FROM WASHINGTON

U.S. Trade Representative delays oilseed decision

Ruling there are indications European Economic Community (EEC) subsidies of oilseed production and processing have adversely affected U.S. trade, the U.S. Trade Representative's (USTR) office, however, announced in July it would not take action on a Section 301 trade complaint against the EEC at that time. A panel has been established under the General Agreement on Tariffs and Trade (GATT) to consider the issue.

The American Soybean Association protested in December 1987 that EEC oilseed and protein crop subsidies were unfair to U.S. soybean exporters. Under provisions of the 1988 Omnibus Trade Act, the U.S. trade representative was required to evaluate that complaint within 18 months of accepting the petition.

The U.S. trade representative's office said it would delay considering any retaliatory measures against the EEC until Jan. 31, 1990, or before then if progress is halted in relation to the dispute. Details: *Federal Register,* July 11, 1989, pp. 29123-29124.

FDA warns against hair restorer claims

The U.S. Food and Drug Administration (FDA) has announced it will ban the sale of any nonprescription hair cream, lotion or other external product claiming to grow hair or prevent baldness. FDA announced in the July 7, 1989, issue of the *Federal Register* that it will ban the products beginning Jan. 8, 1990.

FDA also said there is no evidence that other products taken by mouth—such as vitamins or food supplements—retard baldness or grow hair. FDA warned that these products would be banned on a case-by-case basis if companies continue to make such claims. Details: *Federal Register,* July 7, 1989, pp. 28772-28777.

FDA will review data on fat substitute

The U.S. Food and Drug Administration (FDA) will review a petition filed by Kraft General Foods (KGF) for generally recognized as safe (GRAS) status for a protein-based ingredient that KGF says can be used to reduce the amount of fat in foods.

KGF said the ingredient is made by a proprietary process, combining ingredients that have been in use in a wide variety of foods for many years. The ingredient, which has not been named, is made from milk and egg-white proteins and "contributes a creamy, fat-like texture to foods," KGF said, noting that it will enable the company to develop products substantially lower in fat, cholesterol and calories.

KGF's petition covers use of the ingredient in frozen desserts, but the company said it also functions well in a wide variety of products.

SAFETY

Lab safety: then and now

Today's laboratory safety procedures and equipment contrast sharply with those of past years, as outlined in the following article by Nadine Drennan of San Labs, 405 8th Ave. S.E., Cedar Rapids, Iowa. The article was prepared at the request of Harold J. Sandvig, JAOCS *Associate Editor for Safety and Environmental Issues.*

Eight bronze cannons, each five feet long and with a muzzle eight inches in diameter, were mounted at the Quaker Oats exhibit at the 1904 World's Fair in St. Louis. The muzzles were loaded with rice to the sound of music and fanfare. Then they were rotated for 40 minutes in gas-fired ovens. The guns were removed from the heat chambers and were wheeled rapidly on a narrow-gauge railroad track to a huge cage 40 feet wide and two stories high. With the command "Fire," the artillery spewed fluffy puffs of rice. A new product—Puffed Rice—was introduced.

The research for the event was done in a secret laboratory built and equipped in a grain bin in Chicago. At the critical moment of each puffing experiment, the chemist's life was actually in danger. "It's a wonder that he didn't blow himself up," according to John Stuart, one of the founders of the Quaker Oats Company.

Now, fast forward to the dawn of the Occupational Safety and Health Administration (OSHA), federal and state "Right-To-Know" regulations, hazardous communications and corporate safety programs. Safety in the chemical laboratory has come a long way!

Wayne Montgomery, H.H. Schopmeyer and Philip Devoe collectively have 140 years of experience working in grain plant laboratories and their chemical careers cover the period from 1930 to 1989. Through the decades, these chemists have worked in laboratories which supported soybean, oat and corn processing. Schopmeyer, who has worked in the field of chemistry for 58 years, said, "Workers had a lot less regard

for safety in earlier years. Most people were untrained. They were just taught to dodge the pieces."

