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NATIONAL
MACARONI MANUFACTURERS
ASSOCIATION



JUNE, 1969
SEMINAR ON EGGS
DAD'S SPECIAL DINNER



PACKAGING PERSONALITIES



**William Underwood
and
Thomas Kensett**

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Cover Photo

A special dinner for Dad features Herb-Mustard Glazed Leg of Lamb served with Calico Noodles. Recipes are on page 16.

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SEMINAR ON EGGS

SOME sixty macaroni plant managers and egg suppliers met for a seminar in Chicago April 14-15-16. They visited the Chicago Mercantile Exchange to witness futures trading and then the egg breaking plant of Schneider Brothers.

IAPI President

Harold M. Williams, president of the Institute of American Poultry Industries, declared that noodle manufacturers as food processors and businessmen, should have an overriding concern for the wholesomeness of all of the ingredients used in their finished product. "If you do not have this concern, you are going to run into trouble with the Food and Drug Administration and Public Health officials who are daily becoming more and more quality-conscious and active in consumer protection."



Harold M. Williams

Mr. Williams cited that "at the recent Egg Products Quality Control School held by the Institute there were reports on a program called Vendor's Assurance. This is a program calling for rigid purchaser specifications with a seller guarantee that the product is produced under proper conditions. Everyone has a stake in this—we are operating under different ground rules than we did ten years ago."

Mr. Williams continued: "As manufacturers of food products, you and the egg processors have a mutuality of interest. You have enlarged responsibilities and consequently enlarged liabilities. Borden's experience with salmonella in Starlac cost them millions of dollars and killed the brand on the market."

Egg processors have been the residual users of the production of barnyard flocks, Mr. Williams noted. The family farmer produced the grain, took care of the flock, and didn't have any cost system. As far as the processor was concerned, there were no labor problems in production, no union contract, no unemployment insurance, but there were tremendous collection costs. This has all changed now. Mr. Williams declared, with large integrated operations. Just as in all agriculture, there has been increased productivity with the use of fertilizers, pesticides, equipment and technology.

"If you stay in this business today," said Mr. Williams, "you have heavy fixed investments, fixed costs, and a lot of depreciation. Some operations with

a million layers have an investment of four to five million dollars.

Social Costs

"We are working in a new area of social costs, and business is going to have to pay for pollution, noise, dirt, accidents, sicknesses, wastage of natural resources, impairment of aesthetic values, drudgery and destruction of human personality." Mr. Williams observed that it used to be that society bore these costs, but it is being turned over to the business community.

"I think most of you are aware that Senator Mondale has introduced a bill to require compulsory inspection of egg products and the surveillance of shell eggs and feed," said Mr. Williams. Some legislation is bound to pass. "These are some of the broader problems you must think of in industry terms. They cannot be treated on an individual basis no matter how big your company is. I think that quality control, especially in the poultry and egg business, is of industry concern. Bad management practices of one or two companies can give the whole industry a black eye."

"Peter Drucker has said that 'the future has already happened.' If we know what forces are in motion and what is taking place, we can make predictions to a certain degree. In the poultry industry we have used up our stream as far as efficiency is concerned. In the past twenty years as costs have gone up for wages, interest, transportation, and every other thing, we have been able to produce chickens at half

the price that they used to be. But what we need is some creative merchandising with more emphasis on wholesome assurances and more emphasis on convenience. This is a part of the creative change which will require joint action by industry, government, educators and researchers working together. We look forward to working with you."

Quality Control

Mrs. Margaret Huston, scientific director of the Institute of American Poultry Industries reviewed the chemical and bacteriological methods for the examination of egg products. This included tests for total solids, fat by acid hydrolysis, NEPA yolk color score, surface film method for percentage of yolk in liquid or frozen egg whites, Stuart's solubility method, palatability test, and the bacterial analysis of egg products including bacterial plate count, coliform count, yeast and mold count, staphylococcus count, and salmonella procedure. These methods in a bound loose-leaf notebook are priced at \$4.

Additional materials available from the N.M.M.A. office include a brochure on trading on egg futures on the Chicago Mercantile Exchange; check list for egg product pricing; pounds of egg to be used to obtain 5.5% egg solid content in egg noodles; P.E.V. Plant Evaluator No. 5 for Frozen Egg Products; P.E.V. Plant Evaluator No. 19 for Macaroni and Noodle Products; Antibiotic Residues in Foods; and a paper from IAPI on "How Yellow Is Yellow?" Entire set sells for \$5.

Highlights of Comments by Samuel M. Hart, Chicago Regional F.D.A. Director

THERE may be a new attitude on the part of the Food and Drug Administration—we do want to talk with industry people.

I have instructed my staff of inspectors that when they go into a plant and find anything to which they take exception, they are to point it out to the management of the firm at that time. It is of no benefit to us or the consumer or the company to wait a period of time to find out what the complaint is. I think that it is essential that we talk with each other, so that we understand what each is thinking, and then we can do a much better job.

Sanitation is an area where progress has come slowly, and improvement is



Left: Bill Schneider (with papers in his hand) explains pasteurizing procedures. Center: Foust Falconi, Ed Vognino, Paul Reining, Walter Lehrer, Nick Rossi watch egg breaking operation. Right: Lab technician Louise Robin shows Nick Rossi salmonella culture.

usually the result of perseverance and determination. Food laws are not new; they go back into history before the time of Christ, and their objective has always been to protect the consumer.

But the science of sanitation is relatively new to many of us. It has developed rapidly in recent years, particularly since Pasteur established the theory of self-propagating nature of microbiological organisms and showed them as the basis for most contagious diseases.

We cannot relax our efforts. Our earlier work in the areas of sanitation concerned with the obvious sources of insects and rodents has now been enlarged to include bacteria.

Even more recently we have improved our reporting procedures, our methodology and to techniques to know about salmonella. It has been reported by the National Communicable Disease Center of Atlanta, Georgia, that there are outbreaks of salmonellosis ranging as high as 20,000 reports a year. We estimate that there are actually closer to 2,000,000 Americans, or about one percent of the total population in the country, that suffer such attacks during a year's time. Many of these cases are not scored or reported, because people think of them as stomach upset, 24-hour flu, food poisoning, or some thing of that nature.

Our style of living today renders the consumer much more vulnerable to food-borne infections than ever before. Convenience foods, ready-to-eat foods, frozen prepared foods, partially cooked foods, many requiring minimal heating before serving, often open up avenues for mass infection. A single employee in a food plant with an infection can affect thousands of customers.

Quality Assurance

I should like to comment on quality assurance in lieu of quality control, as quality control is frequently thought of as dealing only with laboratory testing or analysis. Quality assurance encom-

passes control over the entire operation, from the start with the raw materials right through to the finished product.

Just as recently as three years ago, we found that in examining 309 samples of domestic eggs, 81 of them, or 26 per cent, were contaminated with salmonella. Today the record is much better, and I don't want to single out eggs, because there have been problems with dairy products, chocolate bars, dry yeast, and other foods.

Although bacterial spoilage and contamination can be eliminated by sterilization through heat, this may play havoc with the flavor or the quality of the food. Thus, the goal of providing a good quality end product oftentimes can only be produced with clean quality raw materials and by maintaining a high sanitary manufacturing condition.

Plant Evaluation System

From the bacterial standpoint, we might look at these points in your manufacturing operation: (1) Are critical raw materials such as egg products and dried milk products examined bacteriologically by the firm, or are they purchased under a supplier's guarantee of bacterial purity? (2) Are raw materials requiring refrigeration stored at a temperature of 40 degrees or below, and those needing freezing held at zero or below? (3) Are frozen eggs and other such materials used without undue delay after removal from storage? (4) Do people handling the foods or those who come in contact with the surfaces of equipment wear clean clothes, hair restrainer, and maintain personal cleanliness and hygiene habits? (5) Are hand-wash facilities and sanitizing facilities available in the processing area? If so, are they used?

The Plant Evaluator system is not designed as a check list for an individual firm on which we would judge that firm's operation. Rather, it is a guide and a technique for improving planning. It has evolved from the concept

of problem-solving on an industrywide basis as opposed to present orientation on checking out individual firms.

Again, to point out the need for quality assurance, we would include these points in any good program: (1) Promote personal cleanliness among employees. (2) Have an effective employee health surveillance program. (3) Train employees to prepare, handle, and store foods in a sanitary fashion. (4) Adopt good manufacturing practices to include closed line operations, but remembering that such an operations system must also provide for adequate cleanup. (5) Establish written rigid specifications on incoming ingredients, particularly those subject to bacterial contamination. Raw materials showing damage or evidence of adulteration should be rejected, and specifications should provide for guaranteed and/or bacterial testing by the receiver. (6) Proper storage temperatures and proper time/temperature relationships should be maintained. (7) Both raw materials and finished goods should be rotated, and any spoiled goods destroyed. (8) There should be an effective control program of plant environment including such things as the elimination of insects, birds and rodents, dust control and assurance of clean air intake. (9) Finished product should be tested for bacterial contamination. (10) There should be good communications between management and employees.

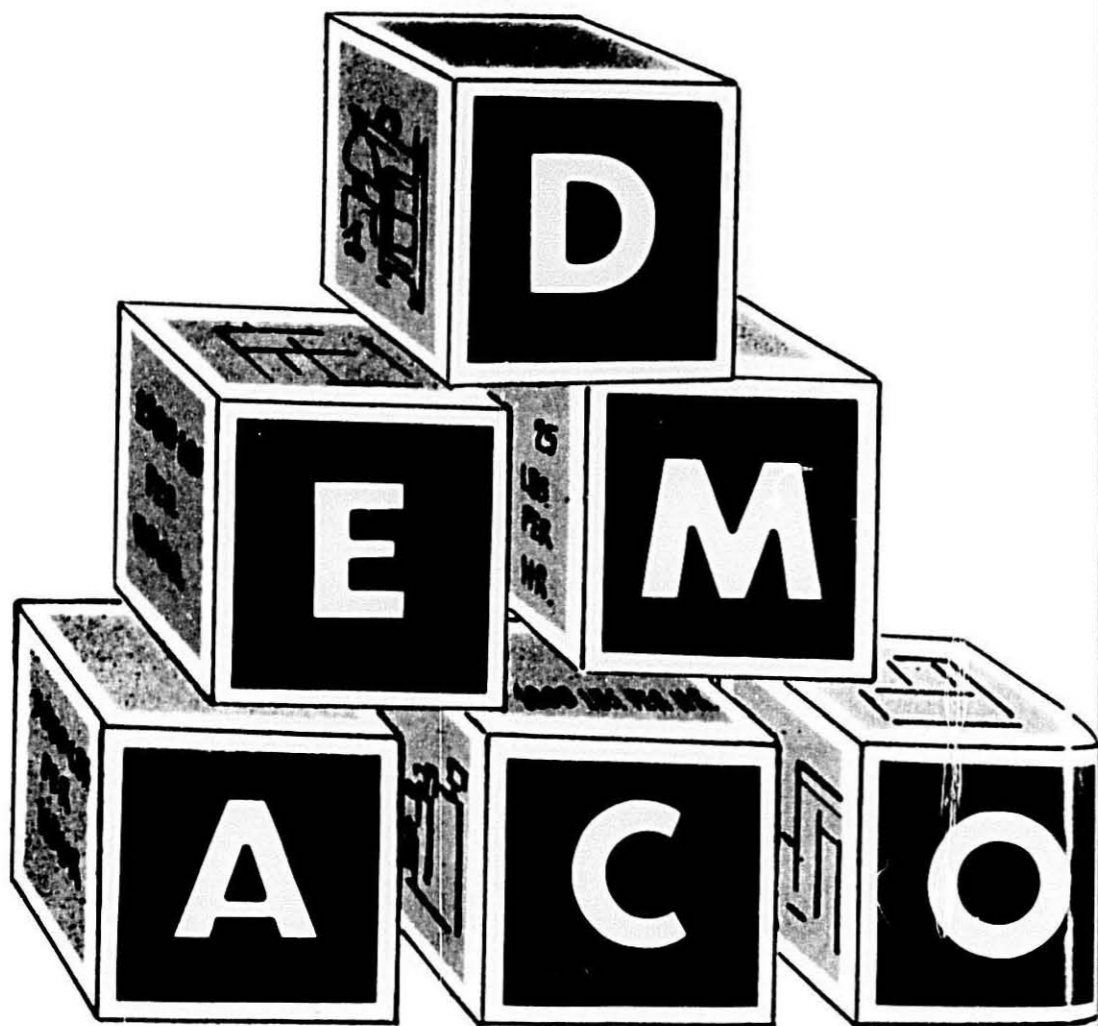
Your product is your livelihood. If it doesn't have consumer acceptance, you are out of business. Management attitudes are the keystones for quality assurance.

Biological Center

Now, a bit about the National Biological Center in Minneapolis. It is still in its infancy, having been established in February. It is a Division of Microbiology of the Bureau of Science in Washington. It will assist the Food and Drug Administration in determining

(Continued on page 8)

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Sam M. Hart—

(Continued from page 5)

the biological quality, content and suitability of a wide variety of foods, drugs, cosmetics, and devices that are surveyed through the United States. The Center will make possible a better national program of surveillance of consumer products for microbiological tests for seventeen F.D.A. Districts and other governmental agencies.

EGG BREAKERS PANEL

THE highlight of the Seminar on Eggs was a panel discussion by some of the leading egg breakers in the industry. They were V. James Benincasa, V. Jas. Benincasa Company, Zanesville, Ohio; Mel E. Krigel, Monark Egg Corporation, Kansas City, Missouri; Morris Schneider, Schneider Brothers, Inc., Chicago, Illinois; Leonard P. Ballas, Ballas Egg Products Corporation, Zanesville, Ohio; Robert Eggleston, Henningsen Foods, Inc., Springfield, Missouri; Dan Gardner, Milton G. Waldbaum Company, Wakefield, Nebraska; Hugh G. Oldach, Wm. H. Oldach, Inc., Philadelphia, Pennsylvania. Their comments ranged from egg standards to taking samples.

