Education is the Key to Solving Sanitation Problems

GAIL C. HOLLAND

Meat Packers Council of Canada, 5233 Dundas Street W., Islington, Ontario M9B 1A6, Canada

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ABSTRACT

Although there is some justification in claiming that an effective sanitation program extends product shelf-life, reduces spoilage, provides protection from disease and infection and improves company productivity, the primary motivating force for management to promote sanitation is its direct impact on corporate planning, corporate marketing, and the corporate relationship with the law. Management’s commitment to corporate security — its entity and financial security — correlates directly with market share. Since market share is directly related to predict acceptability, then effective sanitation becomes an economically viable program. Once a sanitation program has received support by management, and the tools of sanitation have been provided via the sanitarian and QC laboratory, the sanitation message must be taught and followed without exception by management supervisors, employees and inspectors. Industry education may occur through trade associations which provide educational materials. Universities which offer correspondence courses, professional associations which are committed to improving the professional status of the sanitarian and federal and local regulatory agencies which provide educational materials.

It is still possible to find managements which believe that good sanitation is not absolutely necessary in their food plants. In many instances, such reasoning is easily justified upon recognizing that sanitation is a long term affair, and that companies operating on such policies frequently come into existence and vanish into oblivion long before the benefits of good sanitation can be realized.

In some instances, where there is likelihood that food company will carry on to become an old established firm, some managements have been able to justify sanitation programs as being typical food industry investments which (a) cost a lot of money, (b) never pay a dividend and (c) can’t be sold when the management tires of the concept.

In the instances where food companies have installed sophisticated sanitation programs, some managements have identified the following advantages. First, shareholders, visitors and inspectors are impressed with the quality control laboratory filled with petri dishes, Quebec counters, glassware, bottles and busy microbiologists counting bacteria. In addition, hundreds of feet of hoses, drums of quats and hypochlorites, hand-dip stations .... strategically placed throughout the plant confirm the visitors’ belief that the plant is operated by a sanitation-conscious management. Finally, some food company managements have discovered that sophisticated sanitation programs do no harm, and in fact can effect corporation improvements, such as extended shelf-life and increased sales.

MANAGEMENT – A SANITATION PROBLEM

By now the first and most important sanitation problem has been identified — management. It is of utmost importance that management be educated as to the real value of a sanitation program — what it can or cannot accomplish. Without the total commitment of management, the effectiveness of a sanitation program is reduced.

Several benefits have been attributed to good sanitation, the fundamental one being protection from disease and infection. Economic benefits including improved employee morale through congenial surroundings and thus improved productivity, extended product shelf-life and extended best-before-date, reduced product returns due to premature off-condition, reduced spoilage, reduced water usage and energy consumption, reduced sewage load and subsequently reduced municipal surcharge, increased product sales and improved competitive position in the retail market have been correlated with sanitation efficacy.

Although there is some justification for claiming all of these benefits, the primary motivating force for management to promote sanitation is its direct impact on corporate planning, corporate marketing, and corporate relationship with the law. Management’s commitment is to corporate security, its entity and financial security. Simply stated, “If there is no profit there is no existence.” Corporate security correlates directly with market share, and market share is directly related to product acceptability, thus the motivating force for sanitation is identified.

As previously noted, sanitation programs impact directly on the corporate/regulatory interface. Both the U.S. Food and Drug Administration in sections 402 (a) (3) and 402 a(4) of the Food Act, and the Canadian Health Protection Branch under sections 4, and 7 of the Food and Drugs Act have the mandate to prohibit the production, preservation, packaging, storage or sale of any food under unsanitary conditions.

A thorough sanitation program will reduce the potential for product seizure, product recall, food poisoning outbreaks, and thus minimize the associated damaging publicity.
In Canada an additional motivation-factor for sanitation is the alpha-numeric durable shelf-life regulation. The extension of product shelf-life through sanitation is directly reflected in the extension of the Best-Before-Date. Extended durable shelf-life permits not only an extended sell-through period which is necessary for national distribution from centralized plants, but also extended consumer shelf-life.

**THE SANITARIAN — A SANITATION PROBLEM**

The second sanitation problem can be the sanitarian if he is not educated in the basics of sanitation. The sanitarian must be a serious, concerned professional who understands clearly the corporate policy, and his role in the organization. The sanitarian must have the full support of management and an effective direct communication mechanism with management. The sanitarian's responsibility is directly to management, employees, regulatory agencies and the consumers. In addition the sanitarian must have access to the laboratory, a vital tool for the quantitative, precise and objective assessment of ongoing sanitary practices.

To effectively fulfill the requirements of a sanitarian, he must be educated in microbiology, since bacterial counts can reflect the sanitary history of the food process--incoming raw materials, process failure, storage and packaging conditions. To have an effective sanitation program the sanitarian must be educated in specific surface conditions such as hardness, porosity, resistance to oxidation and corrosion and ease of sanitation for wood, galvanized metals, black metals, stainless steel, plastics, ceramics, concrete, paint; soil types and characteristics such as inorganic, organic, water-soluble, base-soluble, acid-soluble; plant layout and construction and equipment design.

The sanitarian must be educated in the safety and efficacy of detergents, functions of detergent auxiliaries and sanitizers and the need for protective equipment. Through comprehensive understanding of the nature of cleaners and sanitizers (a) employee injury can be prevented, (b) cleaner/sanitizer waste can be reduced and (c) cleaning efficiency can be optimized. Through proper cleaning procedures water consumption often can be reduced, sewage load may be reduced and labor intensity can be optimized. Recognizing that disease-producing microorganisms can be transmitted throughout a food plant by rodents, insects, flies and birds, the sanitarian must be educated in their control and eradication.

