ANIMAL DISEASES
W. D. POUNDEN, SECTION EDITOR


A group of 16 cattle which had been naturally experimentally infected with Br. abortus had high blood titers as well as viable Br. in their milk used to test the follow-up of treatment. Sodium sulfadiazine was intravenously alone and with bovine blood Mn. Colloidal manganese was given intravenously alone and with sulfadiazine. Sulfadiazine was given intravenously and orally along with streptomycin intramuscularly and intramammary. Aureomycin and streptomycin were given intravenously alone and with bovine blood Mn alone, the milk was free of Br. abortus 340 d. following treatment. It was not clear whether this effect was due to inhibition of the drugs were found in the milk of any of the treatments on the blood of the drugs were found in the milk of any of the treatments on the blood. E. W. Swanson


Four publications relating to Vibrio fetus, case of abortion and delayed conception in 2 cows are reviewed. Original work reported with many phases of the problem among 24 cows were included: (a) Cultural requirements of Vibrio fetus; (b) the blood serum agglutinates and its use in the diagnosis of vibriosis; (c) the vaginal mucous agglutination test and its use in the diagnosis of vibriosis; (d) long observations on the course and effect of vibriosis in 5 herds; (e) evidence that delayed conception is as, or more, important than abortion in analyzing the economic effect of the disease in a herd; (f) establishment of infected semen contact as 2 possible methods of transmission. Contact transmission is proposed as aly being from vulva to vulva; (g) vaccinal studies in which killed vaccines proved unsuccessful but live vaccines offered some hope for success; (h) reports that intraluminal infusions with streptomycin, terramycin or aureomycin are of considerable value in overcoming "apparent sterilization" associated with vibriosis.

H. L. Easterbrooks


A mastitis with serious mammary swelling and edema developed in a 253-cow dairy herd and the principal organism isolated was Cryptococcus neoformans. 106 of the cows had been infected in 1 or more quarters in 1 yr. The source of the infection could not be determined. The symptoms differed from usual acute mastitis by gradual increase in swelling over 1-2 wk. resulting in intense fullness of the glands and edema; the secretion became very viscid. There was a general lack of severe toxicity. Not all of the quarters which became infected developed acute symptoms. Treatment by udder infusion usually was ineffective in advanced cases because of the extreme swelling. Treatments with penicillin, streptomycin, aureomycin or bacitracin and combinations of these were ineffective in vitro as well as in vivo. Sulfa drugs, chloromycetin and terramycin likewise were not inhibitory to the growth of this yeast-like organism. Merthiolate caused a marked inhibition of growth and was used in some treatments with good results. An attempt was made to infect a calf by oral, subcutaneous and intravenous routes, all with negative results. The infection in 9 cows examined at slaughter was found to be only in the udder and supramammary lymph glands. The organism was easily killed by pasteurizing as well as storage at -10 ° F.

E. W. Swanson


Milk of 38 inflamed quarters of 20 cows was examined. Indication about inflammation was given by measuring the sediment, by the thymol and catalase tests and by bacteriological
examination for staphylococci. Then the quarters were treated with penicillin and the milk was again examined. In all 38 quarters the staphylococcal infection was eliminated by the penicillin treatment. Nevertheless, only one-third of the milks became normal, two-thirds continued to have excessive amounts of sediment and too high catalase numbers.

Udder inflammation (Eukerkatarrh) does not depend on infection alone. An injury of the udder tissues is a prime factor which can for itself cause changes in milk ("aseptic udder catarrh").

More important than the treatment of chronic udder inflammation is its prevention by careful milking so as not to cause any injury to the udder tissues. A. Fasler

CHEESE


A study was made of camembert cheeses which exhibited a color defect. The discoloration, evident when the cheeses were cut open, ranged from yellow, brown to red. All cheeses exhibiting the defect were cured in the same cave. The rooms in which the cheese were cured smelled strongly of ammonia.

Study of the types of nitrogen present in these cheeses revealed that amonia, nitrite and nitrate nitrogen were all significantly higher than normal. Careful study of possible mechanisms involved in the defect pointed logically to a Millon-type reaction involving tyrosine. The study did not reveal the origin of the nitrates. However, it is suggested that wash water or contamination of salt used in processing of the cheese might serve as sources. The following conditions were found essential to development of the defect: (a) progressive reduction of nitrates to nitrites, (b) strong hydrolysis of casein resulting in the liberation of tyrosine, (c) the formation of ammonia which favors conversion of tyrosine to the colored nitroso and azoic derivatives.