Standards

Jim Benincasa was the lead-off man, who observed that egg standards generally had to do with solids content—45 per cent for egg yolks, 26 per cent for whole eggs, and 95 per cent for dried eggs, being the normal starting points. Regulations governing the grading and inspection of egg products issued in 1967 from the Department of Agriculture appears under Title VII Agriculture, Chapter I—Consumer and Marketing Service (Standards, Inspections, Marketing Practices), Department of Agriculture—Part 55, Grading and Inspection of Egg Products Standards of Identity come under the Food and Drug Act and are promulgated by the Food and Drug Administration.

Specifications

Mel Krigel commented on specifications by saying that "the dictionary tells us that the meaning of buying is to get something by paying a price after careful planning or negotiating. It defines specifications as a detailed description of particulars. Actually, buying specifications are a medium of communication between supplier and user. I will bring out a few points that are of importance to both your supplier and you as the user. In other words, how can you be assured that you always buy a good egg?

"Yesterday you heard Mrs. Margaret Huston of the American Institute of Poultry Industries explain the many chemical and bacteriological methods for the examination of egg products. Earlier today, you saw an egg breaking operation whose function it is to handle the liquid egg meat properly before canning. Of course, many of you are now using dried egg solids, and if you have had an opportunity to visit a drying plant you would see much of the same processing equipment plus a great more of the stainless steel tanks, vats, pasteurizers, drying units, shakers, etc. The air that is used for the drying units passes through an absolute filter system, and the same is true for the packaging rooms. In addition, these rooms are temperature controlled so as to obtain as close to sterile conditions as is possible to produce the good egg.

"I would like to mention that your buying specifications should be realistic and firm. Certainly we are not here to tell you from whom to buy, but you should know the company with whom you are dealing. Today, your reputable processor maintains a quality control program, and some supplement this with U.S.D.A. inspection as well as maintaining an in-plant laboratory. Recontamination is a serious problem, and no one or no plant is infallible. For this reason, end product testing is necessary.

"At a recent egg products school, one of the panelists stated that the quality of his product is directly related to the quality of each component raw ingredient, and there are no processing means to make acceptable the unacceptable. Let me repeat the last ten words: **There are no processing means to make acceptable the unacceptable.** Your supplier will furnish you with a set of specifications for frozen or dried egg products; if yours are different, let him know about it ahead of time. Give him a chance to meet the specifications if they are different from his own. It is also good practice today to request a salmonella certification in the form of a continuing warranty or certificate. True, all food products, egg or otherwise, must be salmonella negative, but how nice it is to be able to back up each invoice with a certificate from a recognized laboratory, that the produce described has been tested and found to be salmonella negative."

A question came from the floor concerning the meaning of NEPA color—what does NEPA 3 mean?

Answer: NEPA 3 color is in the range from 2.6 to 3.4, but if you specify a guaranteed 3, it must be 3.0.

Question: Is there much of a variance in egg solids when specifications call for 45 per cent?

Answer: Frozen yolks for the noodle industry generally require 45 per cent egg solids. There is no point in the egg breaker's delivering 44.5 per cent or 46 per cent. This is a set specification, and there should be no problem in meeting it.

Feeding for Color

Morris Schneider discussed the subject of feeding for color. He observed that several years ago the feed industry decided to get into the egg business. They ran large flocks, and the elimination of the small egg producer also eliminated a source of supply that provided deep yolk color. With farm flocks disappearing, there are still certain localities where dark yolks can be purchased, but the degree of color is fading rapidly.

"Some years ago, we closed our operations in Minnesota and moved to the South with the thought of producing eggs for egg breaking purposes. Along with that move we began a research program of feeding with one of the major feed companies to produce a formula for dark colored yolks. We run approximately 100,000 birds in Alabama.

"We can produce for color, but in the process we found that the chicken eats more feed and produces fewer eggs, so the process costs more money.

"As to the future of feeding for color, it is a matter of economics. If we can't get that return, obviously we cannot feed."

Question: Are we the only industry requiring dark colored yolks?

Answer: Yes, the noodle industry wants dark colored yolks, and while a few bakeries do, the rest of the baking industry, salad dressing manufacturers, and table use all require light color.

Question: Can the noodle industry expect color in a range of 3.5 to 4 in the future?

Answer: It will become increasingly difficult, but I believe that the egg industry will have continuity of production all year round, and as I say, if feeding for color is economically feasible, it will be done.

Question: With the high cost of money today, do you think there will be many eggs put into storage?

Answer: I don't think the high cost of money has so much to do with it as the high cost of eggs. At present levels, breakers are not going to store. If you as users are not going to contract for requirements, there will be no eggs put into storage. Another influence on the

cost of eggs is what the Government Purchase Program will be. Last September they bought eggs and thought they had a year's supply, but now they are on the market for more because their estimate wasn't realistic.

Comment: There is one factor that has not been considered in the discussion about the farm flock disappearing and color disappearing. As the small flocks disappear, poultry and egg production goes into larger hands. An operator with 10,000 birds has a small operation today. He is not going to produce eggs at a loss.

In the past, a small flock owner who had 200 to 400 birds would take a loss from April to June, and everybody was able to buy eggs below the cost of production. So the source of supply today is quite different from what it was just five years ago.

Handling Frozen Eggs

Leonard Ballas had these comments on the handling of frozen eggs:

"When ready to be taken out, frozen eggs should be defrosted as rapidly as possible while maintaining a product temperature that is low enough to retard bacterial growth. Bacteria will multiply every 30 minutes in temperature of 70 to 75 degrees. Mishandling a low bacteria product can very easily spoil it.

"You will notice that on your FDA Plant Evaluation Sheet one of the questions asked is: 'Are frozen eggs used without undue delay after taken from the freezer?' The lid should be left on the can during the thawing operation to keep possibilities of contamination down. Egg cans stored on pallets should have air space between them so heat transmission can easily take place.

"Probably the best way to defrost eggs is to have an anteroom with a temperature between 35 and 40 degrees with plenty of air movement. It will take about 48 hours to thaw at this slow process, but it will keep the bacteria count down.

"If you do not have an anteroom, placing egg cans on pallets and spraying them with water, such as a garden spray set on the ceiling swinging back and forth, will defrost the product. Water dripping on the outside of the can will keep it cool. You can very well have frozen eggs in the center of the can while the outside temperature is 85 to 90 degrees if the cans are being thawed in a press room. In this process you are harming the product as you thaw it out.

"Last but not least, there is the water bath. This is the least desirable method,

because you have to handle the can and put it in a tank of water. Many noodle manufacturers merely stack cans in the processing room and allow them to thaw at room temperature, but this is a dangerous practice and it may catch up with you some day."

Question: What about pulverizing frozen slabs of frozen eggs?

Answer: The main problem if you use cans is the possibility of tin shavings. There are tapered plastic packages on the market that would make this method feasible.

Handling Dried Eggs

Robert Eggleston of Henningsen Foods observed that the problems of handling frozen eggs can be eliminated if dried eggs are used. Dried eggs are packed in 150 pound drums or 50 pound boxes and can be packed in batch-size packages. There are economies in handling and storage. Dried eggs received and used within thirty days can be held at room temperature without detectable changes, but if the product has to be held for any appreciable longer time it should be held in cooler storage to slow down or retard the beginning of any off flavor development.

The product is readily available and is a free-flowing agent similar to flour. The same metering systems can be used for both ingredients, and the product does not bridge in hoppers.

Question: Do dried eggs lose color in processing?

Answer: Dried products will lose about 0.2 of a point in the liquid or frozen state.

Question: Is there consistency in the color you obtain from dried eggs?

Answer: There are variations in color, and you pay for what you get. If you specify a Number 3 color, you will get a Number 3 color that is just as uniform in the dry state as in frozen or liquid. If you specify a Number 4 color, you will get a Number 4 color, but you will pay a premium. There is a loss of 0.2 of a point from the product you start with until the final dried form.

Question: What is the most economical color score that could be furnished the noodle trade?

Answer: A Number 1 color would be the most economical, but a Number 3 is the one in greatest demand. A Number 3 is more economical than a Number 4 color.

Question: Since a Number 3 color is cheaper and the fresh egg is easier to handle, how many breakers would have refrigerated trailers and tanks to service the noodle industry?

Answer: The transportation of liquid

eggs to bakeries has been done for years, but a higher price is paid for the product when we come into low periods of production. On the whole, the user has to consider what his in-plant savings are in handling, storage, and market cost of the product.

Pending Legislation

Dan Gardner of Milton G. Waldbaum Company predicted that the next consumer bill to come out of Congress will be for mandatory inspection of egg products. This will cover both intrastate and interstate commerce.

Presently, voluntary inspection applies only to plants in interstate commerce. There are some 86 plants operating under voluntary inspection, with about 50 plants in interstate commerce that do not have inspection. There are about 650 plants breaking eggs who are in intrastate commerce.

The legislation hasn't jelled yet, but the bills are in the hopper. While the Department of Agriculture handles voluntary inspections today, there is a possibility that the assignment might go to the Food and Drug Administration. While three-quarters of all of the eggs frozen in the United States are being broken in plants that have voluntary inspection, the fact that all plants will be required to have such services will affect us all.

It is important that you keep your own house in order, because noodle manufacturers as well as egg breakers will be under much closer surveillance.

Sampling

Hugh Oldach, president of Wm. H. Oldach, Inc., presented these thoughts on the subject of sampling.

For the inspections and certification of egg products to be consistent and meaningful, sampling procedures should be correlated so as to specify the following:

1. What quantity of product constitutes a lot.
2. The number of samples drawn per lot.
3. The size (quantity) of each sample.
4. The technique employed in sampling.
5. How individual samples are composited.
6. The amount (quantity) of sample(s) to be analyzed.
7. The amount (quantity) of sample(s) to be retained for retest or other future reference.

Certain practical consideration limit the extent to which sampling and testing conceivably could be extended. They are the time and labor factors

(Continued on page 10)

Egg Breakers Panel—

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associated with the sampling and the laboratory expense incurred in performing the analytical work. Since costs increase directly with the amount of work done, what then should be the minimum sampling and testing requirements which, while holding the expense to a tolerable level, would yet produce sufficiently reliable test data to allow confident acceptance or rejections of product sampled? Opinions on this question vary; and because they do, and because suppliers oftentimes find themselves dealing with a profusion of customer quality control sampling and test procedures, I believe that the N.M.M.A. would do well to consider establishing a uniform code detailing the methodology to be followed in sampling and analyzing frozen and dried egg products used in the production of pasta products.

Criteria

Lot Size: A day's production of frozen dark colored plain yolk might be as little as 100-200 cans (30 pounds net weight) or as much as a 1,200 can truckload, and possibly more. A truckload comprised of more than one day's production should not be considered a lot unto itself. U.S.D.A. practice is to regard a single day's production as a single lot regardless of quantity. The same rule applies to egg solids production.

Number of Samples Per Lot: The number of samples taken from a specified lot should be proportionate to the size of the lot. When quantities of product per package vary, as is often the case with egg solids, the number of samples drawn should relate to the total poundage of the lot under examination and not the quantity of individual packages comprising the lot.

Sample Size: Uniform amounts of product should be drawn for each sample. Non-uniform sampling of greater or lesser amounts can cause distortion in analytical results of microbiological examinations for reason of the non-homogeneous dispersment of the bacteria present.

Sampling technique: Depending upon who is sampling—and for what reason—quite a variance can be found in sampling techniques employed. If an organoleptic check is being made, or separate tests for salmonella and solids are desired, the method of drilling frozen eggs often varies. Furthermore, the tools used in sampling can differ. With egg solids, the problem of technique is not as critical.

Composite Samples: To avoid excessive analytical work in the lab, but yet in order to obtain the broadest reference of the product under study, many individual samples may be grouped into composites according to a definite sampling plan. Industry practice, again, is quite varied in this respect.

Amount of Sample Used in Testing: Larger samples are usually drawn from the product than are actually subjected to analysis. The amount used for analytical purposes should be maintained at a standard level in order that a history of uniform test results might be obtained.

Amount of Sample Retained For Reference: Inasmuch as not all of the product sampled is used for test purposes, the remaining portion is reserved for future reference, such as retesting. This portion of sample drawn should at least be equivalent in size to the amount used in the initial laboratory work.

Surveillance vs. Certification

It is important to distinguish the difference between surveillance and certification sampling and testing as performed by the Federal agencies—the F.D.A. and the U.S.D.A.

Surveillance: As the name implies, such sampling and testing of product is done simply to assure that product moving out of a plant and into commercial channels is wholesome and/or salmonella negative. All of the F.D.A. work is of a surveillance nature, and depending upon what the F.D.A. is most interested in learning, their sampling technique can be varied accordingly. The U.S.D.A. surveillance program, however, is specifically geared to salmonella surveillance, and an elaborate sampling plan based on plant experience has been developed whereby the better the experience the more infrequent the sampling and testing is permitted to be.

Certification: The Food and Drug Administration does not have a certification program. It is not their function to serve as a certifying agency. The express purpose of this agency is to protect the consuming public from hazardous foods and drugs. Consequently, such investigative testing as is performed by F.D.A. is done solely for its own purposes.

To underscore this point, there was an occasion many years ago when Dr. Brinton, one of the early F.D.A. chief administrative officers, became involved in an issue concerning the quality of certain frozen eggs. Because there was some dispute concerning the pack, he was asked to inspect and certify

several lots in storage in a public warehouse. He promptly dispatched an inspector to sample the eggs in question, but when asked if he would issue a certificate of approval, he observed that he would not, but that if the investigation resulted in the eggs being found disapproved he would "libel and arrest the product." In like manner, a policeman is not authorized to issue affidavits stating that we keep the peace, but he does have the authority to arrest us if we don't.