Thankfully, there have been changes in the attitude toward laboratory safety over the years. Laboratory safety programs, where they existed, were influenced strongly by the Occupational Safety and Health Act of 1970 and more recently, the Right-To-Know laws. The following "then and now" comparisons of laboratory safety contrast early grain and oilseed processing laboratories to the labs of today; they are based on interviews with Montgomery, Schopmeyer and Devoe.

Academic training

THEN: Almost no training on laboratory safety was provided at universities and colleges. Schopmeyer remembers one of his professors telling students about the hazard of putting carbon in the desk because it could catch on fire. No other safety information was given in his chemistry classes.

NOW: In colleges and universities today, there are programs on safety for laboratory assistants. Chemical hazards are discussed before students even begin experiments. Wanda Wehner, who teaches chemistry at the University of Northern Iowa, said, "I think we are much more safety-conscious today than when we were students. Benzene, which had been used routinely for extractions, is now entirely eliminated from the classroom."

Chemical safety

THEN: Almost no information was available on the safety of chemicals. The dangerous characteristics of certain chemicals were passed on by word of mouth. Many chemicals such as asbestos, carbon tetrachloride and benzene—now known to be carcinogens—were used liberally and without caution.

NOW: The federal and state Right-To-Know laws require that all employees in laboratories have access to material safety data sheets for each hazardous chemical they use. These sheets provide use and handling precautions, including toxicity. Efforts are made to eliminate all carcinogenic chemicals from the laboratory. If hazardous chemicals are used, hoods and protective equipment are required.

Special training also is required for laboratory personnel. Right-To-Know laws state, "Employers shall provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new hazard is introduced into their work area." Regular safety programs on a variety of topics are standard in many grain and oilseed laboratories.

Mouth and eye safety

THEN: All chemicals were pipetted by mouth in early laboratories. These included concentrated acids and bases and organics such as chloroform and ethers. Although goggles were available, very few chemists used them.

NOW: The policy in our laboratory is to never

pipette chemicals by mouth; pipette bulbs or aids are used. Safety glasses with side shields are required in many laboratories. Face shields are available when working with strong acids and bases.

Protective equipment
THEN: There were no safety showers, fire blankets or eyewashes in industrial laboratories of the past. Occasionally there was a safety shower in college and university laboratories, although usually no other safety equipment was available. Laboratory safety equipment did not appear in laboratories until the 1950s, and then, in part, a result of insurance company recommendations.

NOW: Today, safety showers and eyewashes are standard equipment in the laboratory. Many laboratories regularly check their safety equipment, including the showers, eyewashes, emergency lighting and alarm systems to see that they are functioning properly. Employees are trained to know the location of safety equipment and how to use it.

Disposal of hazardous chemicals is regulated

Fire safety
THEN: In the early laboratories, it was not considered necessary to discuss fire hazards with laboratory employees. Occasionally there were fire extinguishers available in the lab, although many fires occurred in the mill laboratories.

NOW: Since there always is the potential danger of fire, fire extinguishers are found in all laboratories. They are inspected regularly and refilled as required. Most laboratories have regular fire drills and train employees to use several types of extinguishers. Local fire departments will train laboratory personnel to use different extinguishers by igniting oil fires under controlled conditions.

Ventilation
THEN: There were a few ventilation hoods, often homemade. "When I started working in 1930, we had varnished oak hoods with noisy fans," Montgomery said. Many of these hoods also had wooden ducts which absorbed chemical fumes.

NOW: Most modern laboratories have a number of hoods. The face velocity of the hoods is checked regularly to determine if they are drawing the correct volume of air. Work with hazardous chemicals is confined to the laboratory hoods.

Chemical disposal
THEN: Chemicals generally were poured down the drain for disposal. Typically, chemicals were put in dumps and poured on the soil. No special care was taken in disposing of chemicals.

NOW: Disposal of hazardous chemicals today is regulated and of great concern in the laboratory. Waste is collected and disposed of, as mandated by law. Some laboratories reclaim solvents and chemicals to eliminate waste disposal.