S. Patton


U. S. Patent 2,520,183 (J. Dairy Sci. Abs. 779, 1950) has been revised to eliminate the reference to holding milled curd in the vat. R. Whitaker

DAIRY BACTERIOLOGY


There was no appreciable increase in bacterial count of good quality pasteurized even after 120 hr. of storage under suitable refrigeration. Poor quality pasteurized showed marked deterioration under the time and shortage conditions. H. H. Wei


Colonies productivity of 6 plating media 1 synthetic culture medium have been compared. Productivities are identical on Difco's Trypticase Glucose Extract Agar, dehydrated no. B 2, BBL's Trypticase Glucose Extract Agar, dehydrated no. 183-B. It is hoped that further study may show that the currently approved culture media may be substituted for the 2 milk plating media described above.

The synthetic plating medium consisting 15 amino acids, 8 vitamins, 3 purine bases, pyrimidine bases, KH₂PO₄, MgSO₄, and agar has shown an average colony around 95% of that obtained on Difco's Trypticase Glucose Extract Agar, dehydrated no. B 2. H. H. Wei


The microscopic grading of milk by means of this syringe has been proposed as a means of eliminating errors in sampling milk by the ventialional 0.01-ml. pipette. The California Dept. of Agr. has adopted this procedure as being revolutionary in accuracy. H. H. Wei


Each starter culture used contained one of Streptococcus diacetilactis, Leuconostoc citrovorum and Betacoccus cremoris a. The bacteria in the culture either partly or completely responsible for the gas production were responsible for the normal texture (eye formation) of cheese made. The organisms also affected the body, flavor and aroma of cheese. They also helped govern the ripening. It was not determined if the bacteria had a part in the development of the characteristic flavor of Herrgard cheese. It was not shown that certain species of aroma bacteria were responsible to others. There appeared to be some partial difference. The organisms in a culture should possess a high biochemical activity such as growth power to ferment citric acid and break down protein. They must not lose their effectiveness on sub-culturing, during the chemolysis process or during ripening. G. H. Wei
Systematic testing of inhibitory substances
G. J. Silverman and F. V. Koshikow
Cornell Univ., Ithaca, N. Y. J. Milk & Technol., 15: 120-124, 137. May-June,

A disc assay method using Bacillus subtilis
and some organisms causing bovine mastitis F. S. Yancey and J. E. Faber, Jr.,

Inhibitory substances in milk after a short period of falling activity test showed promise for screening inhibitory substances in milk after a short period of incubation. H. H. Weiser

Action of alkyl-dimethyl-benzyl ammonium chloride on some organisms causing bovine mastitis H. F. Yancey and J. E. Faber, Jr.,

Prepared dilutions ranging from 1:1,280 to 1:10,000 of an aqueous solution of benzalkonium chloride were not effective in disinfecting the surfaces of stainless steel carriers which were contaminated with milk films containing Micrococcus pyogenes var. aureus 209, Escherichia coli, and Streptococcus agalactiae M2-31. Bollinger's rinse for 5 sec. was more effective in disinfecting the test organisms than a 10-min. rinse with 0.1% solution of benzalkonium chloride. Aqueous solutions of this compound may be satisfactorily as a disinfecting rinse for dairy equipment against mastitis organisms provided boiling water rinse is used in the final sanitizing the equipment. H. H. Weiser

DAIRY CHEMISTRY
H. H. Sommer, section editor


Investigators were of the belief that the presence of oily flavor in butter made from cream was related to an oxidation of the unsaturated acids contained either in the butterfat itself or in the milk.

A method for determining α,β-unsaturated carbonyl compounds in butter was devised. It was found that oily-flavored butter from ripened cream was related to the intensity of the off-flavor and α,β-unsaturated carbonyl compounds in oily-flavored butter with no oily flavor did not contain α,β-unsaturated carbonyl compounds. The content of α,β-unsaturated carbonyl compounds in oily-flavored butter was related to the intensity of the off-flavor. In butter that showed oily flavor after a, the intensity of the off-flavor and the content of α,β-unsaturated carbonyl compounds increased continuously and in parallel. A substance of the flavor substances from oily butter contained α,β-unsaturated carbonyl compounds.

