ANIMAL DISEASES

A round instrument, surrounded by a solid medicament, for inserting in and treating injured or diseased teats. R. Whitaker


BUTTER

Sticks of butter held in vertical channels are sliced by a knife blade into single individual servings by pressing a level. The butter is held in servable condition by cracked ice in an adjacent chamber. R. Whitaker

The most important factors influencing the quality of printed butter were storage time and temperature prior to printing. Butter stored at room temperature as well as cooler temperature was inferior with regard to flavor and general appearance 10 d. after printing. Deterioration was due to an increase in the size of the serum droplets resulting in a wavy, mottled butter and an increase in the number of bacteria. The churn seemed to have little influence on the quality of the butter, although prolonged working in a wooden churn increased the number of bacteria as compared to normal working in a wooden churn, and normal and prolonged working in a stainless steel churn. The use of regular salt or a special salt (buffer) did not influence the quality of the butter. T. Kristoffersen

CHEESE

The three important items in the manufacture of cheddar cheese in order of importance are quality milk, a dependable starter and satisfactory cheese making procedure. Low-grade milk can cause defects in the cheese in spite of pasteurization. A competent grader in the receiving room usually can pick out milk of poor quality by smell and thus reduce the amount of low-grade cheese. The methylene blue test has served a purpose in the past but its value in grading milk to be pasteurized for cheese making is questionable. The Wisconsin curd test is considered superior but may be no better than a competent grader by smell. Starters should be handled carefully by an approved procedure. The details of good cheese making procedure are reviewed. Holding the cheese at 50-65° F. for the first 60 days is recommended for cheese of good quality. Reference should be made to government standards, which may be obtained from the Production and Marketing Administration, in order to meet the requirements as to composition and characteristics of the cheese. F. W. Bennett

By using a white mutant obtained by irradiation of blue-green Penicilliu.m roqueforti, a Roquefort type of cheese is made which is free from the blue-veins, characteristic of such cheese. R. Whitaker

ABSTRACTS OF LITERATURE


A cheese curd cutter for a vertical cylindrical shaped cheese vat, consisting of a fixed shaft mounted in the center, to which one cutter is attached, and around which another cutter is made to rotate. The fixed cutter holds the curd from rotating.

R. Whitaker


Cheesemakers and dealers have observed excessive openings, gas holes, “sweet-holes” or splits developing in cheddar cheese during ripening. The defect may appear as early as seven d. to two wk. in cheese with moisture approximating 40% or more, or it may appear in Cheddar cheese after three no. of curing at 55° F.

The difficulty generally is attributed to the presence in the cheese of anaerobic gas forming microorganisms which can survive pasteurizing temperatures. The control measures that will minimize the development of late gas in cheese are summarized.

J. J. Janzen


S. Patton

CONDENSED AND DRIED MILKS; BY-PRODUCTS


Dry skim milk powder, having a minimum particle size of 200 mesh, is exposed to ultraviolet light of 2,500 to 3,000 Å for 20 to 40 min. to neutralize the sulfhydryl (—SH) radicals, for the purpose of improving the oven-spring of bread dough containing the powder.

R. Whitaker


The oven-spring of bread dough made with dry skim milk is improved if the reducing action of the sulfhydryl (—SH) radicals of the powder has been neutralized by chlorination.

R. Whitaker


A process is described for producing a concentrated pasteurized milk which, on reconstitution with water, gives a whole milk with a flavor indistinguishable from fresh milk. Critical ranges are given for the temp. and duration of heating during pasteurization and concentration, so as to avoid the formation of a cooked milk flavor.

R. Whitaker


Casein and lactalbumin are simultaneously precipitated from skim milk at 85-95° by adding the amount of acid required to bring the pH to the isoelectric point. Prepared in this way, the proteins are readily dispersible in water at the neutral point.

R. Whitaker


A can of evaporated milk is placed in this device which has a can puncturing attachment, which also serves as a pouring spout.

