

## SANITATION PROBLEMS IN UTILIZATION OF AMERICAN DAIRY PRODUCTS OVERSEAS<sup>1</sup>

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Dairy products of the United States have been shipped overseas in vast quantity, until the recent downturn in production. With lagging food production, in contrast to expanding population growth, the need for dairy products is greater than ever and will remain so in the foreseeable future. Under the impetus of market development and with slowly improving economies, the commercial demand has likewise grown spectacularly and this would continue if U. S. products were available for export.

Most U. S. products are mixed with and supplement local production. This implies responsibility and challenges. The adverse conditions which challenge overseas operators are water, archaic food laws, untrained personnel and consumer indifference or lack of understanding. Sanitation is a key factor in processing, packaging and marketing dairy products overseas.

In the early fifties a significant U. S. effort, commonly referred to as Point IV or the Marshall Plan, was made to help rebuild a war-scarred Europe. It was also in this period that truly massive quantities of U. S. food and fiber began to move overseas regularly as a newly emerging American aid pattern. Under both these efforts we learned as never before the bitter truth about all aspects of sanitation and we encountered many other technical challenges in food processing and distribution.

The permissive legislation for a continuation of these programs was Public Law 480. Its successor today, tailored and modified to meet new conditions, is referred to as the Freedom From Hunger legislation.

PL480 was responsible for a great range of activities which are underway today. Most of these programs have been beneficial to the U. S. Agricultural Community. It would be utterly futile to try and elaborate on more than a few. Therefore, I shall confine my comments to the ones relating to the subject assigned to me.

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### THE DSI PROGRAM

Dairy Society International, drawing on and applying the superior technical skills and expertise of U. S. industry in a combined industry/government effort, has worked to increase our export of dairy products. An automatic side effect as we have increased our marketing, is that to a large degree technology must accompany the product; and this has the additional benefit of teaching improved techniques overseas and, in the broadest sense, developing local economics.

Most of you know the enormity of the flow of American dairy products going overseas. Secretary Freeman last May noted that we have shipped truly staggering amounts — over 6 billion lbs. of nonfat dry milk, 1/4 billion lbs. of evaporated and condensed, 23 million lbs. of dry whole milk, 3/4 billion lbs. of cheese, and 1/4 billion lbs. of butteroil. As a part of these totals our *commercial* sales, until the present U. S. production drop downward, had risen from an obscure beginning in the mid-fifties to nearly \$300 million annually.

To a large extent American dairy products moving overseas are used to supplement local supplies. This assumes, of course, that there is a local dairy industry —and there is one, in various stages of development in almost every country. The only exception to this supplemental use is illustrated by the Japan school lunch project which features reconstituted U. S. non-fat dry milk for children; and a part of the Alliance For Progress effort initiated under President Kennedy which also features milk included in the school lunches, and this reaches a high percentage of children in Latin America.

Because our dairy products generally do get mixed with local products, we have a two-fold involvement and challenge:

1. We must expect to bear some responsibility for the consumer attitude toward dairy products. In this respect, no matter how high the quality of U. S. products when shipped from the U. S., this seldom is distinguishable when it reaches the consumer.

2. If U. S. commercial sales are to increase, a part of every overseas program must be devoted to up-

grading and increasing the dairy products and, in general, all food product in the market place. This applies both qualitatively and quantitatively.

This latter point has taken on new political, economic and even humanitarian overtones in recent weeks inasmuch as the U. S. has officially committed itself to augment help to friendly developing nations—those which show evidence of helping themselves—in order to reserve the alarming reality of lagging food production.

#### NEED FOR SANITATION EDUCATION

Our Point IV specialists who were assigned overseas were both appalled and frustrated by their inability to fully accomplish their assignments. And very often at the heart of their dilemma was failure to achieve responsive understanding on sanitation questions. As more U. S. personnel was dispatched overseas under various programs, as voluntary agencies such as CARE and Church World Service became operational and as the multilateral development training efforts got underway, principally by UNICEF and FAO, in almost every instance it became apparent that little progress would be made without first attacking the lack of understanding about sanitation.