The neutralization of the butter moisture by a special salt to pH 5.5-6.6 prevented the development of oily flavor, no a,β-unsaturated carbonyl compounds were formed, but when neutralization did not prevent the development of the off-flavor, then the compounds were formed in the same way as in non-neutralized butter. The peroxides in different butters showed different rates of disintegration, measured as the relation between the amount of α,β-unsaturated carbonyl compounds and peroxide value at a certain point of time and, in one instance, the rate of disintegration was related to the conditions under which the butter was manufactured. G. H. Wilster

417. Bestemmelse Af Ostens Proteolytiske Spiltrningsgrad Med Sacrlligt Henblik Paa For­mltitrationen (Determination of the degree of proteolytic decomposition in cheese with special reference to the formol titration). M. T. Søde


The following standard method for determining the content of soluble N in cheese was developed: 10 g. cheese is dissolved by 40 ml. of 0.50 M tertiary sodium citrate at 40-50° C. and the solution made up to 200 ml. with water. 100 ml. of the citrate solution is precipitated, while vigorously shaking, with 10 ml. 1.41 N HCl and then the solution made up to 125 ml. This is followed by filtration, and N is determined by the Kjeldahl method, using 25 ml. of the clear para-caseln-free HCl-filtrate, corresponding to 1.0 g. cheese. By calculating the obtained contents of N as percentage part of the total amount of N, as found by the Kjeldahl method of 10 ml. of the citrate solution, the amount of soluble N in cheese can be ascertained. This may be indicated by the symbol % Nₚ. A standard method of determining the intensity of the proteolytic decomposition developed was: 25 ml. HCl-filtrate is neutralized by 2.60 ml. N NaOH; by careful addition of 0.1 N NaOH, the pH is adjusted to 8.30. The adjustment of pH is made colorimetrically by means of a solution of fuchsine with the same color as a solution of borate buffer of pH 8.30; 5 drops of 2% phenolphthalein/25 ml. HCl-filtrate serve as indicator. After addition of 10 ml. 40% formalin and 2 drops of the solution of phenolphthalein, titrate to the control color, and by the subraction of the amount of base consumed by the formalin up to pH 8.30, the formol titer at pH 8.30 is obtained, this latter being calculated as a percentage of the total amount of N in the cheese; it is represented by the symbol % Nₚ. Nₚ is an expression of the contents of free -RNH₃⁺ groups in cheese and likewise represent the contents in the cheese of ammonium ion which can be titrated by formol. If a correction for this latter is wanted, the ammonia must be determined directly in the cheese, and 90% ammonia-N should be subtracted from Nₚ as approximately 10% of the ammonium ion is titrated away at pH 8.3 (the pH of adjustment). Thus the reduced formol titration method differs from former formol
titrations by the omission of the traditional aeration of ammonia before titration. The investigation showed that ammonia does not occur in so large quantities in cheese that it is capable of reducing the total formol titer, as can be demonstrated in stronger ammonia solutions of amino acids.

The possibility of determining the intensity of the proteolytic decomposition of cheese on the basis of the optical activity of the HCl-filtrate was studied. The principle is the knowledge that in the course of proteolysis, solutions of proteins with pronounced specified laevo-rotation show a lowering in the laevo-rotation as a consequence of the lower laevo-rotatory activity of the released amino acids. A statistical examination of the connection between the specific rotation, \([\alpha]_p\), of N-0.37 in HCl-filtrate and the contents of the N non-precipitable by phosphotungstic acid (% N_p) resulted in the expression:

\[ [\alpha]_p^\circ = -92.11 + 2.152x\% N_p \]

The correlation coefficient of -0.73 shows less strength of relation and, consequently, the polarimetric method can only with approximation be taken as an expression of the intensity of the proteolytic decomposition. In orientating examinations the method can be of service because of its rapidity and simplicity, especially for highly ripened cheese, where \([\alpha]_p\) is more strictly dependent upon \(N_p\) than in mild cheese.