Glassware
THEN: Some Pyrex glassware was available in the early laboratories, but many tests were done with hard glass. These included heating and evaporating chemical solutions. Glassware was not very durable.

NOW: Pyrex glassware is used in laboratories and many laboratories have the policy of "firepolish or throw away." Separate containers are used for glass disposal and this action prevents injuries from broken glass.

Chemical storage
THEN: Acids, bases and organics were stored under the laboratory bench. When storage containers for chemicals were organized, they often were arranged in alphabetical order of the chemicals' names. Special cupboards for solvents did not appear until many years later.

NOW: Compatible chemicals are stored together and reactive ones are stored apart; they never are arranged alphabetically. Solvents are stored in flammable cupboards. Gas cylinders are chained in place.

Chemical spills
THEN: Chemical spills often were simply just wiped up. Acid or base spills might be neutralized and solvent spills often just evaporated.

NOW: Spill kits containing neutralizing material, goggles, rubber gloves and a dust pan, sponge and plastic bag for disposal are available from chemical supply houses. Many laboratories have written spill control procedures as part of their safety program.

Hearing protection
THEN: No noise monitoring was done and hearing protection was not provided. It was not uncommon to have hearing loss from exposure to high noise levels in the laboratory.

NOW: The noise level in the laboratory is monitored and hearing protection is required in areas above 85 decibels. Disposable hearing protection is available in the lab. In some locations, hearing tests are provided at regular intervals.

Medical treatment
THEN: In the past, it was not unusual to have a plant doctor, and sometimes there also was a nurse in larger processing plants. However, the medical personnel also had limited knowledge of the hazards of chemicals. Devoe recalled an incident in which one of the laboratory technicians cut her finger. After visiting the plant nurse, the technician developed a

thick rash; it kept getting worse. Devoe investigated and found the nurse was washing the zinc oxide adhesive off the injured employee's finger with carbon tetrachloride. When the treatment was eliminated, the rash disappeared.

NOW: First-aid kits are available in the laboratory. Very few processing plants have a nurse on the premises, but it is not uncommon for laboratory personnel to be trained in first aid. The American Red Cross provides first-aid training and more advance courses such as first-responder training are readily available at area vocational-techs, hospitals or from safety and health training specialists.

Surprisingly, there weren't any serious accidents, other than cuts and burns, in their labs during the 60 years that Montgomery, Devoe and Schopmeyer worked there but perhaps that was because they were concerned and read technical papers and journals. They took the initiative and started safety training to laboratory personnel. "When I read something in a journal that applied to me I did something about it," Devoe said.

In the 30 years that I have worked in chemical laboratories, I have seen many positive attitude changes toward chemical safety. Most of these changes have occurred in the last decade. As people become more interested in controlling their working environment, interest in safety has increased. Laboratory safety has become an important element of laboratory operation. Safety programs are not restricted to the plant operation; they are equally essential for the prevention of harm to lab personnel and loss of property.

Creating and maintaining a good laboratory safety program requires commitment from every individual, and it is absolutely essential that management supports the program. Some important aspects of a good program are:

- Preventing accidents by promoting a safety environment
- Reducing loss by dealing effectively with accidents which occur
- Providing employees with safety information and education
- Ensuring that safety procedures are followed
- Evaluating safety practices and housekeeping regularly.

To paraphrase research chemist John Keenan Taylor, "Safety is more than a program; it is a philosophy of life. As a program that is mechanically followed, safety is doomed to failure. As a philosophy, there is a chance for success. When it is approached both as a program and a philosophy, the chances for having a safe laboratory environment are excellent."

A laboratory safety program, which promotes the attitude and atmosphere of safety, benefits all personnel.

When comparing laboratory safety of the past with that of today, many advances and improvements are evident. Insurance companies encourage safety, the government mandates safety, but I prefer the wisdom espoused in recent Quaker Oats ads: laboratories are beginning to realize that managing safety is "the right thing to do."