The U. S. Department of Agriculture does have a certification program with definite regulations governing all of the points previously enumerated. Requirements for this program are more stringent than for the surveillance program.

It is a fact that about 80 per cent of all eggs being broken for freezing and drying are produced in plants operating under continuous U.S.D.A. resident inspection. Therefore, we believe the macaroni and noodle industry ought to give close attention to the procedures established by the U.S.D.A.

Summary—U.S.D.A. Sampling Procedures

Surveillance: Frozen. A minimum of 25 grams of liquid taken from a single container at time of fill—one sample (25 gm. min.) per lot (one day's production)—minimum of one random lot in every four consecutive lots to be tested. If a positive salmonella is found, each lot must be sampled in accordance with AQL Sampling Plan (Acceptable Quality Level) until experience has improved and plant may go back to one-in-four basis again.

Dried. A minimum of 100 grams is drawn from a random package out of each day's (lot) production. Twenty-five grams are actually used in the analytical work with the balance being held for retest if needed. If a positive salmonella is found, sampling proceeds on a drum by drum basis.

Certification: Frozen. "When samples are requested for laboratory analysis, select the square root of the packages in lots of 1,500 or less, and 3 per cent in larger lots. In cases of other size packages, select the number on the basis of 30 pound packages, as per Section 55.6 (b)."

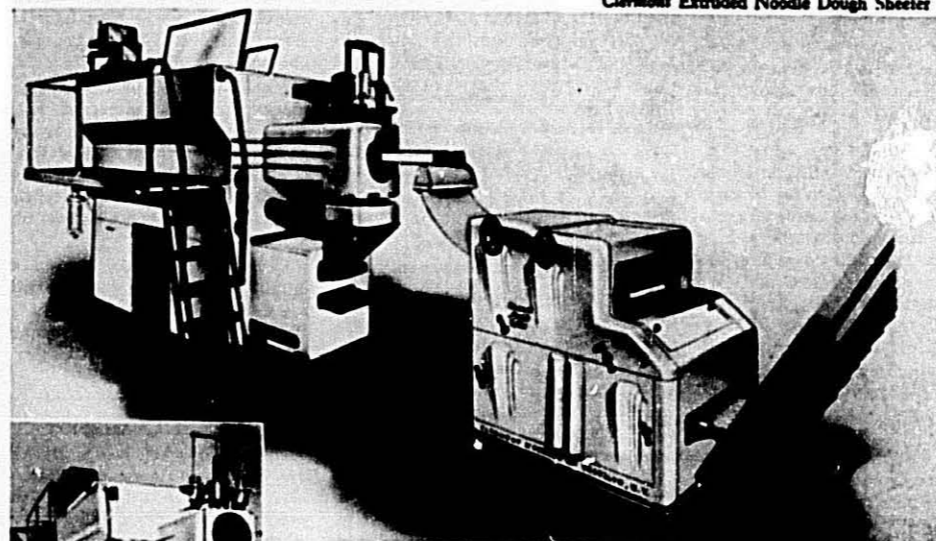
Dried. Basically the same as for frozen (above) except that for sampling purposes a lot can be no more than 15,000 lbs.—can sample no less than four (4) containers per lot—the containers sampled to be taken at random.

Technique. Samples of frozen product are comprised of all the drilled shavings of a single diagonal drilling from one

(Continued on page 12)

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Egg Breakers Panel—

(Continued from page 12)

side at the top of the can (away from the "hump") to the opposite side at the bottom. A one-half inch (½") drill is used.

Samples of dried product are taken from six to eight inches beneath the top of each container sampled.

Summary—F.D.A. Sampling Procedure

Both the F.D.A. and U.S.D.A. follow the same analytical procedures in their laboratories and use the same 25 gram sample sizes for test. However, their sampling techniques do vary. For one thing, the F.D.A. uses a one-inch (1") high speed auger for drilling purposes (as opposed to U.S.D.A. ½" drill). They normally take a half-pint of drilled shavings for a sample of frozen product and follow a package sampling plan as follows:

No. of Pkgs. in Lot	No. of Pkgs. Samples
20 or less	All
20-60	20
60-100	40
100-200	50

In making organoleptic checks, the F.D.A. drills down through the center of the hump, this being the last of the product to freeze and therefore the most likely portion of the egg to show evidence of spoilage if such evidence is to be found.

In other instances when the F.D.A. inspector is obtaining drilled shavings which are to be forwarded to a laboratory for a salmonella check, he will make three vertical drillings equidistant one from another and at points midway between the center and the side wall of the can. While this technique is satisfactory for bacteriological examinations, it is not as consistent a method for giving readings on solids. It is for this latter reason that the U.S.D.A. favors the single diagonal drilling technique. The diagonal drilling provides a better averaged distribution of the solids in the can, but it is most important that all shavings be used; otherwise the sampling of the can—being incomplete—will be self-defeating.

Will Success Spoil Egg Farmers?

Egg prices are relatively high now. And the egg industry is wondering whether farmers will respond to good prices by indulging in over-production, or if they will hold the line and keep prices up, reports Wall Street Journal writer Eugene Sorrells.

In mid-April a Department of Agriculture report said that producers of egg-type chicks, reflecting fears of lower egg prices later this year, have cut production. 53,000,000 chicks were hatched in March, down 2 percent from the like month a year earlier. This was the first time since last June that output fell below a year earlier. USDA noted there were 9 percent fewer eggs in incubators on April 1, indicating a further drop in chick production.

Up until now monthly increases have ranged from 5 to 25 per cent above a year ago, indicating a trend that would create egg surpluses and pull prices down.

First Show of Judgement

Leroy A. Wilhelm, president of the Poultry & Egg National Board, says that the breaking of the upward hatching trend "show the industry is using a little caution and maturity of judgment for the first time." But Mr. Wilhelm isn't passing out any good judgment awards yet. "Many people have some reservations about the report. But a switch from 13 per cent more hatchings in February to 2 per cent less in March is quite a turnaround. There have been few times that this kind of a change has taken place in the Spring."

Maurice Stein, president of United Egg Producers, a federation of egg cooperatives, which he says represents 35 to 40 per cent of U. S. egg production, notes that the hatch rate has been tremendous for several months and these chicks are on their way to egg-laying maturity. He adds the laying flock is still quite high.

Recycling by Molting

One reason for his assessment is that more egg farmers are stretching the egg-laying life of their chickens through a recycling process of force-molting. Molting is a natural phenomenon wherein a chicken loses its feathers and stops laying eggs for a month or so. Most chickens start producing at five or six months and are slaughtered 12 to 15 months after that.

Now, however, producers are increasingly inclined to induce molt, sometimes by removing the water supply for a day and feed for three or four days. The birds come back into production after six to eight weeks and lay for nine to ten months. In some instances chickens have been force-molted several times, although output and quality tend to suffer with successive moltings.

California, biggest egg-producing state, reports that in the six months ended in March, 31 to 36 percent of the layers on hand had been or were being force-molted. There are economic

reasons for recycling, poultry experts say. It's cheaper than buying new birds, and is especially attractive in periods of depressed prices or tight credit when many farmers cannot afford new chicks. Mr. Stein says that operating costs of recycling are lower than liquidating a flock and readying cages for new chickens.

Some observers believe that some chicks from the increased hatchings were used to replace old layers that had been culled. Because of this, they say, laying flock increases won't be as great as expected. A high hatch may not necessarily mean a big net addition to the laying flock.

Others note that the rising hatchery output late last year was in contrast to a general cut-back in hatchings in late 1967. In this light, the percentage increases in hatch statistics are less ominous.

Egg Market Comments

The egg market last year declined five cents per dozen after Easter. In 1967 the drop was 5.5 cents, and this year prices fell from 47.5 to 41 cents, off 6.5 cents.

The market seems to have leveled off on the consumer grades for the present, according to the V. Jns. Benincasa Company trade letter, but no such decline in price has come for the egg breakers. The position of breaking plants has not been profitable due to the decline in selling prices ahead of a proportionate decline in fresh egg costs. It is too soon, however, to conclude that the market has settled. Production will increase, and prices should tend to decrease.

Plenty of Eggs

The International Egg Commission reports that nine out of eleven countries are facing over-production of eggs this year. United Kingdom's production is up, and they will have a surplus all year. South Africa has a 21 per cent increase, and they are now producing egg solids. The Netherlands estimates five per cent increase, and Norway anticipates over-production this Spring. West Germany has a sizable surplus as does France, Denmark, and Belgium. Canada is the single exception, predicting a six per cent decline in production. There is already importation of dried eggs into the United States.

The Chicago Mercantile Exchange was organized in 1919 to provide a national market for trading in cash and future contracts in various commodities.

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Dehydrated Meat and Poultry Items

Robert Eggleston of the Technical Services Department, Henningsen Foods, Inc., in Springfield, Missouri, told the Seminar how the company got into the business of dehydrating meat and poultry items.

Henningsen felt they were well versed in freeze-drying as well as air-drying, and were looking for some way to utilize their equipment more fully. Egg drying was more or less a seasonal business, and it still has some seasonal variations.

Essence of Chicken

First efforts which led to the development of meat products was a search for the essence of chicken. Mr. Eggleston observed that "we cooked a lot of chicken, but we never did get the flavor. So we resigned our sights and developed cooked chicken meat."

Last year production approached about a million pounds of dry meat products. The products come in a variety of sizes and shapes. Henningsen has produced spray products which are used mainly in sauces and soup bases.

The chunk products of chicken are air dried. They are not really diced chicken. The process is to cook the chicken, bone it, and then run it through a meat grinder. In producing dry diced chicken, there is a problem of case hardening on the outside of the product which makes it very ununiform. It doesn't dry well and consequently doesn't store too well. By grinding the meat and then forming it into chunks, it is porous enough to dry quite rapidly. Henningsen has a patented process on the method, so the products can be air dried and have a shelf life expectancy of some eighteen months.

Other products produced include beef, chicken broth, rendered fat and powdered fat. One of the by-products which has become an important flavoring agent is made from chicken skin which is freeze-dried. The U. S. Department of Agriculture has given Henningsen permission to sell their product under the label of "Natural Chicken Flavor," so the product does not have to be called chicken skin. This is the closest thing to the essence of chicken that the company has been able to develop. In addition, they process turkey, ham, and fish.

Another line of products includes imitation sour cream in two varieties: thick and thin. The thick cream has a place in a dry mix which is to be reconstituted and used as a dip for snacks. The thin cream is used primarily "as is" for flavor and texture.



Robert M. Eggleston

Present Users

Customers presently include such people as Golden Grain, Grass Noodle Company, Uncle Ben's Rice, and other packers of dry soups, sauces, and casseroles.

The powdered products are used sometimes as flavoring ingredients, and while the volume isn't very great as yet, they are gaining in popularity.

Henningsen Foods has never been involved in retail marketing, so they do little work in the actual formation of recipes and new product items. Mr. Eggleston observed however that in looking at the Standards for macaroni products, he had noted that vegetables are a permitted ingredient, although this has been a small volume item. There is the possibility, he suggested, that dehydrated meat products could be incorporated into pasta with Food and Drug Administration approval for test-marketing. Additions of dehydrated meat or poultry would enhance the protein content and quite possibly could be developed into some interesting flavor combinations.

Scrambled Egg Mix Purchases

The U. S. Department of Agriculture bought 1,215,000 pounds of scrambled

egg mix on April 11, to bring total purchases to that date to 2,484,000 pounds, at a cost of \$2,496,000. Some nine plants are involved in producing the dried scrambled egg mix, and the amount of whole egg liquid required is certain to have some effect on the market, as these plants start production and delivery of the product.

Contrary to most observers that the purchase of scrambled egg mix will not steady the market prices of fresh eggs, is the fact that these purchases are removing from normal channels a considerable quantity of whole egg liquid that would have been moved in the usual sales pattern. In this type of situation, the supply and demand factors will determine just how much the U.S.D.A. will mean to the overall egg prices. Increased warehouse storage rates, higher interest rates, and the forecast of heavier production this Fall will have a direct influence on the removal of egg products to warehouse storage.

Egg Products Production

Production of liquid egg products (ingredients added) during March was 42,857,000 pounds, according to the Crop Reporting Board. This was 12 per cent above the preceding month but 32 per cent below a year earlier. January through March production of liquid egg totaled 116,280,000 pounds, 30 per cent less than the same period of 1968.

Liquid egg produced for immediate consumption during March was 6,657,000 pounds, 34 per cent more than a year earlier. The quantity used for drying was 12,041,000, a decrease of 15 per cent from March 1968. The quantity used for freezing totaled 24,159,000—a decrease of 34 per cent from a year earlier.

Egg solids production totaled 3,070,000 pounds during March. This was 3 per cent above the preceding month but 39 per cent below a year earlier.

Government Egg Reports

U. S. Cold Storage Report		April 1, 1969	April 1, 1968
Shell Eggs	Cases	55,000	82,000
Frozen whites	Pounds	6,165,000	9,170,000
Frozen yolks	Pounds	13,968,000	20,394,000
Frozen whole eggs	Pounds	29,853,000	49,295,000
Frozen unclassified	Pounds	1,601,000	2,241,000
Frozen Eggs—Total	Pounds	51,587,000	81,100,000
Crop Report (48 States)		March 1969	March 1968
Shell eggs produced		5,975,000,000	6,126,000,000
Average number of layers		312,081,000	319,790,000
Average rate of lay		19.15	19.16
Layer Reports:		April 1, 1969	April 1, 1968
Hens and Pullets of Laying Age		312,091,000	318,964,000
Eggs Laid per 100 Layers		62.3	62.6

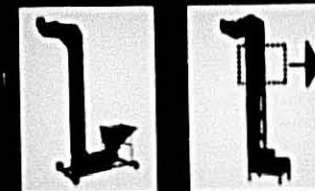
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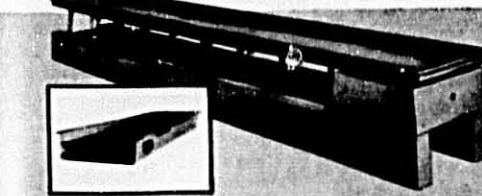
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BY PLAN HOOK

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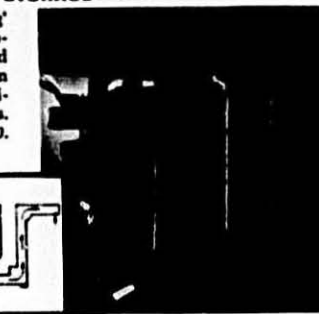
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Dad's Special Dinner

ONE of the busiest days of the year in most American restaurants is Mother's Day. Everyone wants to honor Mother, so she is taken out to dinner. Father's Day presents a different picture, as Dad is catered to at home with a very special dinner.

