Whey Products Being Sought To End Waste, Ease Disposal Problem

Whey — the liquid left from milk used in cheese-making — poses a big problem, because it is hard to dispose of without creating a nuisance. However, the nuisance aspect of whey is providing a strong incentive to develop uses that can turn waste into a raw material for new products, the U. S. Department of Agriculture reports.

Although whey may be described as the watery part of milk, which is separated from the curd in cheese-making, the amount of this material wasted each year in the United States actually contains well over 550 million pounds of solids — enough to fill a 5,500-car, 40-mile-long freight train.

It is these whey solids —perishable and highly active — that present difficult disposal problems, yet also offer a great promise as industrial raw material, according to USDA's Agricultural Research Service.

Cheese makers in the U S. produce more than a billion pounds of cheese each year. Since about nine pounds of liquid whey are left from each pound of cheese, that means some 12 billion pounds of whey are produced. It is estimated that almost nine billion pounds are wasted and present a disposal problem.

Feeds — mainly in dried form for poultry — account for the largest proportion of whey used today. Researchers are trying to develop practical biological methods of producing feed supplements from whey.

The principal solid in whey is lactose — the only sugar produced by the animal world. Less than four per cent of the nearly 500 million pounds of lactose in cheese whey produced each year is separated and refined.

USDA scientists point out that lactose cannot compete successfully as a sweetening agent with sucrose, dextrose, and other sugars. because it is less sweet and dissolves less easily. However, lactose-rich whey products, such as condensed or dried whey, are used in many foods, and in certain candies they give a smooth, creamy quality.

Many research-developed non-food uses also have been found for lactose — from silvering mirrors to making explosives — but researchers continue to seek additional industrial uses of this sugar of animal origin Of all methods of putting lactose to use in industry, fermentation is one of the most promising. Here, lactose, in its cheapest form can be converted into versatile chemicals that in turn can be transformed into a multitude of useful materials such as riboflavin (the essential vitamin B2) and butanol (an alcohol used widely as a solvent). The riboflavin content of whey can be increased by fermentation Other products of whey fermentation are vinegar, acetone, and ethyl alcohol.

Whey protein, a byproduct in the manufacture of lactose, also has high potential use. More than 80 million pounds of it are produced each year, but only a small portion of it is recovered. Researchers are looking for some cheaper method for separating the material in a commercially useful form.

Why is so little whey processed? A big reason is that much of it is produced at widely scattered points and the volume of many plants is relatively small. The 1,700-plus cheese plants in the U. S. vary considerably in size, but they average 12,500 pounds of whey per day per plant. Estimates indicate that 100,000 pounds of whey per day should be available to operate a whey evaporator economically, and that 250,000 pounds are needed for a spray drier. Economical haul for fluid whey is 40 to 50 miles. While for a 30-per cent concentrate it is about 150 miles.

USDA Researchers — including sanitation engineers and soils scienists — are working to set up guides for practical methods for disposing of whey from cheese plants where utilizaion of the fluid whey is not feasible.

A Federal-State cooperative study at the University of Wisconsin is underway on spray irrigation as a means of disposing of whey and other dairy-plant wastes. Researchers also want to know how dairy wastes affect soils and plants.

'Champ' to Be On Exhibit Here May 9 and 13

"The Champ," a giant life-like plastic Hereford steer mounted on a 34 foot trailer which is touring the country in the interest of the cattle industry will be on display in front of the Guernsey Sales Barn at 8 p m , May 9 and at the Lanc Stock Yards, May 13 all day.

The remarkable exhibit was produced by the Ralston Purina Co who dedicated it to a better understanding of the cattleman's busines of producing beef for our nation's people.

Visitors may walk through the giant steer's body and see realistic demonstrations of how feed and roughage are made into beef People enter the animal by airplane ramps that open out of the neck. Inside, they see how the vital organs of a steer's body work in the production of beef They also see demonstrations of how a cow makes milk and how an unborn calf develops from a 30-day to a nine-month embryo

So life-like is the exhibit that the body gives off the sound of the steer's breathing, and the rhythm of his heart-beat. It demonstrates how fat and lean meat are distributed through the body, and what part each essential feed ingredient plays.

The Champ has been featured in several national cattle shows and expositions, as well as on television and in nationally distributed magazines More than a quarter of a million persons go through the exhibit annually, and many times that number see it each year.

The Champ stands 12 feet tall, 19 feet long, and nearly eight feet wide. It weighs 4,000 pounds without the tractor and trailer. The exterior was built in 29 different parts, then assembled out-of-doors. Leading veterinarians and animal nutritionists assisted in making the interior displays.

Guernsey Cow Completes HIR Production Record

Peterborough, N. H. — A registered Guernsey cow, Willow Bends Mirthine, owned by John A. Breneman, Willow Street, has completed an official production record in the Herd Improvement Registry division of the American Guernsey Cattle Club.

This record was for 10,659 pounds of milk and 576 pounds of fat.

"Mirthine" was a eleven year-old, and was milked two times daily for 305 days while on test.

This official production record was supervised by Pennsylvania State University.

It's The Law

"It's the Law" with simple answers is offered by LANCASTER FARMING in cooperation with the Pennsylvania Bar Association. General interest questions are welcomed, and will be answered as soon as possible. Letters must be signed. Answer will not be published on a specified, requested day. Questions cannot be answered by mail, and LANCASTER FARMING will reject any inquiry which is not of general public interest. Address all inquiries to "It's the Law," LANCASTER FARMING Quarryville, Pa. (Fictitious initials will be used to protect the identity of the questions).

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Q Is it possible to get an annulment, after five years of marriage to a bigamist?

A. B.

A A bigamous marriage is void from its inception and it may be annulled at any time, so long as the "dual marriage" persists However, the bigamous marriage must be annulled by decree of court before the innocent party is free to remarry.

Q If I can find the hit-run driver who damaged my parked car, can the police legally refuse to investigate the case?—R. F.

A "Investigate" is a rather broad term, and it is difficult to believe that a police force would not attempt to learn the fact involved in a hit-and-run incident. However, after investigation, the police may rightfully be reluctant to prosecute a party because there may be insufficient evidence on which to found a charge.

Such reluctance by the police does not prevent the victim from swearing out an information against the person he believes to be guilty. This should not be done unless the affiant has reasonable grounds to believe the accused person is guilty, for if the charge is unreasonably brought, and the accused is later found not guilty, he may then be able to sue his accuser for damages for malicious presecution.