G. H. Wilster


Calcium ion concentration is measured by a color change of the ammonium salt of purpuric acid, at pH 7.5, from red-violet to yellow-orange.

R. Whitaker


Experience with various methods of conserving milk samples at a municipal laboratory are reviewed. Particularly recommended is a method which involves treating the sample with an antiseptic, followed by heating in an oven at 65–70°C for 6–12 hr. A saturated solution of salicylic acid in amyl alcohol and naphthalene are recommended as antiseptics in this method.

S. Patton


The determinations are made with dibzon, which gives coloured complex compounds with metals. Extraction with CCl_4 at different pH and the use of KCN, Na_2S_2O_3, etc. to mask the other ions allows the determination of each metal in the presence of great amounts of other metals. Quantities of these 3 metals, found in several types of water are shown; no sample contained toxic quantities of metal.

A. Fasler


A card for holding sediment tests, in which the filter medium is part of the card, is described. A transparent window arrangement is provided for permanency.

R. Whitaker

DAIRY ENGINEERING

A. W. FARRALL, SECTION EDITOR


Two dump tanks and 2 can upending devices are provided on each side of a conveyor for emptying cans of milk at a milk plant. The empty cans are moved away on another conveyor.

R. Whitaker


A shaft-sealing or stuffing-box arrangement described for the agitator shaft on milk tank vats, etc. The seal will remain tight even if the equipment is operated under vacuum or pressure.

R. Whitaker


A machine softens hard ice cream to produce a product similar to ice cream when drawn from the freezer. It consists of a vertical cylindrical chamber containing on the bottom a rapidly rotating disc, equipped with several right tines. The serving of hard ice cream is quickly reduced to a soft mass and is drawn from the chamber, through a gate in the side. The revolving disc is driven by a motor below the cylinder.

R. Whitaker


Similar to Abst. #424, except 1 tine is located close to the cylinder, thus facilitating complete removal of the softened product through the gate.

R. Whitaker


An ice cream freezer consisting of a horizontal refrigerated drum and a scraper blade is described.

R. Whitaker

FEEDS AND FEEDING

W. A. KING, SECTION EDITOR


The effects of the following treatments studied: (a) Control: 4.1 kg. hay, 18 kg. corn, 20 kg. roots and 1.3 kg. cons. (b) As the control +0.3 g. cod liver oil/kg live weight. (c) Protein concentrates in feed by herring meal of good quality and fat (10%).

A feed of cod-liver oil and herring meal for dairy cows was studied in 2 experiments. The purpose was to determine if cod liver and herring meal influenced the resistant of the milk to the development of oxidized flavor. The effects of adding cod liver oil and herring meal to the feed of dairy cows were studied in 2 experiments. The purpose was to determine if cod liver and herring meal influenced the resistant of the milk to the development of oxidized flavor. The effects of the following treatments studied: (a) Control: 4.1 kg. hay, 18 kg. corn, 20 kg. roots and 1.3 kg. cons. (b) As the control +0.3 g. cod liver oil/kg live weight. (c) Protein concentrates in feed by herring meal of good quality and fat (10%).

A method of operating a vacuum pan continuously and automatically by means of suitable means on the milk inlet and outlet lines and in the supply is described. R. Whitaker

GENETICS AND BREEDING

N. L. VAN DEMARK, SECTION EDITOR


Results of an extensive split-sample field trial using semen diluted with egg yolk-citrate buffer with and without sulfanilamide added are presented. The over-all conception rate and the conception rate of individual bulls showed no significant difference when sulfanilamide was added. No differences in dilutors were noted between the presumed conception rate at 3 wk. and those at 3 mo., which indicates that the addition of sulfanilamide had no influence on the incidence of early fetal death. R. P. Niedermeier


Fifty-five publications are reviewed. Three original experiments are reported in which dihydrostreptomycin sulfate was compared with other antibiotics in split samples of bull semen diluted in egg yolk-citrate-sulfanilamide as to their fertility improving ability. Results reported on 60- to 90-day % non-returns to 1st artificial service, were as follows: (a) 500 γ streptomycin/ml gave fertility increases of 4.0% higher than did 50 γ aureomycin. (b) 500 γ streptomycin/ml gave fertility increases of 3.1% higher than did 500 γ of chloromycetin. (c) 50 γ streptomycin/ml gave fertility increases of 0.1% higher than did 20 γ terramycin. H. L. Easterbrooks