This year you might give some thought to a leg of Milk-fed Spring lamb . . . roasted to the slightly pink stage . . . and brought to the table surrounded by tender egg noodles which have been tossed with pimento and peas for flavor and color contrast.

Today's new lamb is heavier, meatier lamb. It has more meat in relation to bone and is the kind of meat men enjoy. With a zippy mustard coating to brush over it you'll see what a handsome glaze it acquires. To serve with it, nothing beats noodles . . . long a favorite with men because of their heartiness and satiety value. And then, of course, so many other good ingredients combine well with noodles that it's always a pleasure to fork into them. Yes, lamb and noodles make a prize-winning combination for Dad's special dinner.

Herb-Mustard Glazed Leg of Lamb (Makes 6 to 8 servings)

- 1 leg of lamb
- 1/2 cup spicy brown mustard
- 1 clove garlic, crushed
- 1 teaspoon rosemary leaves, crushed
- 2 tablespoons salad oil
- 3 tablespoons dry white wine or water

Place lamb on rack in shallow roasting pan. Roast in 325° (slow) oven 30 to 35 minutes per pound or until meat thermometer registers 175° for medium doneness. Meanwhile, blend remaining ingredients and brush occasionally over the entire leg of lamb during the last 1 1/2 hours roasting time. Serve on a bed of Calico Noodles, and pass remaining herb mustard with it.

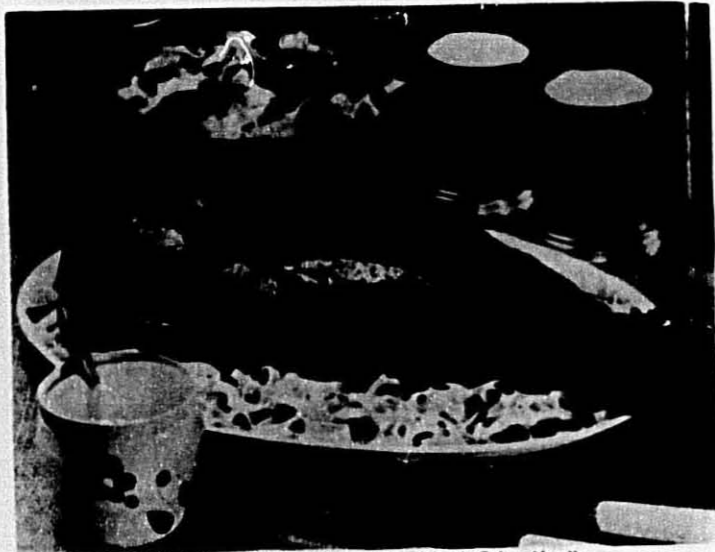
Calico Noodles (Makes 6 to 8 servings)

- 1 1/2 tablespoons salt
- 4 quarts boiling water
- 12 ounces medium egg noodles (about 9 cups)
- 1/2 cup butter, melted
- 1 jar (4 ounces) pimientos, drained and diced
- 1 package (10 ounces) frozen green peas,* cooked according to package directions.

Add salt to rapidly boiling water. Gradually add noodles so that water continues to boil. Cook uncovered, stirring occasionally, until tender. Drain in colander.

In same pot in which noodles were cooked, toss noodles with butter, pimientos and peas.

* Or use 2 cups cooked fresh peas.



Herb-Mustard Glazed Leg of Lamb with Calico Noodles

Seduction in the Supermarket

"The successful supermarket impulse item stops the shopper in her tracks, makes her salivary glands water, tantalizes—and impels her to add it to her shopping basket."

The criteria are cited by Walter P. Margulies, noted marketing and design consultant, president of Lippincott & Margulies, Inc., in the May 5 issue of *Advertising Age*.

"Customers are fickle and have a high awareness quotient for the product that is new, looks new, or promises something different. Generally, shoppers do not directly or knowingly search out impulse items. But they will respond when the package assumes that essential extra communications responsibility," he writes.

Fresh Look

To give customers the sense of newness that can reawaken interest in a product, many companies regularly design their packages every two or three years. The challenge, according to Mr. Margulies, is to create a fresh look without making too drastic a change lest the shopper conclude that it is no longer the item she has long bought and liked.

Color, he notes, properly handled, can provide high visibility, especially in bulk displays. Another tantalizer is the use of eye-catching, euphonious names such as Lickity Splits or Potato Piffles that identify the product and simultaneously evoke savory images.

"Whatever the impulse product is, whether cookies, smoked oysters or an icy bottle of beer," concludes this expert, "its design and marketing must enable it to communicate its desira-

bility in a way that counters resistance and precipitates purchase."

Cattle Better Fed Than Many People in U. S.

One-half of the households in the United States have diets that fall below the established nutritional standards set for a "good" diet, and 20% of our households have diets that are rated "poor," according to a recently published report by the United States Department of Agriculture.

Walter T. Rodman, Manager of the California Beef Council, stated that: "This situation is particularly alarming when you realize that, although we are the best fed nation in the world, our dietary levels, from the standpoint of nutrition, have declined over the last ten years. In 1955, 60% of our households had good diets and only about 15% were rated poor."

"Human nutrition has much to gain from the knowledge and techniques developed by livestock feeders," Rodman continues. "Cattle coming out of California's feedlots have been fed rations that were scientifically compounded and, through the use of computers, the nutritional values of the ingredients in that ration were measured and evaluated with precise accuracy. This kind of attention to detail pays off for both the cattleman and the consumer. California fed beef, for instance, has 24% more protein, 36% less fat, and 16% fewer calories today than it had a generation ago."

"In humans, as in livestock," Rodman concludes, "it is not how much you eat

(Continued on page 26)



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A Nutritional and Technological Report on Defatted Wheat Germ and Casein as Protein Supplements for Pasta Products

by Roland S. Shumard, Consultant, West Chester, Pennsylvania

Protein

Protein is essential in the nutrition of both plants and animals because it forms an indispensable part of every living cell. Many other essential components of the living organism, such as enzymes, hormones and antibodies, are proteins. The word protein is derived from the Greek word "proteios" meaning primary. Protein is manufactured by plants through the mechanism of photosynthesis, or by micro-organisms such as yeast. Animals, including man, then obtain their essential protein needs from plants, or yeast either directly, mainly from cereal and vegetable foodstuffs, or indirectly in the form of milk, meat, fish, and egg products.

Proteins from different plant sources can vary greatly in their chemical makeup and their nutritional value. This is due to the fact that food proteins are commonly composed of 18 to 22 chemical building blocks called amino acids, although a total of at least 24 amino acids have been identified but some of these are not frequently found. Myriads of different protein forms occur in nature depending upon the ratio of the different amino acids present to each other, which of the 24 acids are contained in the given protein, and the sequence of chemical linkage of one amino acid molecule to another. All proteins are not necessarily digestible foods such examples being hair, silk, horn and feathers.

Amino Acids

Nutritionally, the food value of a given protein depends primarily upon the types and relative amounts of the amino acids it contains. Carefully controlled animal feeding tests show that certain proteins will maintain normal growth and efficient maintenance of tissue health in young and adult animals. Other proteins, particularly most plant proteins, cannot accomplish this.

The animal body can either manufacture, or substitute for, some of the 20 odd amino acids from the carbon and nitrogen in normal foods. These are called dispensable or non-essential amino acids. However, there are eight amino acids absolutely necessary for growth and tissue health which cannot be manufactured, or substituted for, in



Roland S. Shumard

the human body. All must be supplied completely formed and ready to use in the food. These are the essential or indispensable amino acids, and are the ones which concern us in protein supplementation. They include lysine, threonine, tryptophane, methionine, leucine, isoleucine, phenylalanine, and valine. Arginine and histidine are classified non-essential, but have been indicated to be essential for growth, but not during adult life.

Proper Proportions

A second important point is that these eight essential amino acids must be present in significant amounts and in proportions similar to those found in body tissue. Proportions are as important as the amounts. The Food and Agricultural Organization of the United Nations has established a provisional pattern of desirable ratios for the eight essential amino acids. Such a protein product is called a balanced or complete protein. Animal protein foods such as milk, meat, fish and eggs are complete. Gelatin is the only animal protein which fails to meet these requirements since it is low in tryptophane, threonine, methionine, and isoleucine.

Same Time

A third point is that these essential amino acids must be present in proper proportions at the same time. The body will not store amino acids until one or more of an essential acid in deficient supply comes along. Some protein, though it may analyze to have a complete, well-balanced amino acid makeup, can be difficult to digest and be an inferior nutritional protein source. This can only be determined by controlled animal feeding tests. Such tests used to determine the relative quality of a protein, are conducted on growing rats and the result is conventionally expressed as the protein efficiency ratio or P.E.R. (obtained by dividing the weight gain for four weeks by the weight of the protein consumed). It can also be expressed as protein efficiency (obtained by dividing P.E.R. of the test material by the P.E.R. of casein). Casein, fed at the same nitrogen level in these tests, is used as a control reference standard with an assigned adjusted P.E.R. rating of 2.5, or a P.E. of 100%.

Animal feeding studies show conclusively that protein deficiency in a cereal diet is due to quality and not quantity. Stated another way, malnutrition among cereal-consuming peoples, whose animal protein sources are limited, is not due to an intake of too little protein, but rather due to the intake of inferior quality protein. This poor nutritional quality in cereal protein has been amply shown to be the result of a deficiency in one or more of the essential amino acids.

Extensive rat feeding studies reported in publications by E. E. Howe et al. of the Merck Laboratories over the period 1964 through 1968, demonstrate that the leading cereal grains—wheat, corn, barley, rice, millet, and sorghum are all greatly deficient in lysine. Contrary to what might be expected based on amino acid composition data from chemical analysis, the second limiting essential amino acid was threonine except for corn which was second limiting in tryptophane. Howe's work showed that the protein of these cereal grains, as measured by rat feeding, can be made approximately equal to casein by the addition of lysine and threonine, or in the case of corn, by lysine and tryptophane.

Concerning Wheat

Now let's address our discussion to wheat for this is the grain which specifically concerns us. Despite the fact that more wheat is grown, world wide, than any other food grain, with the possible exception of rice, it unfortunately possesses, nutritionally speaking a relatively poor quality protein. This quality problem is compounded in the wheat flour milling operation which removes bran and germ—both containing protein fractions which are much richer in lysine and threonine than the gluten protein in the endosperm. Wheat flour, farina, and semolina, are, as you know, largely endosperm.

Howe has published, based on his work and others, that the approximate P.E.R. of whole wheat is 1.3, but that it drops to 0.7 when wheat is milled into wheat flour. Translated to protein efficiency whole wheat would have a protein nutritional value of 52% compared to 100% for reference casein, and white flour would have a P.E. of 28%. Studies reported by Hoskins in 1960 on spaghetti, made from 100% #1 semolina showed a protein efficiency of 27.6%. This correlates well with Howe's data.

Wheat protein can be fortified with lysine and threonine by the addition of pure amino acids, or by adding protein concentrates rich in these essential amino acids. Some form of animal protein, such as casein should be included in plant protein fortification since it has been found that the nutritive value of the combined proteins are superior to either individually when ingested in the same proportions but at different times. Protein concentrates, such as defatted wheat germ and casein which we will discuss, also contribute other nutrients in the form of additional amino acids, vitamins, and minerals. Supplementation by this method is greatly preferred over fortification with pure lysine and threonine alone. Further, although pure L-lysine is now available at prices economically reasonable, threonine is not so available. Use of natural protein supplement also avoid any possible toxic effects which some amino acids produce when fed at levels two to five times greater than the body requirement.

Basic Cereal Foods

Baked products including white bread, and macaroni products including spaghetti and noodles, represent relatively low-cost important staple basic foods in the U. S. diet and are mainstays in the food fare of the middle low income group. Other cereal foods have adopted protein supplementation already.

Modern bread making calls for the addition of an industry-recommended level of 6% non-fat milk solids based on the flour weight. In addition, 2.5% compressed yeast on the flour weight contributes an excellent quality protein. Though these protein-rich products are added primarily for functional reasons, this protein fortification results in a bread products offering a nearly adequate amino acid balance. Feeding studies on rats show modern bread will meet the protein requirements for growth.

Many breakfast foods are enriched with protein supplements such as casein and wheat germ, or are formulated from two or more different plant proteins which complement each other nutritionally.

Pasta Products

Looking at pasta products, we find noodles enriched with egg protein. However, with the exception of two major producers now offering high protein products, most macaroni and spaghetti are not protein supplemented today. As stated earlier, macaroni products are, as is white bread, important basic staple foods in the United States. A recent survey, authorized by Congress, and conducted by the U. S. Public Health Service, reported early this year evidence which would support the conclusion that ten million Americans are victims, if not of severe hunger, at least of malnutrition. Figures have already been issued stating that there are twenty-seven million poor people in the United States who need food assistance.