R. Whitaker

DAIRY BACTERIOLOGY


Seventy-five raw milk samples were collected from milk receiving platforms. Some portions were laboratory pasteurized. All were stored at 5° C. for 20 d. The average standard plate count of the raw milk increased from 29,000 to 88,000,000/ml. The average psychrophilic count increased from 690 to 84,000,000/ml. The standard plate count of the pasteurized milk decreased from 730 to 510/ml and no psychrophilics were found. Three types of variability of bacteria counts were obtained during the storage of commercially pasteurized milk samples. In one type the standard psychrophilic and coliform counts all increased rapidly. In a second type there was no increase in the standard count, psychrophilics reached 1/ml only after 6 d. and then increased rapidly and no coliforms were found. In a third type there was no increase in the standard count, psychrophilics reached 1/ml first after 3 d. and increased rapidly thereafter and coliforms reached 1/ml first after 12 d. and then increased rapidly. Changes in counts when plates were incubated at 25° C. for 3 d. followed somewhat the same pattern as the changes in psychrophilic counts. Psychrophilics appeared not to withstand pasteurization but were found in pasteurized milk as a result of post-pasteurization contamination.

F. W. Bennett

An improved procedure has been suggested for evaluating the bacterioidal properties of alkyl (C₆-C₁₃) tolyl methyl trimethyl ammonium chloride (50%). A comparative study on the bacterioidal efficiency of phenol and the quaternary ammonium compound tested over a wide variation in concentrations showed that these substances are not similar in their behavior, and therefore it is believed to be incorrect to speak of a phenol coefficient value for quaternaries. H. H. Weiser


DAIRY CHEMISTRY


Babcock milk test bottles were used as pycometers for determining densities of viscous liquids. A formula was developed to calculate density at a known temperature when the bottle neck reading and the weight of the fluid in the bottle were known. A precision of ±0.0002 gram per ml. was obtained with viscosities of 1000 to 2000 cp. and temperatures of 160°F to 180°F. B. H. Webb


DAIRY ENGINEERING

270. HTST timing with homogenizers. H. L. Mitten, Jr., and D. C. Roahen, Creamery

An air actuated, electrically controlled sanitary type pump for moving liquids with minimum agitation, with no moving parts other than inlet and outlet valves. Of particular value in pumping such products as cream, buttermilk, etc., the physical properties of which are impaired by agitation.

R. Whitaker


The savings involved when using bent pipe instead of welded ells are discussed. This type of installation has possibilities in any dairy plant as it is applicable to refrigeration, water, steam or fuel line construction.

The efficiency of such an installation is still another phase where bends prove their superiority. The smooth walls allow flow with lower resistance than ells, helping maintain the pressure.

J. J. Janzen

DAIRY PLANT MANAGEMENT AND ECONOMICS


The present system of payment for milk based on a differential for each tenth of a percent fat above or below the standard percentage needs re-evaluation. Greater emphasis should be placed on the solids-not-fat content of the product.

The method presented here is based on a consideration of the relative value of the components of milk to the consumer in terms of nutrition and in terms of prices of competing nutrients.

The basic formula employed is $Af + Bs = P$, in which $f$ is the number of pounds of fat in 100 lbs. of milk, $A$ is the value assigned to the fat in dollars per lb., $s$ is the number of lbs. of total solids in 100 lbs. of milk (approx. four times the number of lbs. of protein), $B$ is the value assigned to the total solids in dollars per lb. (approx. 1/4 the value of the protein per lb.), and $P$ is the price of 100 lbs. of milk. Values of $A$, $B$, and $P$ may be established by assuming values for any two, but preferably by setting a base price for 3.5% milk of average solids content and assuming a definite ratio of $A$ to $B$.

Three tables are included which show the changes involved in ‘price paid to farmer’ using different base prices.

J. J. Janzen


Milk dealers are installing dispensers in special outlets such as restaurants, drug stores, drive-ins, schools and hospitals, where milk is used in large quantities and where quick service is an important factor. A survey of the use of these dispensers shows that they enable the milk dealer to sell more milk with a lower distributing cost.

C. J. Babcock


The Milk Shed, Inc. of Moultrie, Georgia reports spectacular results from chocolate-selling by the Johnson Company “set-off” contest plan. The plan involves placing at each retail consumer’s doorstep a qt. of the dairy’s chocolate drink and a message from routemen. If the housewife does not want the drink, it may be set back out for pickup on the next delivery date. It is not a free sample, and if not set back out is billed at regular price. A few days later the routeman leaves literature urging the housewife to order chocolate drink regularly. The route which won the contest had a sales base of 6 qt. per d. retail and 256 wholesale. During the contest, this route totaled 52 qt. retail and 521/2 qt. wholesale. Two wk. after the contest, the route was selling 33 qt. retail and 443 qt. wholesale.