The influence of several antibiotics mixed with yolk-citrate diluted semen upon the growth or survival of added strains of Vibrio fetus is reported. Bacitracin, gramicidin and tyrothricin had no noticeable inhibitory effect upon V. fetus, even at 16,000 units/ml. Polymixin, penicillin, aureomycin and terramycin produced some growth inhibition at high levels and became progressively more effective from 1 hr.-4 d. of storage at 5° C. Streptomycin inhibited growth completely at a 500 γ/ml concentration when inoculations were taken from the culture tubes. Centrifuging the tubes to secure V. fetus organisms free of streptomycin showed that between 1,500 and 2,000 γ/ml. were required to kill the cells at 5° C., but 500 γ/ml. were effective at 37° C. Streptomycin retained its bactericidal action against V. fetus more than 3 d., but penicillin and aureomycin were not completely effective for 1 d. at 37° C. The minimum concentration of streptomycin needed to inhibit growth at 37° C. was 1 γ/ml. These results show the feasibility of killing V. fetus in stored bull semen with 500 γ/ml. streptomycin and the possibility of using semen diluted with egg yolk-citrate buffer with and without sulfanilamide added.
of continued activity of the streptomycin in the cow following insemination. E. S. Swanson


One naturally and 3 artificially infected bulls were used to observe T. foetus infection. Trichomonads were found in the semen, and remained alive up to 5 days in stored semen. Trichomonads remained alive for 5 hr. on the walls of the artificial vagina. Bulls were artificially infected by using an infected vagina. Cultural methods are more reliable than microscopic examination of prepubital washings for detecting trichomoniasis in bulls.

R. P. Niedermeier


Breeding record studies based on non-return information comparing the breeding efficiency of dairy cattle served by natural mating and artificial insemination show that the percentage actually pregnant is 23% less than the 28-d. non-return figure. This condition was found both after natural mating and artificial insemination, and at about the same incidence. Comparisons are shown between the 28-56 and 112-d. non-return figures and pregnancy. The results of limited clinical observations in non-pregnant animals not returning in 28 d. showed corpus luteum persists in 55.5% of the cases, and sub-oestrus in 28.2%. A very low incidence of anoestrus was found.

R. P. Niedermeier


Twenty-three heifers were used in this study. Eight different P_2O_5 intake levels ranging from 17-163 g. daily were fed, and other feed constituents were kept constant. In the low-P groups it was difficult to determine estrus, even with the use of a vasectomized bull. The minimum daily P_2O_5 intake for satisfactory fertility appears to be 50 g. on the basis of results of this experiment.

R. P. Niedermeier


Intensity of color of 437 weanling calves and their parents was evaluated visually against a graded series of 8 shades of red judged to divide the observed range into equal classes. No differences between color intensity of steers and heifers were found. No recorded differences were given between uncastrated males and either steers or heifers. Calves consistently scored about a grade higher (darker) than cows. Mature bulls tended to be darker during years when feed was adequate than during years of feed scarcity.

Heritability estimates of 73.1 and 74.7%, respectively, were obtained by intra-line regression of offspring on dam and regression of offspring on mid-parental average. The offspring from different mating types possible under the conditions of the experiment gave results from which was concluded that approximately 3 pairs of major genes with additive effects were involved.

L. O. Gilmore

ICE CREAM


In the manufacture of ice cream, Abbott's Dairies has introduced a continuous process. Some ingredients, previously obtained in cans and bags, are now handled in bulk lots. The measuring of the bulk condensed milk, liquid sugar and fluid milk or water is achieved by metering devices and automatic flow regulators. Frozen cream is added in a flaked condition in a stream of warm mix-making ingredients. The mixture is pasteurized in a Sta-Vac heater. The present system has a capacity of 2,000 gal./hr. By converting to an H.T.S.T. method, it is expected that capacity will reach 30,000 gal./hr.

T. J. Claydon


Ice cream mix is mixed with a nontoxic compressed refrigerant, such as CO_2, and is sprayed into a chamber which is under reduced pressure. The product, frozen into an aerated solid, is compressed in a tapered closed screw-type conveyor and extruded continuously as ice cream in a definite overrun.