There are particular problems for each segment of the industry involved. The producer of the products in the U. S. to avoid trouble must build to higher sanitation standards to meet the rigorous conditions of overseas transport and marketing practices. This applies to both the product itself and the packaging. The plant operator overseas, should it be a U. S. interest either alone or combined with local industry, will encounter unimaginable difficulties, principally stemming from lack of clear-cut food laws, governmental ineptitude, pilferage, and most of all the lack of trained personnel.

#### PROGRAMS FOR SUPPLYING TRAINED PERSONNEL

The technological training of necessary personnel is by far the most difficult problem of all. It stems from the inadequacies in the educational systems in the developing countries, and the inability of qualified students to attend institutions offering specialized training.

All agencies including UNICEF/FAO, the non-profit Foundations and many forward thinking governments, are giving priority attention to this bottleneck. Thousands of students are enrolled in institutions of higher learning both in the U. S. and in other advanced countries. The great majority are subsidized. All too often however, the student likes the life in the advanced country and is reluctant,

even conniving, about returning home where his skills are desperately needed. This stipulation must be clearly understood and applied to all before any student is sanctioned for study.

A stop-gap measure to speed up training are the short courses offered by FAO, Denmark and other countries. These are usually offered on a regional basis and the best qualified workers in plants are selected. DSI trained over 100 plant operators in Colombia and an immediate improvement was noted in the quality of milk. The curricula offered resemble the short courses offered by Land Grant Colleges in the U. S.

The approach to building the market must retreat to conditions fifty or more years ago and use simple uncomplicated systems and materials. Our market development experience has proven these facts beyond dispute. DSI undertook the role of dairy Cooperator with the Foreign Agricultural Service of USDA in 1956, another key provision of PL480. Our purpose in this program was the development of commercial markets for U. S. dairy products.

#### CONDITIONS ENCOUNTERED

Where information on a country's dairy industry was insufficient we sent qualified experts to seek out the pertinent facts on the status of dairy development. Some fifty of these intensive studies have been made as preludes to undertaking some form of market development work by DSI and the local industry. I do not know of one such survey which has not underscored the need to upgrade sanitation practices. Most often the lack of even elemental sanitation is noted at the farm level where it is not uncommon to find wet-hand milking, no prewashing of cows, straining milk through filthy discarded cloth and little attention, if any, given to farm cooling.

I want to make clear here that any countries mentioned in the following discussion are chosen for no other purpose than to illustrate conditions of a general nature in the early stages of development. And I am encouraged to report that in almost every case great improvements would be noted with these same problems if one were to observe the practices after our technical programs were underway a while.

Early in Israel's monumental development Bernard K. Schuman, Dairy Sanitation Consultant, in his summary report dated June 10, 1958, made these comments:

"The problem in the production of good quality raw milk in Israel bears serious implication. It is primarily one of economics. Nearly fifteen percent of the milk produced for shipment to dairy plants is lost because the quality is such that it is not acceptable for processing or that it will not stand up under temperatures required for pasteurizing or sterilizing. This simple fact is the major reason for an all

out effort to improve the quality of milk produced on the farms of Israel.

"Animal housing ranges from fair to excellent. Poorly cleaned stables and lounging areas with heavy fly infestation are common. Damp, manure sodden yards and pens and areas adjacent to stables are sources of flank and udder crusting, resulting in unsanitary milking practices. Animals are not clipped, or infrequently clipped, making it nearly impossible to keep manure and other soils from being introduced into milk at milking time. Heavy fly infestations on most dairy farms were evidently due to the traditional practice of banking or piling manure in huge packs. Often cattle would have serious eye infections spread throughout the herd by such swarms of flies.

"Most of the hand milking equipment (pails, strainers, and transport cans) are of poor sanitary construction, with beaded and open seams and fine wire screen strainers. Many are dented and rusted beyond the point of being satisfactorily cleaned and sanitized. Single service cotton or flannel strainer pads are not yet available at costs favoring their use on small farms.

