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# Sanitation Training for Food Service Industry: Tops Supermarket as a Case Study

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## *Abstract*

*A collaborative project between Tops Supermarket and Assumption University on "Sanitation Training for Food Service Industry" was conducted in all Tops Supermarket branches in Bangkok and throughout Thailand. The sanitary conditions in the supermarkets before training did not meet the standard of Good Manufacturing Practice (GMP). AU took part in setting up the training teams to educate the staff in all the branches on GMP. After the training, there was some improvement in sanitary condition especially in the areas of management, personnel supervision, cleaning technique and food handling. The staff in food service department became familiar with the sanitation procedure and practice that were required for the routine performance of their job. Nevertheless, the personal hygiene still needs to be improved.*

***Keywords:*** *Food services industry, GMP, personal hygiene and sanitation.*

## Introduction

As changing consumer behavior and improvement of technology alter the way the manufacturers and retailers respond to market needs, conventional theory and practice at every stage of evolving distribution systems are now being critically re-evaluated. At the retail level, increased competition, technological development, over-supply of food products and new consumer demands are forcing companies to change from supply (push)-oriented production to demand (pull)-oriented production.

New demands could be described as:

- Environmental friendly production
- High quality of food with a long shelf life
- Short lead times (fresh products)
- Products in broad assortments available throughout the year
- Competitiveness

However, cleanliness and safety of food are of utmost concerns for the customers. Even though food production, handling, preparation techniques and eating habit have changed, one fact remains - i.e. food can be a source of microorganisms that can cause illness. As handling and processing in modern retail supermarkets have increased the journey of hazardous microorganisms from a production area to a consumer table, the opportunities for food to be contaminated with microorganisms have considerably increased and this has become a matter of great public health concern.

The primary goal of a food service sanitation program is to protect the consumers from contamination or to reduce the effect of the contamination. Since pathogenic microorganisms can be found everywhere with approximately 50% on the personnel handling food, big chain supermarket like "Tops" that supplies high-quality fresh foods is required to implement a Good

Manufacturing Practice (GMP) in all production stages of its fresh products. With the collaboration between Tops Super-market and Assumption University, the Sanitation Training Program for Food Service Industries has been implemented in all branches of Tops Supermarket in Bangkok and throughout Thailand.

## Objectives

The objectives of the Training are:

1. To comply with GMP.
2. To prevent any outbreak of diseases caused by hazardous microorganisms.
3. To improve the quality and shelf life of foods.
4. To reduce energy, maintenance, and insurance costs.
5. To ensure high quality products.

## Training Steps

The training program for the staff consists of the following steps:

1. Survey of existing sanitary condition of Tops Supermarket before training.
2. Training of the management personnel on the following topics:
   - Importance of food sanitation
   - Facility and equipment design
   - Food contamination
   - Personal hygiene and sanitary food handling
   - Cleaning technique
   - Pest control
3. In-house training for the employees:
   3.1 Training the workers in the same topics as for management personnel given above.
   3.2 Practical demonstration at each department on:
   - Dressing method
   - Hand washing method
   - Cleaning technique
4. Auditing (after one month of training).

## Results and Discussion

The effectiveness of the training program can be evaluated by comparing the performance *before* and *after* the training in the following aspects:

**Management and personnel supervision**

*Before:* The management and personnel supervision on food sanitation was done by a common sense without any knowledge on GMP. The emphasis was more on marketing aspects like appearance and low cost of food items rather than cleanliness and hygiene.

*After:* The management had realized its responsibility adheres to GMP that subsequently influenced the safety of the product and was able to transfer the knowledge to the staff.

**Personal hygiene**

***Hand Cleaning:***

*Before:* Sanitation procedure was not properly followed by the workers. Detergent and sanitizer were rarely used. The workers spent little time on washing hands. It was a common sight to see the workers wearing the ornaments, or eating and drinking in the working area.

*After:* The workers realized that their hands were media for transferring pathogenic microorganisms. So, they washed their hands more frequently before, during, and after work.

***Uniformity:***

*Before:* The workers felt reluctant to wear proper uniform which includes gloves, hair net, apron and boots. They felt convenient to work with bare hands. They

complained that the gloves, the hair net and the boots were too uncomfortable to put on.