R. Whitaker


Details are given for the design of a motor-driven vertical ice cream freezer for home use.

R. Whitaker


The scientific research committee of Flavored Extract Manufacturers Association of the U.S. during the past years has studied how sugar might affect the optimum level of addition of vanilla to ice cream. Four samples of ice cream designated as low sugar (11%), low vanilla (4 oz.); low sugar, high vanilla (8 oz.); high sugar (17%); and high vanilla; and high sugar, high vanilla were submitted to 271 testers and their opinions ranked.
A new product in the family of citrus fruits has been announced. W. S. Smith, Univ. of Maryland, College Park. Ice Cream Trade J., 48, 3: 27. May, 1952.

A few hours after the fruit was removed from the tree, the pulp was put through sieves No. 027-, 0.027- and 0.062-in. sizes. The 0.027-in. screen was satisfactory, produced fast the yield was low and the process slow. The pulp was put through sieves 0.027-. A 3:1 pack of tangarine puree is added to 95 gal. of tangarine juice. The puree is added after the fruit had a more desirable appearance of experiments with fruit stabilizers when the 5 following basic requirements are fulfilled: (a) Purchase the best and most nearly troublesome equipment available. (b) Secure proper and profitable locations for the vending machines. Such locations can only be determined by a careful survey of conditions and by checking with a pilot machine, which can be moved from place to place to determine its potential drawing power. (c) Sell only quality merchandise with a sufficient variety or rotation of items so that people may have a choice. (d) Maintain a delivery system with clean, refrigerated trucks and well trained, uniformed drivers. (e) Provide a 24-hr.-a-day service department for the proper maintenance of all mechanical parts including refrigeration. The author predicts that within the next few years 15% of all ice cream novelties will be sold through vending machines.


Ice cream is frozen in a freezer to stiff consistency and extruded into individual portions, which are dropped into preformed packages. The pieces are hardened by passage through a chilled tunnel. One wall of the package is made flexible to facilitate removal at time of consumption.

R. Whitaker


The "ice cream parfait pie" is a combination of fruit-flavored gelatin, ice cream and fresh fruit to make a perfect filling for a flaky, tender pie crust. The fruit-flavored gelatin is dissolved in hot liquid and a pint of ice cream is added and stirred until melted. After chilling slightly, fruit or other flavoring is folded in and the mixture turned into a flaky pie shell to set. This recipe was created by the Ann Pillsbury Home Service Center Staff and is being used in the June Ice Cream Festival in key cities through the country.

W. H. Martin


The author, who operates a successful ice cream vending machine business, indicates that success in this field of endeavor can be achieved when the 5 following basic requirements are fulfilled: (a) Purchase the best and most nearly trouble-free vending equipment available. (b) Secure proper and profitable locations for the vending machines. Such locations can only be determined by a careful survey of conditions and by checking with a pilot machine, which can be moved from place to place to determine its potential drawing power. (c) Sell only quality merchandise with a sufficient variety or rotation of items so that people may have a choice. (d) Maintain a delivery system with clean, refrigerated trucks and well trained, uniformed drivers. (e) Provide a 24-hr.-a-day service department for the proper maintenance of all mechanical parts including refrigeration. The author predicts that within the next few years 15% of all ice cream novelties will be sold through vending machines.

W. J. Caulfield

56-58, 95. "May, 1952. National Dairy Products Corp. has issued a 20-page booklet entitled, "Fundamentals of Merchandising Ice Cream in Food Stores." The booklet states that ice cream sales in the average store today will rank in volume with jams, jellies, fresh vegetables, baby foods, shortening, salad dressings, paper goods, tea and spices and flavoring, accounting for about 2% or more of sales. Since 1948, sales of ice cream in food stores have
increased 30% or more. Grocery stores are selling about 75% of the packaged ice cream sold in the U.S.

Twelve major factors that influence ice cream volume sold in food stores are discussed.

Store managers should keep accurate record of sales, invite customer comment and get new merchandising ideas from the company salesman.

W. H. Martin


The price of ice cream/pt. at retail was found to vary between 1.75 and 50¢, with an average price of 31.4¢, according to a nation-wide survey. Hand-dipped and French types were excluded in making the survey. The highest average prices were quoted in Washington, D.C., New York, Boston, Fall River and Seattle, and the lowest averages were in Minneapolis, Houston, Los Angeles, Dallas and St. Paul.

