

The sustainability of the dairy production industry lies on the postmodern perspectives of taking care of employee's hygiene and health conditions. Although Science and Technology has brought tremendous improvement in dairy production the industry is severely prone to be affected under different conditions which are unavoidable. Hence the growing trends of dairy industry have opted for severe health and safety measures that are yet under constructive phases only.

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