

Scientists Develop Process For Fortifying Milk With Iron

A new process now being tested by U.S. Department of Agriculture scientists may make it possible to fortify pasteurized whole milk with iron while avoiding the metallic flavor encountered in the past.

Chemists in USDA's Agricultural Research Service experimenting with several iron compounds have found that, by using a solution of ferric ammonium citrate or ferric choline citrate milk can be fortified at the rate of 10 milligrams of iron per quart without development of objectionable off-flavors over a storage period of 15 days the normal life of pasteurized milk.

The milk fortification studies were prompted by results of a USDA food consumption survey

showing that diets of individuals in a number of sex-age groups are most often low in iron and calcium. This is especially true of individuals in low-income brackets.

ARS food economists, using survey data listing the amount of whole fluid milk consumed during one day by individuals in the various sex-age categories estimated 10 milligrams per quart of milk as the amount of additional iron needed to bring these non-deficient diets within acceptable limits of the Recommended Dietary Allowances for iron established by the Food and Nutrition Board of the National Academy of Sciences National Research Council.

Some States permit the addition of iron to milk products that will be consumed in a few days, such as multivitamin and mineral milk, while nine States forbid any type of iron fortification of milk. Iron is also added to certain dietary products containing vegetable fat in place of milk fat, since little or no flavor hazard is involved in the presence of vegetable fat. However, it has not been possible to add this nutrient to whole, fluid milk without oxidative changes resulting in objectionable flavors in the milk and milk products.

In the current experiments, milk is first "deodorized" by vacuum treatment to remove feed flavors. The iron compound, which has been dissolved in water (one milliliter of solution contains 10 milligrams of iron), is added with thorough stirring either before or after pasteurization. All samples are then homogenized, cooled, and stored at 40 degrees F.

Samples of the iron-fortified milk using various pasteurization temperatures and different sequences for adding the iron — whether before or after pasteurization — are tested for the effect on flavor.

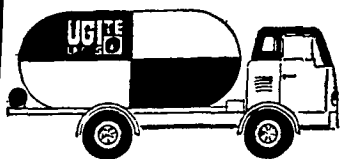
Taste panels to date have



PINNING RIBBONS at the 1968 Lancaster Pony Club Show. The 1969 show is scheduled to be held Saturday, May 3, at the John Gibson Farm at Drumore. Starting time is 9 a.m. and 100 horse and pony entries are expected. Anyone who would

like to enter may still do so by calling Mrs. Francis Hill, 786-3193. Also planned for June 16 to 22 is a Regional show where 200 children from Eastern Pennsylvania and New Jersey will compete. This show is also to be held at the Gibson headquarters.

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rated samples containing iron added before or after normal pasteurization (166 degrees F) to be about equal to controls in beverage acceptability. Samples containing iron added after heating to 188 degrees F. were also considered of beverage quality, but had a diminished acceptability when the iron was added before heating to this temperature. From a practical processing standpoint, the ARS scientists say it would be better to add the iron before pasteurization if the normal pasteurization temperature is used.

Quality (Continued from Page 1)

younger person will prefer ham cured the modern way.

Growers too often are inclined to believe they know what consumers want.

When consumers come back for a certain pack of potatoes — even though the potatoes cost twice as much as No. 1s — then the pack has quality.

Quality must be consistent. To sell, a product cannot be excellent for two weeks and then bad for two weeks.

Growers and producers should supply markets with the

quality the markets need. A 500-pound potato may win a prize at a fair but is of no value to a market.

A housewife is the final judge of quality. She will buy a product again and again if satisfied.

This diametric opinion was expressed by another conferee: a housewife does not know quality and does not know how to judge it.

Pennsylvania should try to correct variabilities in quality.

Regardless of a product's quality, a salesman has a lot to do in convincing a customer a product has quality.

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