*After:* Most of the workers changed their attitude towards wearing the uniform, the hair net, the gloves, the apron and the boots during work. However some showed little improvement.

***Hygienic practices:***

*Before:* As mentioned earlier, the workers ate and drank during work. Hair-restraint was not used by female workers.

*After:* No improvement was observed.

***Limiting the growth of the organisms of public health concern by temperature and time control:***

*Before:* Previous practice for thawing was done without cover. The frozen products were left in the sink for a long time. Thawing water had not been changed when different products were thawed.

*After:* Improvement on a thawing procedure was observed in some branches while others were not.

***Food characteristics:***

*Before:* Improper way of handling specific foods was observed.

*After:* Few branches showed improvement while most of the branches have neglected.

***Storage of equipment and utensils:***

*Before:* The storing condition was poor. It was noticed that most of the equipment and utensils were misplaced and mixed up with the other category and even personal belongings (e.g. cosmetic and mirror were found in the working area, etc.).

*After:* Equipment and utensils were found to be stored properly in many branches.

***Cleaning of equipment and utensils:***

*Before:* No cleaning during work was observed, e.g. the preparation table was cleaned with the detergent only once a shift.

*After:* The managers set up a cleaning schedule for the workers.

***Sanitization of equipment and utensils:***

*Before:* Laundry detergent was used for cleaning equipment, utensils, wall, floor, and preparation table in some branches.

*After:* All branches showed improvement by using special detergents and sanitizing agents.

***Cleaning of utensils:***

*Before:* Detergent, sanitizing agent, cloth, and brush were not made available to clean utensils. Misuse of the cleaning agents and tools was observed.

*After:* The managers provide necessary materials for cleaning.

***Pest control:***

*Before:* Rodent droppings were found in the cabinets, on the floor, and in the corners of the rooms. Cockroaches were seen in the working area.

*After:* Less frequency of pest finding was recorded. After training, 15 categories of GMP were investigated and the result was shown in Table 1.

**Table 1. Comparison of sanitation situation before and after training.**

| Items | Before Training | After Training |
|---|---|---|
| *1. Management and personnel supervision* | | |
| 1.1 Assignment of responsibility | + | ++ |
| 1.2 Demonstration of knowledge | + | ++ |
| 1.3 Duties of person in charge | + | ++ |
| *2. Personal cleanliness* | | |
| 2.1 Hand and arms | | |
| 2.1.1 Clean condition | + | + |
| 2.1.2 Cleaning procedure | 0 | + |
| 2.1.3 When to wash | 0 | + |
| 2.1.4 Where to wash | + | + |
| 2.1.5 Hand sanitizers | 0 | + |
| 2.1.6 Fingernail maintenance | 0 | + |
| 2.1.7 Jewelry prohibitions | 0 | 0 |
| 2.1.8 Outer clothing cleanliness | + | + |
| 2.2 Others | | |
| 2.2.1 Boots availability | + | + |
| 2.2.2 Apron | + | ++ |
| 2.2.3 Gloves | 0 | 0 |
| *3. Hygienic practices* | | |
| 3.1 Eating, drinking at work | 0 | 0 |
| 3.2 Discharge from eyes, nose, mouth | + | + |
| 3.3 Hair restraint effectiveness | 0 | + |
| 3.4 Pet handling prohibition | + | ++ |
| *4. Contamination from consumers* | | |
| 4.1 Food display | + | + |
| 4.2 Condiment protection | + | + |
| 4.3 Self-service operation | + | + |
| *5. Limiting organisms of public health concern by temperature and time control* | | |
| 5.1 Frozen food | + | + |
| 5.2 Slaking | 0 | + |
| 5.3 Thawing | 0 | + |
| 5.4 Cooling | + | + |
| 5.5 Cooling Methods | + | + |
| *6. Food characteristics* | | |
| 6.1 Safe | + | + |
| 6.2 Unadulterated | + | + |
| 6.3 Honestly presented | + | + |
| *7. Protection from contamination* | | |
| 7.1 Contamination from employees' hands | 0 | 0 |
| 7.2 Contamination when tasting | + | + |
| 7.3 Separation of different food items | 0 | + |