C. J. Babcock


As an aid to teaching high school agricultural students about cooperatives the Miami Valley Milk Producers Association in Dayton, Ohio employed 9 members of the Beavercreek High School Future Farmers of America Chapter for a day’s work in its plant and offices. The basic aim was a better understanding of dairy manufacturing and marketing operations. The preparations prior to the day in the plant and the activities in the plant are discussed. The event should be held in late spring when students are thinking about the type of work they want to do after graduation. Public relations programs
of dairy manufacturers can easily be coordinated with opportunities offered by groups such as the Junior Chamber of Commerce. Furnishing information to high school seniors about jobs in the dairy industry would add to the interest of students for the work as well as increasing understanding of the work done by industry. C. J. Babcock

Tests concerning restaurants as outlets for hot chocolate, and the equipment required for the sale of restaurant chocolate are discussed. Factors causing increased sales are listed.
C. J. Babcock

Studies were carried out on choice of technie and capacity in the Swedish dairy industry. Recommendations were made for a bottling plant handling 40,000 bottles a day and a cheese factory making cheese of 10,000 litres of milk a day.
T. Kristoffersen

FEEDS AND FEEDING

Rations containing linseed cake, linseed meal and linseed were given to 3 different groups of dairy cows. The more fat in the ration the higher was the yield of milk. Rape oil and soybean oil had the same effect with soybean oil being somewhat better. All 3 vegetable fats lowered the iodine no. of the butterfat resulting in a better consistency of winter butter.
Animal fats, lard, and ox-tallow also resulted in higher yields of milk when given to cows. The iodine no. was also lowered but butter made from such milk was considered less desirable.
T. Kristoffersen

Instances are given of subnormal butterfat tests occurring when normal roughages are lacking in the dairy cow rations. These include finely ground and pelleted feeds, chopped straw and molasses, corn or sorghum silages with limited pasture and inadequate pasture. Other cases of subnormal butterfat tests have been reported when cows were pastured on young, succulent oats.
Few instances of butterfat tests below standard were found when cows had adequate pasture, hay or silage. Where the herds with subnormal butterfat tests were fed hay the fat tests soon began a gradual increase.
J. D. Donker

Two groups of nine cows were used in three periods in an experiment to determine the effect of feeding a-tocopherol acetate. One group remained on a control winter type diet, while the experimental group first was observed in a preliminary 42 d. period without supplement and then under supplementation with 2.0 g. of tocopherol daily for 63 d. There was a further observation period of 35 d. following cessation of feeding the tocopherol.
Tocopherol feeding did not significantly influence milk yield.
There was an indication that the feeding of 2.0 g. a-tocopherol acetate daily to cows caused butter made from their milk to develop an oxidized oily flavor.
A second experiment on supplemental feeding at the same rate used two groups of seven cows for three periods of 35 d. each. The difference in butter quality was less definite but in the same direction on butters stored for 3 months at –12° C.
It was found in this group of butters that feeding tocopherol did raise the tocopherol content of butter to about twice that of butter from the unsupplemented group. The higher levels returned to normal in 2 weeks of the final period. The cows were then turned to pasture and tocopherols rose to about what the supplemented group had been (25 μg./g.).
The butters were tested on chicks to determine the tendency toward producing encephalomalacia. In neither group did the disease appear when butterfat was incorporated at a 30% level of the diet. In the group receiving butter from cows not supplemented, white striations appeared in 5 of 10 chicks while in the other group, 1 of 10. Thus, an increased protection was afforded chicks by the increased content of the tocopherol in the butter.
The supplementation of a winter ration with 2.0 g. daily of a-tocopherol acetate did raise the tocopherol content of the resulting butter. Milk yield and fat % were not influenced. Butter keeping quality was not materially changed but was slightly decreased.
A. R. Porter

Ten Red Poll and ten Ayrshire cows were treated with iodinated casein or an equivalent amount of L-thyroxine following the peaks of production in several consecutive lactations. Their herd health record, reproductive performance and milk yields were compared to a control group of cows of similar genetic make-up. The iodinated casein was given for 15 weeks beginning at the 17th week of each lactation in the amount of 20 g. daily (80 mg. L-thyroxine) for the first 12 weeks, 15 for the next week, 10 the next and 5 the final week.

The incidence of disease over four lactations was not different between groups. There were for the control and experimental herds respectively 1.85 and 1.73 services per conception and 440 and 446 days between calvings, these figures not being significantly different. The treated Ayrshires lost weight during the first 12 weeks of feeding iodinated casein (18.6 lbs.), while the controls gained (46.2). Both groups of Red Polls gained; 68.2 lbs. for controls and 13.2 for experimental.