"Although this is not a direct problem in the production of high quality of raw milk, it is most certainly a contributing factor. The pH and mineral and salt contents of water vary greatly from one area to another. The effectiveness and performance of dairy cleaners and sanitizers are related directly to the kind of water they are mixed with.

"At present the Israeli Dairy Farmer is not trained in milk production methods as he must be. His responsibilities have not been defined for him. Given training, good tools (utensils, cans, cleaners and sanitizers) and the understanding that he must meet his responsibility of producing satisfactory quality raw milk, the Israeli will do much to make dairy farming a more successful economic venture."

The same observations might equally apply to another 70 or 80 countries, even today, although I emphasize that encouraging progress is underway.

#### VALUE OF TRADE FAIR DEMONSTRATIONS

Another technique to stimulate improvement which DSI has successfully employed is the Trade Fair. In approximately half of the forty-five in which we have participated, on every continent except Australia, we have installed on the floor of the exhibit a fully operational model dairy plant. The majority have featured the recombining of U. S. produced ingredients and the manufacture, before the eyes of the startled public, of everything from regular and chocolate milk to multi-flavored ice creams. In the production cycle we have demonstrated proper pasteurization, homogenization, cooling, packaging (both glass and paper) and storage.

The convincibility of our demonstrations has been overwhelmingly proven because in many cases, for example, in Yugoslavia, Japan, India, Egypt, Spain, W. Germany and Colombia, components of or all the processing equipment have been purchased and remain in the country to increase the availability of properly processed milk products.

Setting up and operating such Fair demonstrations often is a logistical nightmare. The training of the help in the simplest sanitation procedures often takes days and unending supervision throughout the Show.

Our files are full of testimonials regarding the beneficial effects of these Trade Fair demonstrations. Conservatively, several thousand career dairymen have been reached with the fundamental lessons of modern sanitation procedures as well as proper engineering to achieve processing efficiency and ease of cleanup. Total public attendance count at the Fairs where dairy products have been featured has exceeded 100 million and a large percentage of these potential customers have tasted products recombined from our U. S. ingredients. Their most frequent request is "Why can't we buy products like these daily?" Our followup job after this demonstrating of the latent demand is to inspire local industry to improve their procedures and thus increase their marketing.

#### RESPONSIBILITIES OF RESIDENT DSI DIRECTORS

By far the most challenging test comes in market development when a resident DSI director is assigned on a long term basis—three or more years—in a foreign country. To date, the Society has conducted such programs in Colombia, Chile, Lebanon and Thailand. Obviously, such countries are chosen because they offer excellent prospects for relatively rapid commercial development of the dairy industry with the subsequent promise of a significant rise in per capita consumption.

The first hurdle is to create genuine and sustaining interest on the part of all affected people, for without it your best efforts may be doomed to utter failure. Primarily, the director must reach the government officials—industry, public health, transportation, to name a few—and gain their active support. The competitive companies in the market, once they understand the probability of increased business for themselves will frequently cooperate both with money and services. Once the processing plants are on stream, producing quality products, the last obvious target is the consumer.

Let's look at each of these steps in more depth, based on our work in Thailand. Dorothy McCann directed DSI's market development program there for six years. When she began, no semblance of a modern dairy producer or processing plant existed, although a U. S. company was just completing a modern fully-integrated facility. The main fare of dairy products was imported sweetened condensed plus varieties of flavored water ice, unworthy of the name of ice cream.

Mrs. McCann's reports candidly appraise the difficulties. She accurately notes that in most developing tropical countries there is almost total ignorance of the need for sanitary food standards or practices as we understand them. There is no screening and no refrigeration in the average home, and ants, roaches, rats are accepted as necessary evils. Food, consequently, is bought for only one meal at a time and consumed in the same manner. Charcoal is usually the only fuel and it is costly enough so that its use is limited to cooking. Certainly it is not used to heat water for washing or sterilizing dishes or utensils. True, wherever possible, utensils are dried in the sun, but uncovered they are not immune from other contamination.