In addition to the minority group who are unable to afford proper levels of more expensive animal protein to accompany and fortify lower cost cereal foods, there exists malnutrition among the more affluent society due to poor food habits of the individual. Obesity is the most prevalent manifestation of malnutrition in this case.

It is recognized as with white bread, that spaghetti and macaroni products are usually served with animal protein supplementation such as meatballs, cheese, etc. Among the poor, plain macaroni products are often cooked and eaten without any additive except tomato sauce. Improvement in the essential amino acid balance by proper protein supplementation certainly warrants serious consideration. Present actions in Washington, such as by Senator McGovern's Senate Select Committee on Nutrition, indicate that nutritional improvement in staple foods is becoming a real political issue. In effect, Washington may be creating a market demand for protein enriched products.

About Malnutrition

Much has been written over the past one to two years, both in the popular press and in technical and trade journals, on the subject of malnutrition in the United States, a nutritional problem either unknown or ignored until recent times. This domestic problem was well summarized in the lead editorial entitled "Malnutrition, Learning and Behavior" contained in the April 4th issue of *Science* less than two weeks ago. It was written by Philip Abelson, editor of *Science*, which is the official organ of the A.A.A.S. (American Association for the Advancement of Science).

I quote selected excerpts apropos of protein fortification of basic staple foods: "Children reared in poverty tend to do poorly on tests of intelligence. In part this is due to psychological and cultural factors. To an important extent it is a result of malnutrition early in childhood. . . . It seems likely that millions of young children in developing countries are experiencing some degree of retardation in learning because of inadequate nutrition, and that this phenomenon may also be occurring in the United States."

"In some countries malnutrition involves a deficiency in calories, proteins and vitamins. Usually lack of protein is the most serious problem, but vitamin deficiencies are also important. Throughout much of the world, grains are the principal sources of protein. These do not contain a full complement of all the essential amino acids—lysine is usually in short supply."

"Many individuals, even in the United States, who have adequate caloric intake primarily from low cost may be malnourished. This possibility has become a matter of increasing concern to the federal government."

"Desirable objectives for a U. S. food program have been described by Dr. Aaron M. Altschul of the Department of Agriculture: (1) no one must go hungry; (2) hunger or malnutrition must not be a deterrent to economic development; and (3) the American diet must provide for optimum health throughout life." (Testimony before the Senate Select Committee on Nutrition and Human needs, December 18, 1968.)

"These are laudable goals, but they will not be easily attained. Enough food can be provided, but that is not the whole answer. The consumer must choose to eat nourishing foods. In part the problem can be met by enriching commercial food products. For example, cereal foods such as wheat flour or products made from it are markedly

(Continued on page 26)

Join The IDEA SAFARI

National Macaroni Manufacturers Association
65th Annual Meeting

THE San Diego area offers convention visitors much to see and much to do along with ideal convention facilities at del Coronado Hotel.

Delegates can take best advantage of these attractions by arriving early, before the convention business starts Monday morning, July 14, and staying after its conclusion with the Board of Directors Meeting on the morning of July 17.

San Diego is the best of California with a dash of international flavor added for zest. It's actually just a short fifteen minutes away from the del Coronado Hotel to Tijuana, Mexico. Enjoy everything from duty-free shopping to the excitement of racing, bull-fights, and jai alai on the week-end, all in foreign country atmosphere.

San Diego offers a wonderful world of water, with two great bays and seventy miles of sandy beaches. Take your pick: sailing, water skiing, swimming, surfing, fishing, skin diving, sunning. Or venture out to the open sea where the Pacific Ocean is alive with fighting game fish.

Enjoy the excitement of San Diego Zoo, with the world's largest wild animal collection in 125 acres of lush tropical setting, and beautiful Balboa Park.

And visit Sea World, with performing dolphins, rare captive killer whale, beautiful sea maids, and Japanese pearl divers.

Or take your pick of 64 year-round golf courses.

Tentative convention plans call for a Safari of Ideas, ranging from on-the-spot market research from a consumer panel to further pursuance of distribution problems from the grocer's viewpoint to plans for the late summer Spaghetti Safari to durum country for food editors from around the country.

A highly interesting and educational presentation on The Information Explosion will be given by Computer Sciences Corporation, with supplementary comments to be made by Robert I. Cowen, Jr. on how the small macaroni plant office can utilize computer data while selling time on equipment.

San Diego is the site of a large Navy base. Lieutenant Commander Dean S. Lane, officer in charge of the Navy Food Management Team, has been invited to discuss menu planning and use of macaroni products in Navy chow.

A special luncheon to which the wives will be invited will feature Joe Beagin, president of the International Society of Girl Watchers, who will discuss "How to Watch Girls Successfully."

The traditional social events will feature an Italian Dinner Party one night and a Dinner-Dance the following night.

San Diego will be celebrating their 200th anniversary. A booklet with the Official Calendar of Events can be obtained for one dollar from the Official 200th Anniversary Souvenir Guide, P. O. Box 2669, San Diego, California 92112.

Additional information on special events can be obtained from Miss Maxine Jones, San Diego Convention and Visitors Bureau, 330 A Street, San Diego, California 92101.

United Airlines had a special San Diego issue in February, 1969, Vol. 13, No. 2. This has some interesting background and lovely pictures of sights to see in the area.

Better Homes and Gardens in March, 1968, had suggestions for a family planned auto tour of San Diego and Mexico, copies of which we will be glad to send you upon request.

Hotel Del Coronado — Coronado, California 92218

Sunday, July 13
Trip to Tijuana
Bull Fight
Mexican Shopping
Jai Alai Games

Monday, July 14
State of the Industry
President's Message
Consumers Panel
Girl Watchers Luncheon
Ice Breakers Party

Tuesday, July 15
Management Matters
Computer Sciences
Manufacturers Panel
Italian Dinner Party

Wednesday, July 16
Marketing Mix
Grocers Panel
Macaroni as Navy Chow
Spaghetti Safari Plans
Election of Officers
Dinner-Dance

Thursday, July 17
Board of Directors Meet



Make room reservations now!

Meanwhile, make your plans now to attend the 65th Annual Meeting of the National Macaroni Manufacturers Association, and write to Vincent Lyons, Front Office Manager, Hotel del Coronado, Coronado, California 92218, for room reservations.

Special Convention Rates

Singles	- - - -	\$16
Doubles	- - - -	\$19
Ocean front lanais	- - - -	\$30
Parlor Suites	- - - -	\$40
Child in same room as parents	- - - -	\$ 5

★ ★ ★

MARKETING NEW PRODUCTS

by Thomas S. Pinkerton, Account Executive, Leo Burnett Co., Inc.

MY business is communications—the communication of your message to the consumer, and what this really boils down to in the final analysis is that my business is increasing sales volume and increasing profitability. The opportunity that faces you gentlemen here today is that of getting in on the ground floor of the real movement of the future. The opportunity can be identified very briefly as protein enrichment of your current products, and protein enrichment of new products.

Why Protein Enrichment?

Why do I feel that this opportunity is specifically protein enrichment? A study done by one of the giants of the food industry, a very broad range study, indicates that most women can recognize the best and worst sources of protein. This study further indicates that vegetable protein is identified by only 75 per cent as many women as animal proteins. It appears that the animal protein industry has done a better job of educating the consumer than have the vegetable protein industry.

Women in this study were asked, "Do you believe that your family needs more protein?" In response to this key question, 21 per cent of the households interviewed indicated that they needed more vegetable protein. Beautiful! Practically a quarter of the population. Only 12 per cent indicated that they wanted more animal protein, and this was directly related to a fear of cholesterol and its relationship to heart disease.

If you take the 50,000,000 households in this country and then take 21 per cent of them, you have 10,500,000 households who are already disposed to your products with protein enrichment wanting more vegetable protein in the products. If you could take your price to the retailer at 25 cents per package, per retail unit, put this into those 10,500,000 homes once a week, you would have an additional potential sales volume right now of \$136,000,000 a year. Additional potential sales volume of \$136,000,000, only among those households who have already shown a predisposition to protein enrichment of vegetable protein products! If you are aggressive enough and effective enough to communicate your message beyond those 10,000,000 homes that are already predisposed to your product, you could probably double that, you would have practically \$300,000,000 of additional



Thomas S. Pinkerton

potential sales volume. The profit potential there is obvious to all of us.

Looking further at attitudes towards foods, from this same study of one of the food giants, who will have to go unidentified: Foods regarded as especially bad and undesirable nutritionally are coffee, fried foods, thick gravies, cake, pie, pancakes, spaghetti and macaroni. Your products have a poor image.

Spaghetti's Poor Image

The women were asked what foods they thought were especially good nutritionally for them? They had a full spectrum of foods, 38 items. Spaghetti and macaroni ranked 34th, practically at the bottom of the list of good foods. Conversely, they were asked what products do you think are not especially good for you nutritionally? Spaghetti and macaroni ranked seventh. Near the bottom of the list in good foods, near the top of the list in bad foods. You've got a big job to do.

You say, we enrich our spaghetti and macaroni. Sure you do, with B₁, B₆, Niacin and Iron, but that's not protein. It is necessary, but it is protein enrichment that is important right now.

Your product image is currently one of a nutritionally inferior product. Your sales volume last year was static for the first time, and it is a rather alarming situation. Part of this is due to the increased impact of good marketing by the rice and the potato people. But, I think, it goes further than that—I think consumers are becoming more aware of nutrition. They know that nutrition is important and that they need to watch it more carefully. So, I'm not

saying that they are all going to rice and potatoes because that isn't a good trade, but they are going to nutritionally enriched foods.

Up Grade Products

The challenge is to up-grade your product and the consumer image of your product. Why do I feel that this can be done through protein?

When you look at the communications that the housewife get today, they are overwhelmingly protein-oriented. Vitamins are passé. Everybody can get vitamins. The women's magazines are filled with the glories of protein. Fats are shunned by the cholesterol mob. Carbohydrates are anathema to the weight watchers. Vitamins and minerals are available in foods, and very easily available from artificial sources and pills. That leaves protein. Here is what Science Digest says: "This country is on a protein kick." If you don't take advantage of it, it's just going to go by you, because other people will take this new emerging market away from spaghetti and macaroni.

Even the American Heart Association in its booklet, indicates that cereal protein belongs in reducing diets, despite the carbohydrate content of the product. On a 1200 calorie diet they recommend four servings of cereal protein a week. In their 1800 calorie diet they recommend seven servings a week. That's a lot of volume.

One more example will do. The lead paragraph in the Better Homes and Gardens Diet Book chapter on protein says: "Protein is so famous nowadays and the indispensable element in safe and sure diets that the word is bandied about very glibly." I contend that when a word is bandied about, when it is covered as thoroughly as it is every month in the women's magazine, or in the women's section of the newspapers these women know and respect protein.

The Market

You could logically ask, "Who do we talk to about protein?" You talk to women, because women are the purchasing agents for their households. And you talk to women in middle and lower income households, because these are the people within whose diet spaghetti and macaroni play a large part. How do you talk to these women about protein? Do you tell them about biologically complete protein? No. Do you tell them about the essentials of amino acids? Don't bother. Do you tell them

that cereal protein requires the addition of lysine and this can be made available through milk protein? No. They don't need this information and they don't want this information. What you want to do is to talk to these lower and middle income households in terms of their kids. These households have big families, bigger than in the upper income brackets. They have a limited budget, so spaghetti and macaroni are important parts of their diet. Kids are big consumers of spaghetti and macaroni products.

You want to talk to these women in emotional terms. These women consider themselves guardians of their households, and in this role they are extremely interested in anything which helps them perform their job better for their homes. The TV and movie magazines completed a survey recently of low income households. They found out that the health of the kids is the number one concern of the lower income housewife, and the old man's health comes shortly thereafter. Health is her primary concern; but if you talk to them in scientific terms, they will turn you off. You threaten their role as being the expert on health in their own household if you tell them a lot more than they can understand. The most complicated word that you can ever use in your communications is "protein."

What Media?

Where do you talk to these people? Essentially, you talk to them on TV, because they are big TV watchers. They are not big readers of the printed page.

How do you talk to your consumers? First off, let me say that when I talk about communicating I'm not talking advertising. I'm talking about advertising as one portion of that communication job. You also have packaging, your sales force, and point-of-purchase materials in the stores. Probably your best vehicle of communication is your package. This is what the consumer sees when she is in the stores. If it is a good package, it will draw her eye away from competitive packages and it will implant the message that you want to get to her. Here's a good example—slogan is short, there are no wasted words. It communicates everything it needs to communicate on a level that a woman can understand and can relate to. "Wonder Bread Builds Strong Bodies Twelve Ways!" It's quick and says everything you need to say. It's an emotional appeal with a credible section on the end of it which makes it believable.

Let's take a look at it in a little more perspective. First, they start with their

brand name. It makes pretty good sense, doesn't it? If you're going to tell them something, get your brand name into it. If possible, get your brand name into the beginning of it, so that they start with the focus of your brand name and go on to why they should buy that brand. "It builds strong bodies." This reinforces the mother's role as guardian of health. It has the emotional appeal, the appeal to her heart, which is the key when you are dealing with the lower income families. The communications of this company, on Wonder Bread, always show children. They are healthy, active, vibrant children and they are also beautiful children. They are the kind of children that each of you relates to immediately, and a mother can relate to much faster than we can. It reassures the mother that she is doing a good job—twelve ways—build strong bodies twelve ways. The reassurance is in the twelve ways. That is specific enough so that it gives the claim credibility and believability, but it does not involve any of the scientific jargon.

What does the slogan of Wonder Bread not do? It doesn't talk over the consumer's head. It doesn't threaten her status as the guardian of health and the expert on health. It doesn't talk down to her. It doesn't over-promise. It doesn't say that your Johnny will grow to be a 21½ pound, 6' 3" giant. It says it builds strong bodies. It lets the woman take that claim and put it to her Johnny or her Betsy.

Food for the Hungry

What products should we enrich with protein? Your current products. That is where your profit structure is and where your sales volume is. But let's spend some time with new products which could be protein enriched.