W. H. Martin


A survey of large ice cream accounts to determine the reasons for their success indicated that 3 factors common to all these stores were large portions, mellow ice cream and a variety of flavors. The stores selling the most sodas were serving a big gob of ice cream on top of a bell-shaped 12-oz. glass, using 1 oz. of good syrup, 1 oz. of 20% cream, fine and coarse streams of carbonated water and 4 oz. of ice cream in a conical scoop hooked on the side of the glass. A triple scoop sundae in a paper dish can be made by using 3 no. 24 scoops of ice cream, 2 oz. of topping, whipped cream and a cherry. Milk shake sales were stepped up by using 2 no. 24 scoops of ice cream, 4 oz. of milk and 1.5 oz. of syrup. A loaded no. 20 scoop of ice cream was used for a 10¢ cone and a loaded no. 12 scoop for the 15¢ cone. Fresh-dipped pt. and qt. were packed in pails, leaving the flaps open. A scale is used to insure the dealer a profit and the customer a fair portion of 14 oz./pt.

The success of the store is dependent upon a satisfactory profit. The gross should be 42-45%. Store operators were urged to have good help, pay good wages, use quality toppings and to give the ice cream department more personal supervision.

W. H. Martin


“Soft ice cream” has increased considerably in sales volume during the last 5 yr. It is relatively low in fat content and high in total solids with characteristics that appeal to the consumer. Some of the problems of the industry arise from the special type freezers used and the need for a mix suited to the freezer involved. Purchase and handling of the mix by retailers needs special attention. Quality and type of product must be closely watched. Numerous legal restrictions have been placed upon the manufacture of the product. Expansion of the industry should be carefully planned to keep it in line with quality requirements and consumer demand. Ice milk and milk shake bases also are discussed by the author. (The tables referred to evidently have been omitted in printing.) T. J. Claydon


A vegetable fat frozen dessert priced at 94¢/retail appeared on the Chicago market during the last week of May. It was sold under such trade names as “Del-frost”, “Charlotte Freeze”, etc. The products are said to contain 6-10% vegetable fat. Ingredients listed are water, sucrose, condensed skim milk, coconut oil, corn syrup, stabilizer and emulsifiers, salt, natural and artificial flavors and certified color. Tentative regulations require that the product be sold in package only in units not larger than 0.5 gal.

W. H. Martin

MILK AND CREAM

F. P. H. Tracy, Section Editor


This is the 2nd and final part of a report on the problem of milk production and consumption throughout the world.

S. Patton


This is a 2nd article in a series which defends the advisability of compulsory pasteurization of milk.

S. Patton


Details are given for the construction of the bottom of a paper container for milk and other liquids.

R. Whitaker


A design and method of assembling a paper container for milk and other liquids is presented.

R. Whitaker


Dairy products susceptible to the formation of an off flavor due to exposure to light, are pro-

Device is described for inserting in the side of milk bottles and other containers, to provide an easy means of pouring. It consists of a sharpened tube, a flange and gasket for securing the tube against the side of the container and making it liquid proof, and a handle which may be rotated to open and close the tube.


Milk is treated with 0.1-0.2% by weight of grade H₂O₂, then all residual peroxide is destroyed with 0.1-0.5 g. powdered catalase. 1,000 lb. of milk and the milk homogenized and given a heat treatment to effect sterility.


This apparatus is designed to permit the boiling of milk to improve its sanitary and nutritional value. It is designed so that, even with violent boiling, the vessel does not overflow. Jets of the boiling milk vapor are condensed and returned to the boiling product.


By means of 1-¹⁴C glucose containing 11.3 µC of carbon-14, injected into the blood stream of goats, it was shown that the glucose and galactose obtained from lactose in the milk after 2.5 and 4.5 hr. after injection, came, at least partly, from glucose absorbed from the blood. Apparently, glucose does not form 2 identical 3-carbon intermediates which reunite to form galactose, but rather 2 different 3-carbon compounds probably form galactose from the absorbed glucose.


It is postulated from experiments on rabbits, using C-14 starch, that glucose is the precursor of lactose.