| Items | Before Training | After Training |
|---|---|---|
| 7.5 Non-tested additives | + | + |
| 7.6 Washing fruits and vegetables | + | + |
| 7.7 Food in contact with water or ice | + | + |
| 7.8 Food storage | 0 | + |
| 7.9 Hot holding | + | + |
| 7.10 Cold holding | + | + |
| 7.11 Ready-to-eat food expiry date | + | + |
| 7.12 Ready-to-eat food disposition | + | + |
| 7.13 Pest controlling equipment | 0 | 0 |
| 7.14 Proper temperature | + | + |
| 7.15 FIFO | 0 | + |
| 7.16 Thermometer | + | + |
| *8. Food ID / presentation / labeling accurate representation* | | |
| 8.1 Standards of identification | + | + |
| 8.2 Honestly presentation | + | + |
| 8.3 Food labels | + | + |
| 8.4 Other forms of information | | |
| *9. Design and strength* | | |
| 9.1 Durable food contact surfaces | 0 | 0 |
| 9.1.1 Equipment and utensils | + | + |
| 9.1.2 Food temperature measuring devices | + | + |
| 9.2 Cleanability | | |
| 9.2.1 Food contact surfaces | + | + |
| 9.2.2 Temperature measuring devices | + | + |
| 9.2.3 Sinks | 0 | + |
| 9.2.4 Cutting board | 0 | + |
| 9.2.5 Refrigerator | 0 | + |
| 9.2.6 Ventilation hood systems | 0 | + |
| 9.2.7 Proper material used for food display | + | + |
| *10. Number and capacities* | | |
| 10.1 Cooling / heating / holding capacities | + | + |
| 10.2 Ventilation hood systems | + | + |
| 10.3 Utensils for consumer self-service | 0 | + |
| 10.4 Food temperature measuring devices | + | + |
| *11. Maintenance and operation* | | |
| 11.1 Good repair and proper adjustment | + | + |
| 11.2 Ventilation hoods drip prevention | 0 | + |
| 11.3 Cutting surfaces | + | + |
| 11.4 Nonfood-contact surfaces | 0 | 0 |
| *12. Cleaning of equipment and utensils* | | |
| 12.1 Food-contact surfaces and utensils | 0 | + |
| 12.2 Cooking and baking equipment | + | + |
| 12.3 Nonfood-contact surface | 0 | + |

| Items | Before Training | After Training |
|---|---|---|
| 12.4 Floor | + | + |
| 12.5 Drainage system | 0 | + |
| 12.6 Cool storage room | 0 | + |
| 12.7 Street vender | 0 | + |
| *13. Sanitization of equipment and utensils* | | |
| 13.1 Proper method of sanitization | 0 | + |
| 13.2 Residue left | + | + |
| *14. Design, construction, and installation* | | |
| 14.1 Floors | + | + |
| 14.2 Walls | + | + |
| 14.3 Ceilings | + | + |
| 14.4 Junctures | + | + |
| 14.5 Dressing rooms and lockers | 0 | + |
| 14.6 Controlling pests | + | + |
| 14.7 Unnecessary items and litter | 0 | + |
| 14.8 Light-bulb protecting shield | 0 | 0 |
| 14.9 Food display | + | + |
| 14.10 Toilet rooms | + | + |
| 14.11 Food display shelf | + | + |
| *15. Cleaning utensils* | | |
| 15.1 Bucket | 0 | + |
| 15.2 Detergent | 0 | + |
| 15.3 Sanitizing agent | 0 | + |
| 15.4 Cloth | 0 | + |
| 15.5 Brush | 0 | + |
| 15.6 Other equipment | + | + |

***Note:*** *0 = poor sanitation*
*+ = proper sanitation*
*++ = good sanitation*

## Conclusion

Before the training, the sanitary condition was considered to be relatively poor in many branches of Tops Supermarket. After the training and implementation of GMP, there have been some improvements in many categories in most of the branches. Nevertheless more attention still needs to be paid for certain categories.

## Bibliography

Marriolt, N.G. 1994. Principles of Food Sanitation. Chapman & Hall, New York.

USFDA homepage: http://www.fda.gov

The Online Food Safety Training Manual: http://www.foodsafety.org/train/