A recent United States Department of Agriculture study points out that 20 per cent of U. S. households have a poor diet. This is up 33 per cent in the last 10 years. So, here we are, in a nation with growing income and our diet is getting worse at a very rapid pace. Washington is really stirred up about this, and they should be. Two-thirds of the homes with under \$3,000 in income have a poor diet. One-third of the households that have more than \$10,000 a year have bad diets. So, that there is an opportunity in the upper income households as well.

Let's take a look first at the opportunity for a protein enriched product in the low income households. This particular effort is being chimed in right now by Senator George McGovern. A study reported to the Senate-Select Committee indicated that 16 per

cent of all low income households had unacceptable levels of blood protein. Four to five per cent of the households studied actually had malnutrition diseases. This should not exist in this country of plenty.

McGovern lays out an attack on hunger and malnutrition in these steps: (1) A declaration of national policy and urgency; (2) To start emergency food distribution programs; (3) To maintain adequate stocks in distribution warehouses; (4) "Fourth," says Senator McGovern, "we should learn more from our experiences with the Food for Peace. Our Committee has learned that it was not until last Spring that we began to fortify the powdered milk that we distribute to our hungry people. We have been fortifying milk for distribution abroad for years. The food industry has developed a food product called CSM. It is a high-protein mixture of pre-cooked cornmeal, soybean flour and dried milk with vitamins and minerals added, which with some lettuce and citrus for their contribution, makes a better diet than many Americans have now. CSM is easy to prepare and use. It can form the base of a gravy or soup, it can be made into a bread-like product. Simple instructions on the package inform the recipient of a variety of ways to use CSM. For 7½ cents a pound we are sending CSM to hungry people abroad." Continuing the quote: "CSM is now available in pasta, spaghetti, macaroni and noodles—a food product commonly used throughout the world. Three-quarters of a pound of this pasta can provide all of the proteins, vitamins and minerals needed by an individual each day. Private industry is ready to produce it and it can be delivered to the government at a cost of 10 cents per pound. It can be sold on the grocery store shelves at a retail cost of 2½ per cent less than the pasta we now buy."

Continuing the quote from Senator McGovern: "Several months ago the Department of Agriculture was urged to demonstrate the use of this pasta in three cities, but no action was taken. USDA can start tomorrow to include CSM pasta as the 23rd commodity in the Commodity Distribution Program. Further, it can work with private industry, grocery manufacturers, to assure that pasta and other products like fortified bread will be available on grocery store shelves for food stamps."

The interest is there. The point I am trying to register is that the government is going to get people into the business of protein enrichment of pasta products. Now, somebody is going to get a lot of sales volume out of that

(Continued on page 24)

Marketing New Products— (Continued from page 23)

effort, and somebody is going to make some profit.

International Opportunity

Let's take a look at the international opportunity in the low income households. Cereal is a basic form of protein world-wide. Bread, macaroni, spaghetti, grits, rolls are used throughout the world. Aaron Altschul, the guiding light of this program in the USDA, in a summary of his testimony suggests: "Put maximum nutrition in all major foods. Fortification and enrichment are necessary. It is possible to make a food as a complete source of nutrition and it is reasonably possible to add Vitamin A to flour. The addition of lysine to food converts it to a much better protein."

In order to be successful for government programs, any product would have to demonstrate self-sufficiency in the market place. It would have to be palatable and it must be developed by private industry. Mr. Altschul has an Agency for International Development that is offering development grants to companies who wish to develop high protein products for international consumption in the poverty areas.

High Income Homes

A third area of new product opportunity is in the high income homes. One-third of the homes with \$10,000 or more annual income, have a bad diet. How much of this is due to protein deficiency we don't know. I believe, from the marketing standpoint, this is the most exciting area. Also it seems to be the most exciting area from the profit standpoint, because of the price that you can charge for the product.

There are several roads that you can take in getting a new product to the highest income households. First, you can talk directly to the kids. You can talk to the teens, but this is a real tough go. They don't listen to their parents. They don't listen to advertising. They don't even look at packages. They know what they want to buy before they even get there. They are very faddish and a fickle market which is very tough to get to. If you want to talk to the kids, I would suggest that you design your product, your package your advertising appeals to the children 12 years of age and under, because they are a much easier market to work with. You can get to them through specific media like Saturday morning kid's TV, Sunday comic advertising. You can design your package so that it will appeal to these younger kids. This is a road to go.

The second road, and perhaps a more fruitful one, is to talk to Mom. But don't talk to her in scientific terms; keep it a level that she will understand and appreciate, where you are reinforcing her role as the guardian of the family's health. Don't be misled, however, into thinking that you can talk to these higher income women the same way you are going to talk to the middle and lower income. They are a more sophisticated market, and they are harder to reach.

What should the products be? Well, what do kids eat? Snacks, sweet items, and they like finger food. These are three categories that you would be interested in pursuing immediately. A combination of these three would certainly be a logical road to get into the market place.

In Summary

In summation, let's look where we have been. We know that consumers recognize protein and they know that protein is good for them. They recognize that spaghetti and macaroni are not very good for them. There is a need in your industry to upgrade the image of the product, to get people interested in nutritionally fortified pasta products. By nutritionally fortified, we don't mean what you are doing now—I'm talking protein enrichment.

The action that is obvious here is to start testing protein enrichment in your current products and in new products. Do it now. Talk to women in middle and low income households—talk to them in emotional terms about the health of their children which Wonder Bread does so well: "Build strong bodies twelve ways." And don't use any scientific jargon or they will turn you off. The nutritional needs of low income households in the United States and overseas are obvious. There is also an opportunity for new products in high income households that have poor nutrition.

I would like to close with a challenge to you. (1) Get involved, and get involved now, because this is a tremendous market that is just evolving. You can get in on the ground floor and grow with it if you get in it now. If you wait a year or two, somebody else is going to catch on, because the big companies are not going to stand on the sidelines and watch. (2) Start protein enrichment on a test program as soon as you can. (3) Develop new products. Work at new products. It's a tough game, but it's really rewarding. Take a look at the giants in the food industry in this country and they are so involved in new product development that it is their overwhelming interest. Thank you.

New Hygrade Grocery Products Division

Hygrade Foods Products Corporation has announced the formation of a new Grocery Products Division to be totally responsible for the sales of Mrs. Grass Soups and Noodle products, Spice of Life Spices, Hygrade Canned Meats, and Hy-Ration Pet Foods.

According to Donald Grass, Vice-President, Marketing, "This is the first step in achieving greater operating efficiencies in sales and marketing."

In order to achieve these efficiencies, five sales regions have been established, each to be supervised by a regional sales manager who, in turn, will be responsible to Larry Herman, the newly appointed General Sales Manager of the division.

"By consolidating responsibility in this way," said Mr. Grass, "we've eliminated a tremendous amount of duplication of effort. The result is certain to be substantially increased efficiency and improved customer service."

Name Change to Kraftco

Kraftco Corporation is the new name of National Dairy Products Corporation. The change was approved by the corporation's stockholders at the company's annual meeting in Chicago on April 17.

Kraftco Corporation is the corporate parent of Kraft Foods, Sealtest Foods, Breakstone-Sugar Creek Foods, Hum-Ko Products and Metro Glass.

The name was changed from "National Dairy" because it was felt the name was no longer descriptive of the corporation's diversified and international operations and that the corporation's products are in non-dairy fields. Kraftco Corporation was chosen as the new name because it allows a wide range of acceptable and logical possibilities for expansion and diversification. A further benefit in the new name is that it is readily associated with "Kraft" . . . a very highly regarded name and a trademark that is known in many countries throughout the world.

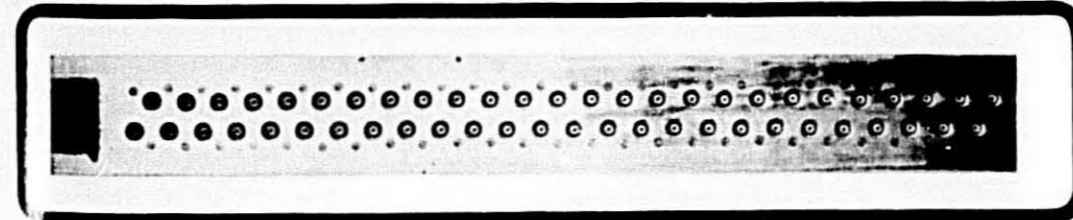
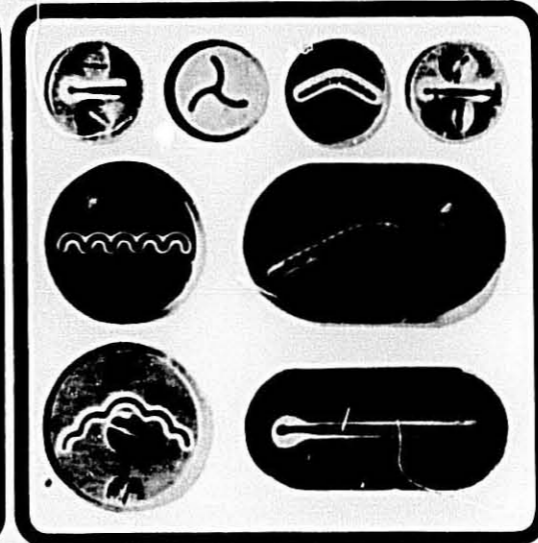
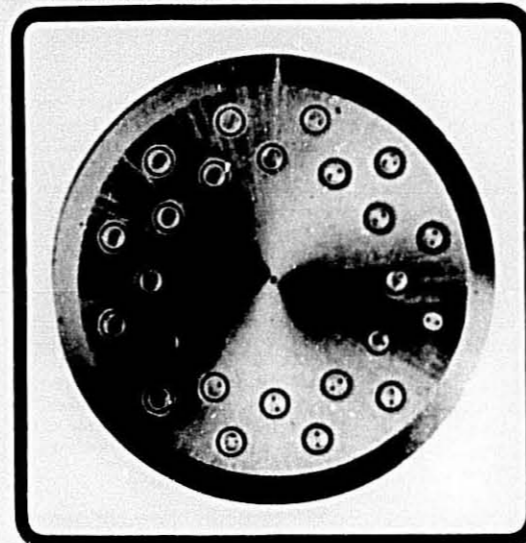
The new corporate name will not affect the name of the Kraft Foods Division or the names of any of the Kraft products. New labels and company stationery will show Kraft Foods as a division of Kraftco Corporation.

Color TV

Households with color sets view television an average of one hour more per day than non-color homes (6.9 hours vs. 5.9), according to the latest findings of A. C. Nielson Co.'s Television Index.

FGM

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Protein Supplements—

(Continued from page 19)

improved by the addition of lysine (0.2 per cent) and of needed vitamins and minerals."

Protein Fortification

Your industry might thoughtfully consider the concept of increasing and broadening the practice of protein fortification of spaghetti and macaroni. The basic concept and principal of vitamin and mineral enrichment has been accepted and practiced for over twenty years. Protein enrichment would be simply an extension of this accepted practice. It would be founded in part on the same basic logic which is that the flour milling process alters the original amino acid pattern adversely by reducing the essential amino acid content in the same manner it reduces certain vitamins and minerals which were present in the original wheat.

The ideal protein fortifier would be one which is both economically priced, and which is rich in lysine and threonine but just as important—one which would not adversely affect the quality score. Quality considerations would include color, taste, odor, texture and cooking properties such as cooking time, loss due to cook out, sliminess, stickiness, etc. The objective would be to end up with an improved nutritious spaghetti and macaroni, based on present standards of public acceptance, which would be purchased because it is appealing, flavorful and attractive, and not because it is simply nutritious.

Vitamins, Inc., now has commercially available protein supplements, economically priced, which will yield such a high quality, protein-fortified pasta. With the above objectives in mind, investigations have shown that an ideal protein—rich in lysine and threonine as well as other essential amino acids, vitamins and minerals—can be obtained from a fifty-fifty blend of color-reduced, defatted wheat germ, and odor and flavor-free casein.

When this blend of defatted wheat germ and casein is added at the rate of 10% to semolina, a spaghetti is obtained with an excellent quality score and with ideal nutritive properties. A typical laboratory pilot production gave a finished spaghetti with 20% protein, as is basis. Preliminary rat feeding studies, completed by the Wisconsin Alumni Research Foundation, found this test spaghetti to have a P.E.R. of 2.1 compared to control casein protein at a P.E.R. of 2.5. This is an outstanding nutritional performance and makes the protein in this spaghetti: 85% as nutritious as animal protein. National Re-

search Council 1968, recommended daily allowance calls for average protein to have P.E. of 70%. On balance, 5% wheat germ and 5% casein, would increase raw material cost \$3.00 cwt., flour @ \$7.00 up to \$10.00 per cwt.

Assuming a boneless, well-trimmed beef steak to contain about 64% water, 20% protein and 18% fat, and retailing at \$1.25 per pound, and assuming a spaghetti fortified with 19% of the proposed wheat germ-casein blend, retailing at \$0.40 per pound, the relative dry weight cost of these two nutritionally equivalent proteins, with all costs assigned to the protein, would be \$6.25 per pound for the beef protein and \$2.00 per pound for the fortified protein in the spaghetti. This cost relationship would be further exaggerated in the case of a choice cut, such as T-bone, with higher fat content and the bone left in.

Amino acid analysis just completed shows the test spaghetti contains 6.27 mg. per gm. of lysine and 6.36 mg. per gm. threonine. This would compare to Hoskins' findings of 2.56 mg. per gm. of lysine in a standard semolina spaghetti containing 14.8% protein. This means that the essential lysine level, most important to wheat products, has been increased well over twofold.

The test spaghetti has excellent color, taste, odor, and cooking characteristics.

Components

Let's discuss the two individual protein concentrates which are the components in this proposed protein fortifier.