The control group of Ayrshire cattle gave 600 lbs. more milk per cow per lactation in the preexperimental period. The Red Polls were more evenly matched. Increased productivity reached maximum proportions 4-6 weeks after the start of feeding the drug. This increase became progressively less until the control animals were giving more milk before the end of the feeding periods. Consequently the lengths of the lactations averaged approximately 5 weeks less overall. It was only if daily average production for the experimental period was calculated that one of the experimentally fed groups produced significantly better than the control groups. This benefit appeared only in the first lactation of the Red Polls and may have been the result of their heavy fleshing prior to the start of the feeding of iodinated casein. There appeared to be no difference in butterfat % of the milk from the experimental group.

J. D. Donker


Types and nutritional value of winter pastures are discussed.

R. W. Hunt


(Chem. Abstr., 47: 12541g. 1953.)

B. L. Larson


B. L. Larson


B. L. Larson


B. L. Larson


S. Patton


S. Patton

GENETICS AND BREEDING


Forty-five pairs of sister animals were obtained equally distributed among identical twins, fraternal twins and half sibs. Pairs were observed as to variances arising within members and this compared to variances between pairs to arrive at heritability estimates of various characteristics. Management was within normal farm routine with care taken to hold environmental variation to a minimum. Hay was fed ad lib in winter. Free access was had to pasture in summer. Grain and silage were rationed according to body weight and milk production. The feed available was considered to be of such quantity and quality as to not be a limiting thing in the observed performance. Each animal was weighed every second week. The heifers were to be bred at 15 months to members of identical twins.

It was stated that diagnosis of one-egg twins on subjective characteristics are accurate to the
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A coupling for attaching a milking machine to a fixed vacuum outlet. A built-in valve closes when the milking machine is disconnected.

R. Whitaker


A design for a milk strainer, so constructed that the filter pad is centered and rigidly held in place on the strainer.

R. Whitaker


A conical shaped scraper is installed in the bottom of a silo. Pressure of the silage actuates a motor which rotates the scraper and delivers silage to feeding outlets as consumed.

R. Whitaker


A watering trough suitable for cows, chickens, etc., having a float valve to maintain a given level and a thermostatically controlled electric heater.

R. Whitaker


Details are presented covering the construction of a pneumatic type milker pulsator.

R. Whitaker


Construction details are given for a vacuum type milker pulsator.

R. Whitaker


A cylindrical shaped portable milker, having a detachable pulsator and connections to a vacuum supply and lines to teat cups.

R. Whitaker

ICE CREAM


Ice cream gallonage in 4 midwestern ice cream plants which also made vegetable-oil frozen desserts (Group 1) was down 9.3% and in 3 plants which did not make these new products (Group 2) it was down 4.1% during June 1952-May 1953 as compared with the past 12 mo. The overall gallonage of frozen desserts increased 11.5% in Group 1 plants but decreased 1.3% in Group 2 plants. Gains in the utilization of serum solids were 1.4% and less than 1% respectively.

F. W. Bennett


Liquid sugar is a 67% sugar syrup containing varying amounts of impurities depending upon the method and degree of purification carried out by the refinery. High quality liquid sugar is virtually free of color and it has no flavor other than sweetness. It has a low ash and invert sugar content, is practically neutral in reaction and is comparatively free of colloidal material.

Means of protecting liquid sugar from possible deterioration, methods for measuring liquid sugar into a mix, and the advantages claimed for the use of liquid sugar are discussed.

The author indicates that the marketing branch of the U.S.D.A. is studying the question of formulating standard grades for liquid sugar products. In setting up standards for the industry, the need for uniform procedures in evaluating the various factors which determine quality in liquid sugar products is stressed.

W. J. Caulfield


The opinions of 1500 representative consumers were obtained in an effort to learn what factors are important in consumer acceptance of packaged ice cream.

Summarization of these opinions indicates that: (1) availability, (2) good assortment of flavors, (3) storage of the ice cream in a special cabinet so as to keep the packages firm, and (4) providing insulated bags are factors which are important to 75% or more of the consumers in the purchase of packaged ice cream. Numerous other data relative to the sale of ice cream are discussed.