Only the better educated, more sophisticated realize that there is a relationship between cleanliness and health. The people may be very clean about their persons and not recognize the importance of cleanliness in other ways. Water, for example, is thought to be a cleanser even if the same river or canal is used for swimming and bath, brushing one's teeth, cleaning vegetables, eviscerating chickens, or even a disposal for raw sewage.

The average citizen is accustomed to buying the scarce available milk only in bulk. He frequently sees and smells the filthy city stables—or milk being taken to the plant in cans without tops but rather stuffed with hay to keep the milk from spilling out. He knows that as the peddler's milk supply gets lower in the can, he dilutes it with water from the nearest source. He is accustomed to boiling such milk for his children but he never drinks it himself.

#### UTILIZATION OF HEALTH PERSONNEL

In these countries there are no effective sanitary regulations and the ones in use have been borrowed from some advanced country twenty or thirty years ago. In any case, they usually do not have sufficient funds to have inspectors, if, indeed trained inspectors would be available.

It is important to know the health department people, not only at the top levels, but even more importantly those people who are responsible for the day-to-day activities. Persuading them to visit the plant is vital because they observe the attention to pure, tested and controlled water supplies, cleanliness and health examinations of employees, daily freshly laundered uniforms, required showers and other hygienic regulations—all this in addition to the closely supervised production, processing, and the laboratory controls, daily in-place cleaning and sanitizing of all equipment, etc.

A commercial milk plant beginning operations in a country like this has a long and difficult task in training people to understand the need for following instructions that seem like wasted energy to them. Often they don't want to wear uniforms. The bottle inspector is careless, and rusty wires, glass, or just mud or bugs may be left in the bottles. The person in the laboratory relaxes and doesn't check bacterial counts or acidity as he should. The delivery man doesn't put enough ice/salt on the milk and a whole lot is soured but he delivers it anyway because he doesn't want to bring it back. Between the refrigerated ice cream truck and the store, with outside temperatures near 110°F, the ice cream softens to a degree. If too many boxes are carelessly pushed into a cabinet, the lids become dislodged and the ice cream is not only ruined in appearance but contaminated.

All kinds of perils and economic losses occur when the store operator, until taught differently, pulls the electrical plug on the ice cream cabinet each night because "it saves electricity".

Should there be an epidemic of cholera, as occurred once, the newspaper headlines might read: "If you want to be dead, eat ice cream or drink milk." Such wholesale condemnation can undo the work of years in building an understanding of the need for milk products for better health, growth, longevity, etc. Happily, in this case, the doctor in charge of the national health department responded at once to a call for help, and issued a statement endorsing the products of the milk plant as being the only safe ones to consume, and condemning those of the itinerant vendors as being unsafe, and dangerous. As a result, the scare headlines were a help but it might have gone the other way.

If there are competitors in a country, it is well to get them together to try to work with them in developing proper sanitary and quality standards. One must show them how to capitalize on such a program by enlisting the support of the health department and publicizing improvements through the schools, teachers, doctors, nurses, and all available media. Education will awaken individuals and governments to the importance of sanitary standards for the individual and every food industry.

#### ULTIMATE VALUE OF THE PROGRAM

To demonstrate how effectively these needs were met in Thailand, here is a brief synopsis of DSI's terminal report:

"In 1956, pasteurized milk and milk products were unknown in Thailand. By the end of 1963, there were numerous school, home, and commercial delivery routes in Bangkok, and the commercial routes stretched out in a radius of

90 miles. Not only was there a fast growing acceptance of whole (65%) and flavored milks, but there were 15 flavors of ice cream or sherbet, cottage cheese, sour cream, whipped cream, yogurt, buttermilk, and novelties such as drumsticks. It was estimated that at least 60% of the regular customers were local citizens.