Wheat germ, which is defatted to prevent rancidity development, is an excellent source of low-cost, well balanced plant protein. It is available in ample supply. Wheat germ is relatively rich in lysine and threonine, and contains 30% protein on an as is basis. It is now included in standards for enriched macaroni products. Process modifications are being instituted which will provide a wheat germ with improved color which has been a drawback in the past. In the work published by Winston, January 1969, 5% wheat germ incorporated alone in macaroni products confers a somewhat nutty and desirable flavor to the finished product. Wheat germ is rich in B vitamins, iron and phosphorus. It is compatible with semolina flour and is particularly economical, being cheaper on a protein basis than soy concentrate, milk solids, and fish flour.

The new high-purity, flavor-improved casein contains 92% protein, as is. Winston also reported that 5% casein added alone to semolina flour yields a spaghetti with a markedly improved

yellow color and a corresponding reduction in the brown color component. This is unusual and contrary to the adverse color effect resulting with most high protein additives. Casein also gives an excellent quality in the form of a clean, clear surface texture. Other characteristics noted with casein were a minimum of stickiness and slime on the cooked surface and good resiliency. Casein, being water insoluble, should not leach appreciably during cooking. Casein, with its high, excellent quality protein, added at 5% level, increases significantly the protein level in the finished macaroni product by 4.5%.

Limited experience to date would suggest that no serious problems would be encountered in manufacturing this type product in conventional production equipment. Water absorption figures are not much different than for 100% semolina. The malleability of the finished dough is satisfactory. The millers who supply durum products and spring wheat products have indicated that they would be willing to premix the defatted wheat germ-casein blend into selected materials providing the volume justified. The product also can be introduced at the point of production with feeders now available.

Summary

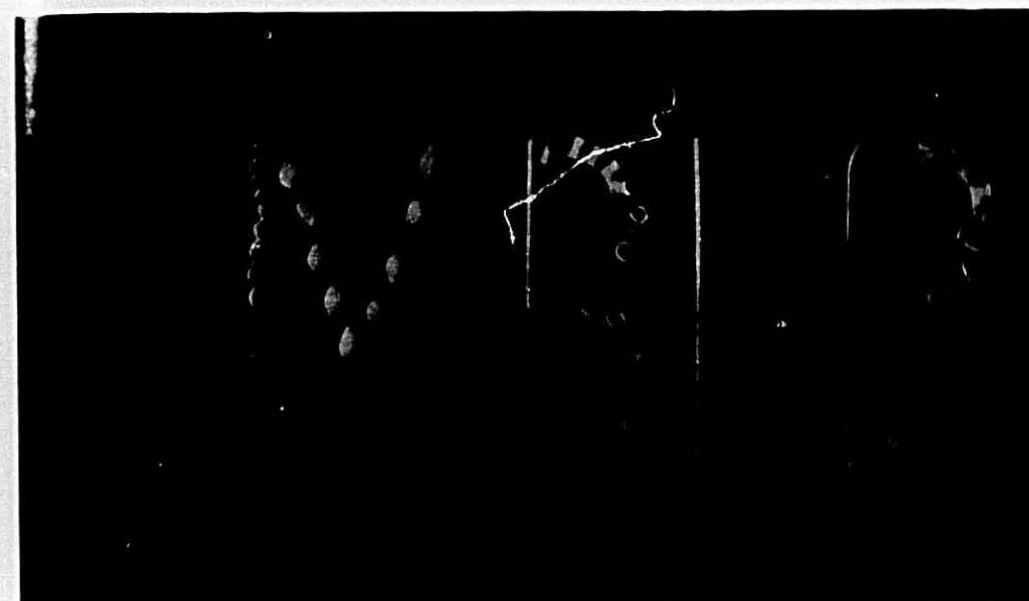
Summary: We have shown cereal products, particularly wheat, need protein supplementation. Breakfast cereal already has fortification. Data presented on defatted wheat germ and casein—
a. Increase raw material cost \$3.00 cwt. or 30-35% on balance.
b. Increase protein level can be obtained up to 20%.
c. Increase biological or nutritional value from P.E. of 27 to 85 or 300%.

We are now at an early stage in the concept of a semolina reinforced with defatted wheat germ and casein. Most of the work to date has been in the laboratory. However, the nutritional information is sound and will not change. We believe that the proposed defatted wheat germ casein protein supplement is worthy of your consideration, attention and investigation.

Cattle Better Fed—

(Continued from page 16)

that determines an adequate diet. The U.S.D.A. reported that the amounts of food used in the households of this country were sufficient, on the average, to provide proper diets. What is significant is that many of these diets failed to provide the minimum caloric and nutrient intakes necessary to provide what the Food and Nutrition Board of the National Academy of Sciences-National Research Council considers adequate for a "good" diet."



TO INSURE QUALITY IN ANY MACARONI PRODUCT, ALWAYS SPECIFY AMBER

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Caution on Durum Crop

Clifford G. Pulvermacher, general sales manager of the Export Marketing Service of the Department of Agriculture, received the annual "recognition award" of the U.S. Durum Growers' Association at the association's annual meeting at the Memorial Bldg. in Devils Lake. More than 100 were in attendance.

He issued a warning that durum growers should guard against "overstimulation" of acreage expansion.

"If over 100,000,000 bus. of durum is produced this year, we will wonder how to move it," Mr. Pulvermacher said.

The E.M.S. general sales manager sounded his note of caution while noting that 1968-69 is shaping up as a "good year" for durum exports, with the outgo expected to reach 50,000,000 bus. He attributed the heavy volume of durum export sales to "a very aggressive pricing policy"; decreases in Argentine and Canadian crops, and the fact that Canada did not have durum in "position to move it at the right time."

Mr. Pulvermacher also reviewed the problems faced in exporting other wheats, primarily the result of expanding world production. He noted the expansion in the world wheat crop this year to above 11,000,000,000 bus, stating that "this is an indication that other people around the world are finding wheat a very attractive commodity to grow."

John Wright Re-elected

John Wright of Edmore, who was re-elected to his fourth one-year term as president of the grower association, told the meeting that the expected durum carryover at the end of the current season, around 20,000,000 to 25,000,000 bus, is not abnormally large. "It actually is needed as we never know when diseases will cut into production," he said.

Mr. Wright said that a 6 per cent decrease in durum acreage is indicated and that over-all production should not create a problem for the 1969-70 crop year. "But if durum growing spreads over too great an area, it could mean a greater surplus and lower prices," he stated.

Freight Rate Report

Eugene M. Murphy, general manager of the North Dakota State Mill and Elevator, discussed a proposal by a railroad to reduce freight rates on winter wheat from South Dakota to Duluth, stating that the intention is to permit blending with durum in semolina production. He said that protests are being filed with the Interstate Com-



John Wright

merce Commission by the state mill, Public Service Commission and North Dakota Wheat Commission.

Resolutions Adopted

Resolutions adopted by the association included recommendations for lower freight rates to the Pacific coast for durum intended for domestic consumption; accelerated export policies; expanded durum research; continued resale program; requiring cleaning of custom combines before entering North Dakota, and inclusion of durum wheat and malting barley in the futures market. The association also reaffirmed its previous stand that funds collected for support of the North Dakota State Wheat Commission should be used for wheat programs, not as general tax revenues.

Another resolution commended the state wheat commission and durum growers for pursuing an orderly marketing program on durum.

In addition to the re-election of Mr. Wright as president, the board of directors renamed Richard Saunders of Doyon as secretary-treasurer. Mr. Saunders has held this post for eleven years. Named vice-president was C. K. Larson of Leeds, succeeding Harold Hofstrand, also of Leeds.

Durum Show Dates Set

The 31st Annual United States Durum Show will be held at Langdon, North Dakota, October 20, 21 and 22.

Preliminary plans have been made for a Spaghetti Safari through the durum country at harvest time for some twenty magazine and metropolitan newspaper food editors.

Late Planting

The North Dakota Weekly Weather and Crop Report for mid-April stated that field work was starting later than usual this season. There has been no field activity whatever except in a few southwestern counties. The season is considered about ten days later than usual, and in most southern counties field work was not expected to get under way until April 20 or later, ranging to around May 1 in some of the late northern counties. The state average date for the start of field work is April 22.

The following week the report stated that less than one per cent of the durum crop has been seeded compared to about a quarter of the crop being seeded a year ago. Almost no durum had been planted in the principal growing area.

The Peavey Company Crop Letter reported cool temperatures and adequate to excessive soil moisture levels throughout their territory. Ample rains last Fall were followed by mostly heavy snowfalls during the winter, with the resulting Spring run-off much greater than normal. Fields were mostly wet, and many rivers were at flood stage. Some field work began in mid-April in central South Dakota and in southeastern Montana, but very little seeding had been accomplished. Most of the Red River Valley in mid-April required at least two weeks of good drying weather before field work could be accomplished. Reports indicated that winter wheat and rye came through the winter in good condition.

The letter concluded: "What is needed now is a good spell of drying weather, so the farmers can plant spring crops and take advantage of the abundant moisture."

Noodle Study Discussed

Great Plains Wheat, Inc. reports results of the noodle study were discussed recently with representative of West German durum milling and manufacturing associations.

Europe is the largest market for U.S. durum and there has been a tendency by West German millers to increase the use of U.S. durum in their grists.

Noodle consumption is increasing slowly in West Germany with considerable difference in consumption patterns between northern and southern Germany.

The three associations with which discussions were held indicated they would need more time to digest the results before discussing their possible application to a promotion.

ADM Flour Mills

DuPont Looks at Packaging in the Seventies

DU PONT'S outlook on packaging for the 1970's was projected by John P. Breen, director of marketing for the company's Film Department. He addressed packaging editors at a Du Pont breakfast on the opening day of the National Packaging Exposition.

He said: "When Du Pont exhibited in the first Packaging Show back in 1932, we were simply a cellophane manufacturer. This was the era in which modern-day packaging and merchandising were just beginning. Although food was then being wrapped by hand, the food industry was on the brink of a packaging and distribution revolution that Du Pont was later going to help bring about. Cellophane was also just beginning to capture attention in the tobacco market. The Humidor Pack was big news in cigarettes.

"Now where are we? At this year's Packaging Show, Du Pont has five different departments exhibiting. They are not only here with different products. They are also here with different roles.

Film Department

"The Film Department is still on board—as it has been each year since 1932. Today this department is intensely involved in packaging, as a materials supplier and as a developer of systems.

"Who else is now here from Du Pont? We have our departments that make basic plastic resins—the polymer chemists who are also plastics engineers. Some of the more exciting developments at the show may well be centered on what the Plastics Department and its customers are doing with "Zytel" nylon resins and "Surllyn" ionomer resins . . . or what the Electrochemicals Department and its customers are doing with "Elvax" vinyl resins in hot melts. In the Film Department, we are now a customer for "Surllyn."

"Then we have our manufacturing chemical departments, who are raw material suppliers. Their customers are paper makers, manufacturers of packaging materials and converters. If you look at the wet end of a Fourdrinier machine, you are likely to see quite a few Du Pont materials making a contribution—from bleaches to pigments. Further along in forming paper products into packaging materials, our resins are used for a variety of coatings and treatments to provide barrier, heat seal, aesthetics, release surfaces, adhesive surfaces, and many other properties needed in packaging. And, of course, our pigments—and also some of our resins—are used in inks.

Beyond these more familiar contributions of Du Pont, we also have some new ones this year. Among them is a packaging material that our Textile Fibers Department is exhibiting for the first time.

So the Du Pont Company is involved in packaging in many dimensions . . . as a supplier of raw materials . . . as an inventor of new resins to widen horizons and let innovative companies express themselves in new ways . . . and as a supplier of finished packaging materials.

Systems Approach

Growth of the system approach will be a key factor, he said. "As able as suppliers may be in delivering virtually any combination of packaging properties in a material, it is vital there also be a packaging system that can make use of them. The material supplier cannot ignore the packaging operation in which his product is used."

As an example of Du Pont's active work in systems development, Mr. Breen announced a new multi-pack system for cans, based on Du Pont's heat-shrinkable "Clysar" polyolefin film. Called "Clean Pak" of "Clysar," the system was developed jointly with R. A. Jones & Company, a packaging system manufacturer specializing in can handling at high speeds.

Sophisticated Packaging

Mr. Breen elaborated on three of today's trends that will reach major proportions in the Seventies.

One is "the rapid market expansion for sophisticated packaging." He said, "In the past decade, the use of innovative structures for packaging has been pushing far beyond traditional food and consumer-goods fields, where property requirements have always been high. Today, sophisticated methods are being used to wrap everything from pallets to surgical sutures—and this kind of packaging will have a great impact on the Seventies."

He illustrated with industrial packaging. "The cardboard box and the kraft paper wrapper have given way to a whole new era of imaginative packaging," he said. His examples ranged from skin wraps for typewriters—made from ionomer film—to vacuum packages for electric generators, made of "Tyvek" spunbonded olefin laminated to foil.

As his second trend, Mr. Breen cited a "fundamental change in distribution patterns." As highly centralized plants become more and more of an influence

in the food industry and other packaging fields, the distribution chain grows longer and the need for greater protection and durability becomes more critical. "Even today," he said, "the average supermarket package is handled 25 times in its distribution to the store shelf."

Shelf life of six to nine months may be needed by food products, Mr. Breen predicted. "In the Seventies, there will be breakthroughs in materials that can furnish these protective environments. Among them will be higher-barrier films and new approaches to coated structures."

The third trend Mr. Breen described is the rapid growth of convenience foods. "Although these foods cost more," he said, "Americans have more to spend—and we are eager to buy convenience."

As an example, Mr. Breen told of "roast-in-bag" turkeys, frozen and packed in "Mylar" polyester film.