W. J. Caulfield

The simplified practice committee of the IAICM reports that two standard ½-gallon packages have been developed with the following dimensions:

- No. 1: squat 3 3/8" x 4-13/16" x 6-47/64"
- No. 2: tall 3" x 5" x 7-19/32"

Restraining forms for use with the two styles of cartons have the following dimensions:

- No. 1: 3-39/64" x 4-59/64" x 4"
- No. 2: 3-7/64" x 5-7/64" x 6"

W. H. Martin


A survey made by Univ. of Ore. to find out why and how often consumers changed brands of various kinds of merchandise showed that 3,755 customers made 24,401 changes over a 6-yr. period. 5,422 changes were due to dissatisfaction with the product, 3,751 because the price was too high, 3,323 changes resulted from other product advertising, 2,886 due to recommendation of friends, 2,064 because they did not like the style of the product, and 1,561 changed because they did not like the dealer who supplied the former brand.

W. H. Martin


Based on 1952 operations, the weighed average cost for ice cream per gallon in the U. S. was $1.595, or 9¢ more than in 1951, 22.7¢ more than 1950, 25.5¢ more than 1949, and 74¢ more than was reported for 1939.

In 1952 percentage costs were: ingredients, 48.99%; manufacturing, 20.17%; selling and advertising, 9.56%; delivery and customer service, 13.43%; and administrative costs, 5.85%.

W. H. Martin


Examination of 669 samples of frozen desserts from 15 different processors over a period of 47 mo. revealed that 20% of the samples were negative for coliform bacteria and that 48% contained not more than 10 coliform bacteria per ml. It was found that 69% of the samples had standard plate counts of not more than 50,000 bacteria per ml. The bacteriological quality of novelties was found to be inferior to that of ice cream. The 85 samples of counter freezer products examined had lower coliform counts but higher average standard plate counts than either ice cream or novelties.

W. J. Caulfield


An ice cream stabilizer consisting of ammonium and alkali metal salts of polyacrylic acid.

R. Whitaker


A body building material or thickening agent, consisting of milk protein dispersed in an aqueous solution of a mixture of Na and K metaphosphates and a solubilizing agent for the metaphosphate.

R. Whitaker


A can filling head is described, which is mounted over a conveyor. Means is provided for holding the can under the head until almost full and then releasing it, so that when it leaves the filling head, it is level full.

R. Whitaker


Exposure of milk in conventional glass bottles to daylight for about ½ hr. produces a defect commonly known as sunlight or activated flavor. Experiments have indicated that the flavor substance has its origin in methionine and that flavor production is dependent, in large measure, on the presence of riboflavin. When distilled water solutions of methionine (20 mg./qt.) and riboflavin (1.5 mg./qt.) were examined, the sample containing methionine developed a slight sunlight flavor, while that containing methionine and riboflavin developed the flavor to an extreme degree. Flavor defects did not develop in the sample containing only riboflavin. Samples containing added cysteine and cystine exhibited about the same degree of sunlight flavor as the control. The flavor was greatly intensified in the sample containing methionine.

C. J. Babcock


A small cabinet for holding a container of cream fitted into a chamber surrounded by ice.
or other refrigerant. The cabinet also provides refrigerated storage space for a number of small individual containers. R. Whitaker


In 1946, a meeting of marketing economists was called to explore the feasibility of expanding and refining the methods of pricing milk in Ohio city markets. The participants were from several states, the P.M.A., and from every federal order market in Ohio. As research progressed, it was recognized that the problem was to build a formula based on economic factors. The Tri-State market was the first Ohio market to consider incorporating economic factors into their formula. Feed and labor, wholesale price index and retail sales index were to be used. After considerable deliberation, the Dairy Branch did not approve the use of this new formula. In 1949, the Akron Milk Producers requested that the Dept. of Agr. Econ. work on a formula using the following factors: cost of production, condensory prices, wholesale price index and retail sales index. Comparison of actual prices vs. prices calculated according to economic factors reveals that generally the calculated price would have been higher than the actual price paid. It is believed that neither of the formulas is being used.

R. W. Hunt

MILK SECRETION


The authors describe in detail a fully automatic milking rate and yield recording device which needs no special attention from anyone other than the regular milker and in no way interferes with his routine work. The timing and recording mechanism is actuated by a switch within the teat cups when they are placed upon the cow. It automatically stops recording when the rate of milking falls below a prescribed level (0.5 lb./min.) at which time the milker may machine strip the cow. The recorder automatically zeros itself when the milk container is emptied. There is included a description of an improved type experimental magnetic pulsator for the milking machine to be used in studying how pulsation stimulation affects the cow's response.

J. D. Donker


The effect of varying the pulsation rate at 20, 50 and 80 cycles per min. was examined as to effect on milking rate. Three groups of three cows were used. Each group contained a slow, medium and fast milking animal. Each group received each treatment of pulsation rates. The groups were rotated at weekly intervals and average milking rates were compounded from the last four days in each period.