All of this information must be conveyed to the sanitation crew in a form that is easily understood. Sanitation crews tend to have rapid turn-over, thus an effective sanitation program must provide a simple, easily accessible, visual instruction manual covering briefly each piece of equipment or area to be cleaned, choice of cleaner, mixing instructions and method of application. There must be a continuing ongoing educational program of awareness provided through posters, management and the sanitarian. Management must endorse and support the work of the sanitation crew and demonstrate to these employees the importance of cleaning and sanitation to the integrity of the company.

**THE EMPLOYEE — A SANITATION PROBLEM**

The third potential sanitation problem is the employee. Again education of employees must be simple and continuing - posters are an effective vehicle. The sanitation message must be consistent and followed by management, supervisors and inspectors. There must be no exceptions to the use of hand dips, hairnets, white coats, etc.

As a result of extensive education of these three industrial sectors the application of the sanitation program will optimize human resources and available technology, in attaining quality throughout the plant -- in raw material, in process and in finished product.

The basic sanitation principles include an adequate sanitation plan, operational methods and personal practices, pest control, good cleaning practice and preventive maintenance. The application of these principles will impact on the operational appearance, practices and performance, and will reflect directly on the corporate security.

Many products have been implicated in food poisoning outbreaks which have been caused not by negligence during production or processing, but by poor handling practices in homes or in restaurants. The education of the consumer and the food handlers is a priority to complete the sanitation cycle. Having identified the four fundamental sources of sanitation problems, vehicles of education must be identified.

**EDUCATION**

Trade associations are one effective means of industrial education. As an example, the Meat Packers Council of Canada prepares and distributes several sanitation-oriented documents. As part of industry response to the regulatory proposals by the Canadian Health Protection Branch regarding microbiological standards vs. guidelines, the Council in 1978 prepared a Statement of Good Manufacturing Practices for Ground Beef and Related Products. The Code of Practice contains 21 pages color-coded according to general personnel hygiene, cleaning procedures, economic benefits and technology evaluation.

In addition to other topics, this Statement of Good Manufacturing Practices for Ground Beef and Related Products deals with raw materials, tempering, final product condition, frozen storage, retail display and cleaning procedures.

Recently *Salmonella* serotypes which have been associated with human illness have been traced back through the poultry chain and ultimately isolated from feedstuffs. In response to this issue, the Meat Packers Council prepared and distributed a Statement of...
NEED FOR EDUCATION 403

Awareness for the Reduction of Salmonella Contamination in Rendered Meats. The Statement lists over 45 potential sources of Salmonella contamination, including air-borne contamination, water supplies, personnel, pests, raw materials, plant construction, process failure, cleaning procedures and transport vehicles.

The Council also distributes a monthly technology bulletin dealing with research and quality control. In past issues, topics such as refrigeration and incidence of sticky beef; microbiological implications of slaughter, dressing and processing; retail shelf-life of prepackaged beef; modified atmospheres; product contamination and industrial detergency have been reported. In addition to a technical library/library loans program which is heavily oriented to processing sanitary and environmental aspects, the Council also distributes temperature guides and sanitation film strips.

The Meat Packers Council of Canada cosponsors with the University of Guelph, a correspondence course “Plant Sanitation for the Meat Packing Industry.” This correspondence course covers the significance of sanitation as well as microorganisms, personnel hygiene, construction, equipment, cleaning materials, cleaning procedures, pest control and water disposal.

The Council also sponsors, in conjunction with the Canadian Food Processors Association and St. Clair College in Windsor, Ontario, a course on retort-canning operations, closure evaluation and sanitation.

Professional associations such as the International Association of Milk, Food and Environmental Sanitarians and its Affiliates are committed to improve the professional status of the sanitarian and to increase food industry awareness of the need for sanitation. Thus professional associations have an extremely important role to play in sanitation education.

Establishment of Industry/Government committees in Canada has been a particularly successful method of education for not only industry but also government. These committees provide a forum of mutual information exchange which assesses regulatory options (e.g. regulations vs. guidelines), status of technology, research priorities, ongoing research and identifies centers of expertise.

In addition to Industry/Government committees on human nutrition and plant protein, there are several committees directly involved with sanitation and food protection, including the Coordinating Committee on the Microbiological Quality of Ground Beef, Poultry Industry -- Agriculture Canada Salmonella Committee, Expert Committee on Meats, Expert Committee on Food Safety and Canada Committee on Foods.

Federal, provincial and municipal regulatory agencies in Canada have educational services which provide sanitation and food protection information to industry, schools and consumers. The Health Protection Branch of Canada distributes films, slides and cassettes dealing with food protection. In addition, the Health Protection Branch prepares consumer education dispatches on microbial food poisoning, poultry safety, botulism and home canning, health protection and food laws, kitchen care, food poisoning and food safety.

Finally, many companies have intensive, formal in-house training programs where the human resource has been identified as the key to food sanitation. These companies have detailed sanitation strategies based on their Quality Assurance needs which include (a) quantitative, precise, objective assessment; (b) accurate manpower requirement and designation; (c) simplicity and ease of communications and (d) effective management information system, including effective communication to non-technical persons. Companies with the in-house sanitation programs have understood the limitations of sanitation programmes, and thus have been able to optimize productivity and perfect the organizational effectiveness.

“Sanitation is a way of life. It is the quality of living that is expressed in the clean house, the clean farm, the clean business and industry, the clean neighborhood, the clean community. Being a way of life it must come from within the people; it is nourished by knowledge, and grows as an obligation and an ideal in human relations.” (From a poster credited to the National Association of Sanitarians).