"To accomplish this, an educational, promotional, and sampling program was undertaken in schools (nursery schools through universities)—with government agencies and offices from the ministries down; all departments of defense in the Bangkok area; all commercial and industrial companies; clubs, associations. Publications were prepared based on outstanding authoritative nutrition data. These were distributed throughout the schools and offices, etc., supplemented with an illustrated cartoon flip chart talk. Never before had this been done. The nutrition publications were highly valued. Store demonstrations were held, and sampling was undertaken at charity, school, and sporting events, including athletes training for international meets. In the last year, as sampling was discontinued, funds were directed to an advertising program on TV and cinemas, extensive newspaper publicity, etc."

As a consequence of the milk plant established in Bangkok, new jobs have been created and new skills taught to hundreds of Thais. The local and national economy have been boosted greatly by the use of many Thai agricultural and industrial products, patronizing of service organizations, and paying of numerous taxes. Moreover, the growing awareness of U. S. milk products and the importance of milk in the daily diet has stimulated considerable competition

in a country where just a few years ago it was said "Thais won't drink milk".

As a part of the market development, technical guidance is a full time and continuing job. New plateaus require new concepts. This is illustrated by the DSI educational brochure on butter. This is technical in nature reminding buyer and seller that butter must be bought by specifications, if quality is to be guaranteed. It goes on to describe safe shipping and packaging materials, proper storage temperatures both during transit, at the wholesaler's storage and in the retailer's case. If a foreign importer would follow these suggestions to the letter, it is highly unlikely that quality problems would arise and probable that a growing trade would develop due to consumer satisfaction and confidence.

We feel so strongly about the value of this type of guide for buyers, based upon comments and approvals from around the world, that we have underway the development of similar ones on nonfat dry milk and toning. At a later stage we may do others on cheese and specialty dairy products.

As I have suggested, sanitation is linked to every facet of moving, exporting and using our dairy products overseas. Exports will improve in direct ratio to the solution of sanitation problems. We have underway sound programs toward this end and I am confident that our future holds promise.

### THE SANITARIAN\*

There are times when I get weary of this day in--day out grind.  
There are times when I'm disgusted and think I'll lose my mind.  
Then there are time when money's scarce and those times  
become more frequent.  
My account's overdrawn, my savings shrink and my bills  
are all delinquent.

Now I've a little girl named Tru, she's about the age of eight.  
She has a lot of playmates, and in my yard they congregate.  
The other day I overheard quite a lengthy conversation,  
On the merits of different fathers, primarily occupation.

There were bankers, welders, airplane drivers, doctors, lawyers,  
deepsea divers.  
Then silence fell as True began, "MY daddy is a Sanitarian."  
The other girls grew open eyed and silent as a cat.  
Then Sandra spoke the mind of all. "Just what in the  
world is that?"

"Well, without my dad you couldn't eat a solitary bite.  
Unless you took the chance of being very sick all night.  
You couldn't drink a glass of milk, or eat a piece of pie.  
'Cause if you did you might get sick, and maybe even die."

"And you couldn't go in swimming, who'd see if the water  
was nice?  
You couldn't have an ice cream cone, or eat a piece of ice.  
The streets and alleys would be a mess with garbage

everywhere.  
And things would be real smelly if my daddy wasn't there."

"Course I might be exaggerating, Things might not be that  
bad  
But they certainly could happen if it weren't for men like  
dad.  
Oh there's lot and lots of other things my daddy has to do.  
But it takes too long to tell them so I've only named a few."

I look down at my shirt cuffs.  
They were frayed just like my collar.  
I looked around at the furniture.  
It was worthless as a dollar.  
Our car out in the driveway—it's completely second-hand.  
But I have my badge of honor. I'm a Sanitarian.

For if our kids live longer in this world that we safe-guard,  
That's worth more than money and will be enough reward.

So now I stand up straighter with my shoulders squared away.  
My step is sure, my eyes are bright as I go to face the day.  
And if you really care to—step up and shake the hand  
Of a guy that's really proud to be a SANITARIAN.

ANON

\*From the Maryland Association of Sanitarians Newsletter.