It was found that rate of milking in first min. increased 1.92 lbs. when going from 20 to 80 pulsations per min., peak flow increased 1.39 lb. per min. and overall rate 0.34 lbs./min., while total duration of milking decreased 1.26 min.; all effects being significant at the 5% level. There appeared to be no effect on total yield or stripping yield.

An experiment was set up to determine whether the observed effects were due to a stimulating effect on the milk ejection mechanism or due to mechanical conditions in the teat cup assembly. This was done by milking two halves of the same cow at two pulsation rates simultaneously thus eliminating the cow effect. Five cows with a wide range of milking rates were chosen (1.85 to 7.03 lb./min.). The experiment was set up so that each cow was subjected to all treatments on both udder halves. The milk obtained expressed as a percentage of the 50 cycles per min. peak rate was 109.72% for 80 cycles and 81.10% for the 20 cycles/min.

It appears from these experiments that milking times may be reduced by about 10% when milking cows at a pulsation rate of 80 cycles per min. compared to a usual of 50 cycles/min.

J. D. Donker


Three hundred twenty-six records of milking rates from 141 cows were gathered from 1946 to 1952 from Shorthorn, Guernsey, Friesian and Ayrshire cows. The records were made between the 5th and 6th weeks of each lactation for three consecutive morning milkings. In addition ten cows had records taken daily for two weeks and another ten cows had weekly records made over a lactation.

The lactation trends showed that as yield increased or decreased so did yield in first minute, mid-milking rate, peak flow, machine rate and overall rate. The duration of milking decreased due to the fact that yield dropped faster than milking rate. Of the regression coefficients calculated for the ten cows of morning yield to rate in first minute, mid-milking rate, peak flow, machine rate, and machine time. All are positive and 38 of 50 are significant at the 1% level and 3 at the 5% level. Stripping yield on milk yield showed no relationship. There is an indication from partial regression coefficients that as the time from calving increases independent of yield that peak flow
and machine rate decrease while machine time increased. Calculation showed that the fast milking cows had a greater absolute and relative fall in milking rate associated with decreased yield than the slower milking cows.

Total time of milking also increases as the yield increases and to a greater extent than rate. The trend is gradual and the statistical significance of the differences between lactations is usually above 5%. Partial regression coefficients show that while peak flow is not affected by increased age, the duration of milking time increases, probably because of the effect of age increase on increased yield of strippings and machine rate.

Statistical analysis showed that total duration of milking was influenced in the following ratio by milk yield, stripping yield and peak flow: 3:1:6. A good measure of machine rate is the % yield in the first two minutes of milking.

The correlation coefficient between this datum and machine rate is .869 and significant at the 1% level.

While the anatomy of the teat orifice is the main controlling factor in rate of milking there are other minor changes associated with yield, stage of lactation and age. J. D. Donker

NUTRITIVE VALUE OF DAIRY PRODUCTS


PHYSIOLOGY AND ENDOCRINOLOGY


SANITATION AND CLEANSING


This article is a discussion of the experimental procedure and experimental data on cleaning glass lines in place. The following conclusions were obtained: (1) Velocities of 1, 2, 3, and 4 ft. per sec. of a cleaning solution resulted in a line that is visibly bright and shiny; (2) A medium strength acid cleanser followed by a medium strength alkaline cleanser is the most effective cleansing method for removing organisms from the line; (3) The higher the velocity the more effective the removal of bacteria from the line in the cleansing process; (4) Hot water is more effective than chlorine solution in sanitizing a glass line; (5) A velocity of 3 ft. per sec. of 190°F. water or 200 p.p.m. chlorine solution will satisfactorily sanitize a glass line, and (6) Hot water (190°F.) or a 200 p.p.m. chlorine solution will destroy coliform and thermophilic bacteria in a glass line.

C. J. Babcock


A project involving 10 barns and 15 treatments was conducted during the summer of 1953. The following conclusions were obtained: (1) In conventional dairy barns, residual wall sprays of malathion or diazinon were satisfactory; (2) In conventional barns, floor treatments of malathion, lindane-TEPP, or Bayer L 13/59 were satisfactory; (3) In loose housing, direct spraying of the animals was the only effective method of control; (4) In milk parlors, bags sprinkled with malathion bait mixture gave satisfactory control; (5) In the 1952 season, lindane vaporizers were ineffective.

R. W. Hunt


S. Patton