One packer, Spring Valley Turkey Farm of North Swansea, Mass., has been using such a pack for several months with strong consumer acceptance. "During the roasting," Mr. Breen explained, "the seal gives way, releasing the pressure and roasting the turkey to a golden brown." A frozen turkey in the bag requires only a few minutes longer roasting time than a thawed bird, he reported.

Customer-Oriented

In explaining Du Pont's approach to packaging needs, Mr. Breen said, "For our near-term business, we try to be highly customer-oriented, highly need-oriented."

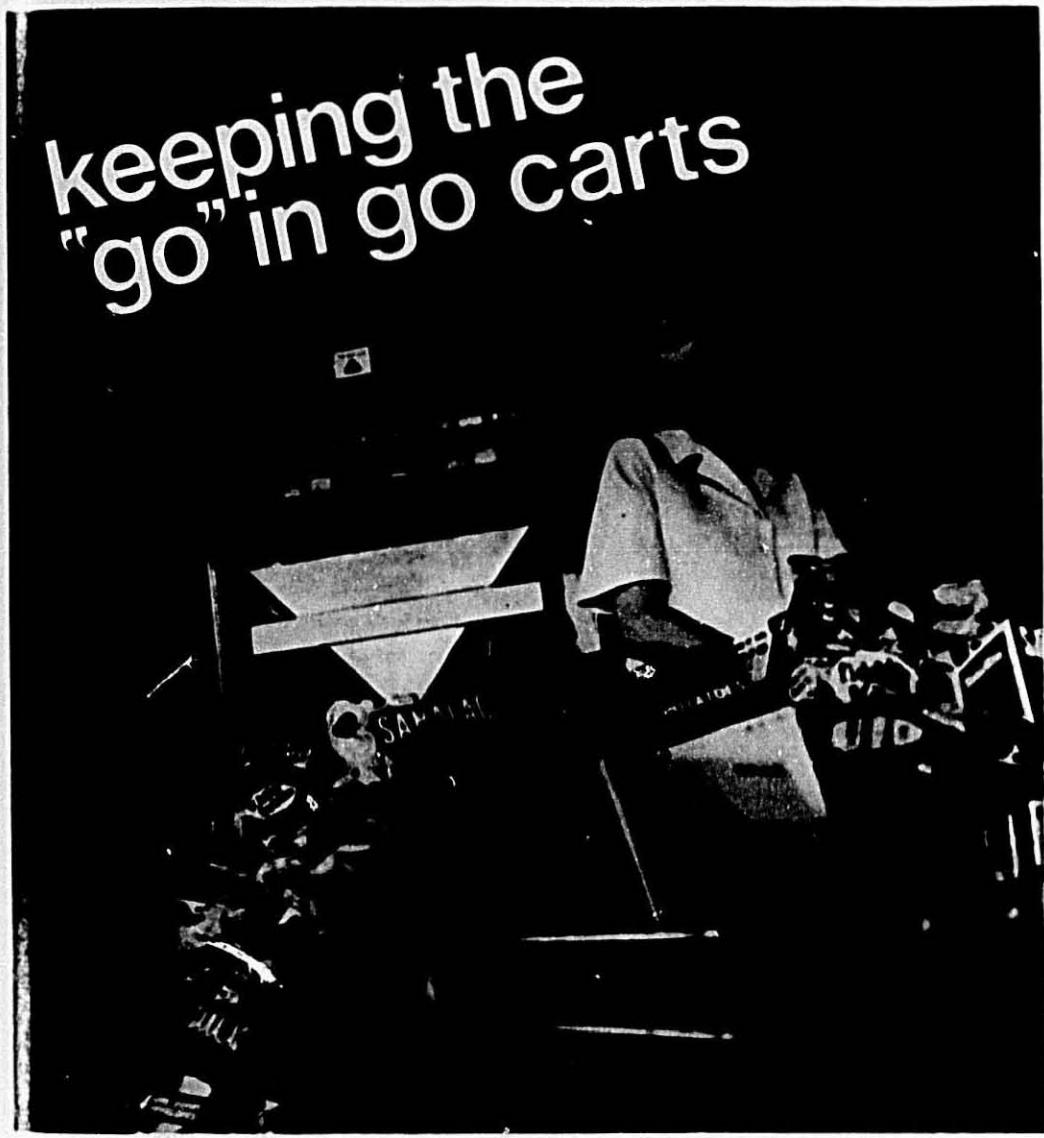
"In our longer-term approach, however, we try to be original thinkers. We speculate on the trends, on tomorrow's environments. And then we risk our money and our efforts in trying to develop materials and systems that can fit into these trends and help them accelerate."

Mr. Breen gave a variety of examples. "The breadth of our capability in designing our product mix to meet precise packaging specifications," he said, "is, I believe, unequaled in the packaging industry—and this is our unusual role in Du Pont."

He illustrated the scope of this mix by listing seven different Du Pont product lines that answer the needs of just one property: grease and oil resistance. Among these is "Zonyl" paper fluoridizer, a new product to this year's Packaging Show. Its sole property is grease and oil resistance.

(Continued on page 32)

keeping the "go" in go carts



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Mr. Breen summed up Du Pont's position as a packaging supplier by saying, "We have become much more needs-oriented, much more market-oriented than ever before. We are committing the most dollars and the most manpower in our history in trying to be innovators in a field that is already known for its high level of innovation—and leading marketers in an industry that is already exemplified by sophisticated marketing and keen competition."

Bag Case Loading Is Automated For First Time

A new system for the automatic case loading of supported and non-supported film bags has been announced by R. A. Jones and Company, manufacturers of packaging equipment.

Units will be available for late Fall, according to L. A. Chrouh, manager, market development, who said that the system will accommodate all difficult-to-handle bagged products including frozen foods, candies, potato chips, breakfast cereals, noodles and fresh produce.

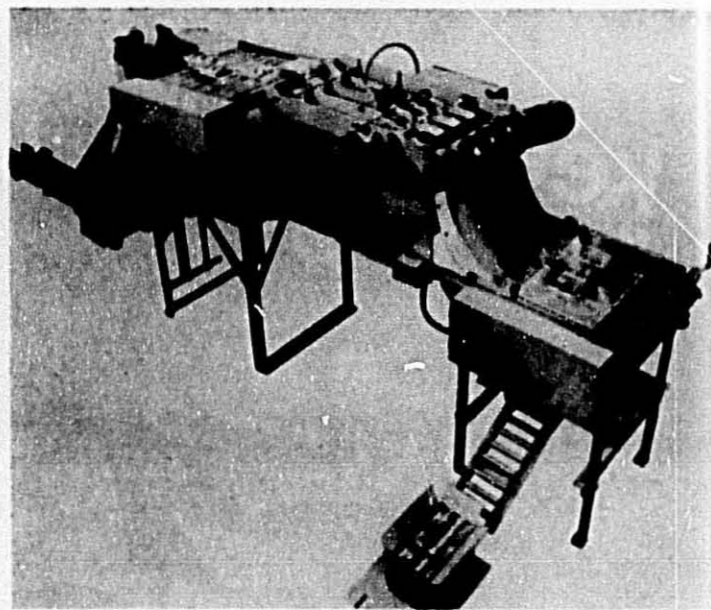
Chrouh pointed out that the system was developed in response to the food industry's demand for automated bag casing. The flexible nature of the bags prohibited earlier attempts to automate this procedure, he explained. "In order to be properly packed, all bags must be made to assume or retain a uniform conformity at the point of loading. This objective," he said, "has been achieved in the Jones bag case loader."

In operation, the bags are picked up from a form-fill-seal machine, carried to a height of 6½ feet by means of a conveyor belt, and then diverted into three distribution lanes. The bags then flow down a divided chute to a divider collection box where they are automatically loaded twelve to a case.

The divider collection box is comprised of two sets of split doors. As a row of three bags comes to rest on the upper set of doors, the doors open and allow the bags to drop onto a second, lower set of doors. Four rows, or a total of twelve bags, are allowed to accumulate on this second set of doors. Then these doors open and the load drops into a case which is mechanically located to receive the bags.

The machine requires only one operator and will reliably handle a wide range of bag and case sizes. It runs at speeds of up to 120 bags per minute. Optional features which can be added include a metal detecting device and a check weigher.

R. A. Jones and Company, Inc., manufactures a full line of automatic and



R. A. Jones & Co. Bag Case Loader

semi-automatic cartoning machines. Located in Cincinnati, Ohio, the firm provides packaging equipment for a broad segment of major American and foreign industries including the brewing, beverage, food, paper, cosmetic, pharmaceutical and automotive industries.

Packagers Face Litter Problem

Consumer legislation and action to help solve the nation's litter problem was brought to the attention of the National Packaging Conference by Alexander B. Trowbridge, president of the American Management Association, sponsor of the event.

Former Secretary of Commerce Trowbridge laid down a six-point program by which he said "management will have to take some bold steps forward."

One point called for industry to take part in the drafting of consumer legislation on packaging. "Management must realize that certain excesses do exist and that some legislation is on the way," he said. "Management should join the movement and make certain that the consuming public—its customers—are adequately protected by good legislation rather than a patchwork which results when pressure groups react to a popular movement for reform."

Trowbridge said that industry "cannot abdicate" from the litter problems caused by packaging. "It is not simply a problem for the consumer and the

police. The great research which developed the modern package can develop means for disposing of it," he said.

He also said:

- Packaging must be integrated into the entire manufacturing-distribution network.

- Packaging changes must be executed more smoothly at the retail level.

- The mass market is now a quality market, and it deserves quality packaging.

The Packaging Show, the largest in AMA history, drew some 35,000 executives, buyers and members of the trade. There were 484 exhibits.

One of the largest displays was the St. Regis Paper Company, spotlighting packaging concepts of the present and future.

An interesting item was a large cereal box, which shrank (using a telescoping principle) as the contents are used.

One demonstration showed how the shopper of tomorrow will use a credit-card gadget to select his purchases. The items are sorted and packed by computer and delivered to the customer's home.

Another computerized gadget will do away with those long super-market check-out lines. The customer puts his purchases into a shopping bag as he goes through the store. As he leaves, he carries the bag through an electric eye, which automatically calculates the total purchase through impulse circuits built into each package.

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Durum is an important product of Peavey, along with a multitude of other enterprises related to the growing, stor-

age, transportation, merchandising and processing of cereal grains. Peavey is a highly efficient operator in this complex business because its operations are streamlined and coordinated to the nth degree.

Durum mills operated by Peavey are located at Superior, Wisconsin, Grand Forks, North Dakota and Buffalo, New York. Peavey Flour Mills process wheat received from 700 grain elevators located in the areas producing the finest wheat in the world. Peavey has total milling

capacity of 60,000 hundred-weights a day, much of it, of course, in durum.

No wonder macaroni and spaghetti manufacturers have come to rely most heavily on Peavey for their quality durum products. And it all starts 'way out in Peavey Country'.

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PV PEAVEY COMPANY
Flour Mills

King Midas DURUM PRODUCTS



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Golden Grain Raises Coupon Fee

Graciers receiving special store coupon on Golden Grain Macaroni products will be entitled to a one-cent increase in handling charges, it has been announced by Tom DeDomenico, vice president of the San Leandro, Calif., company.

The three-cent handling charge for each store coupon is effective immediately, DeDomenico said.

Golden Grain's product line includes Rice-a-Roni, Noodle-Roni and a wide variety of packaged pasta foods.



Sal F. Maritato

Maritato Promoted

S. F. "Sal" Maritato has been promoted to division vice president and durum products sales manager for International Milling, according to an announcement by Robert M. Howard, vice president of IM's industrial foods division.

Maritato has been with International over ten years, joining the company in 1958 as a bulk flour salesman in New York. A year later, he was appointed eastern region durum products sales manager in New York.

He was named U.S. durum products sales manager for IM in 1966 and transferred to IM's headquarters in Minneapolis.

Prior to coming with International, Maritato was associated for 10 years with Burry Biscuit Corp. of Elizabeth, N.J., where he was sales manager.

Maritato is a native of Newark, N.J., and attended Rutgers University, specializing in marketing. He served in the infantry in World II in the North Africa and Italy theatres, earning two battle



stars and the Purple Heart. Maritato is married to the former Jo Ann Giardina and they have a son, Gerald, 15.

Maritato is active in the National Macaroni Manufacturers Association.

Other vice presidents named in the industrial foods division were Alvin F. Borer, director of the bakery mix department, and Anthony L. DePasquale, general sales manager for bakery products.

Macaroni Convention Coronado, California, July 13-17

Display Features Soup Mix-Hamburger Offer

A new pre-packed display unit has recently been introduced by the I. J. Grass Noodle Company, producers of nationally known Mrs. Grass' soup mixes and noodles, for their Onion Soup Mix. This display is now available for in-store use and is geared to increase sales and profits both in grocery and meat departments.

The colorful new point-of-sale display unit, aimed at the summer cook-out market, was developed for Grass by Stone Container Corporation, one of the country's largest producers of corrugated shipping materials. The eye-catching display comes in three pieces pre-packed with product for quick and easy set-up.

Master Shipper

The master shipping container used to ship the display to food stores throughout the country, has complete instructions and set-up illustrations printed on one side. A die-cut base holds the product tray which is pre-packed with 288 packages of Mrs. Grass' Onion Soup. A display heater with a three-dimensional cartoon-like chef and a tear-off pad of coupons, elaborates on the free hamburger offer. When a customer sends in the fronts of five packages of Mrs. Grass' Onion Soup Mix, she receives a coupon toward the purchase of hamburger or any other item from the meat department of her store.

Stone Container not only designed the construction of the display, but also produced the graphics which are an integral part of this eye-catching display. The shipper dimensions on the unit are 24 1/2 x 8 1/2 x 28 1/2. The shipper weight is 32 lbs. The graphics, construction design and production of the corrugated shipper were accomplished by Stone Container's 42nd Place plant in Chicago.

According to Alvin Karlin, President of Grass, the new pre-packed display unit has met with overwhelming success with stores.

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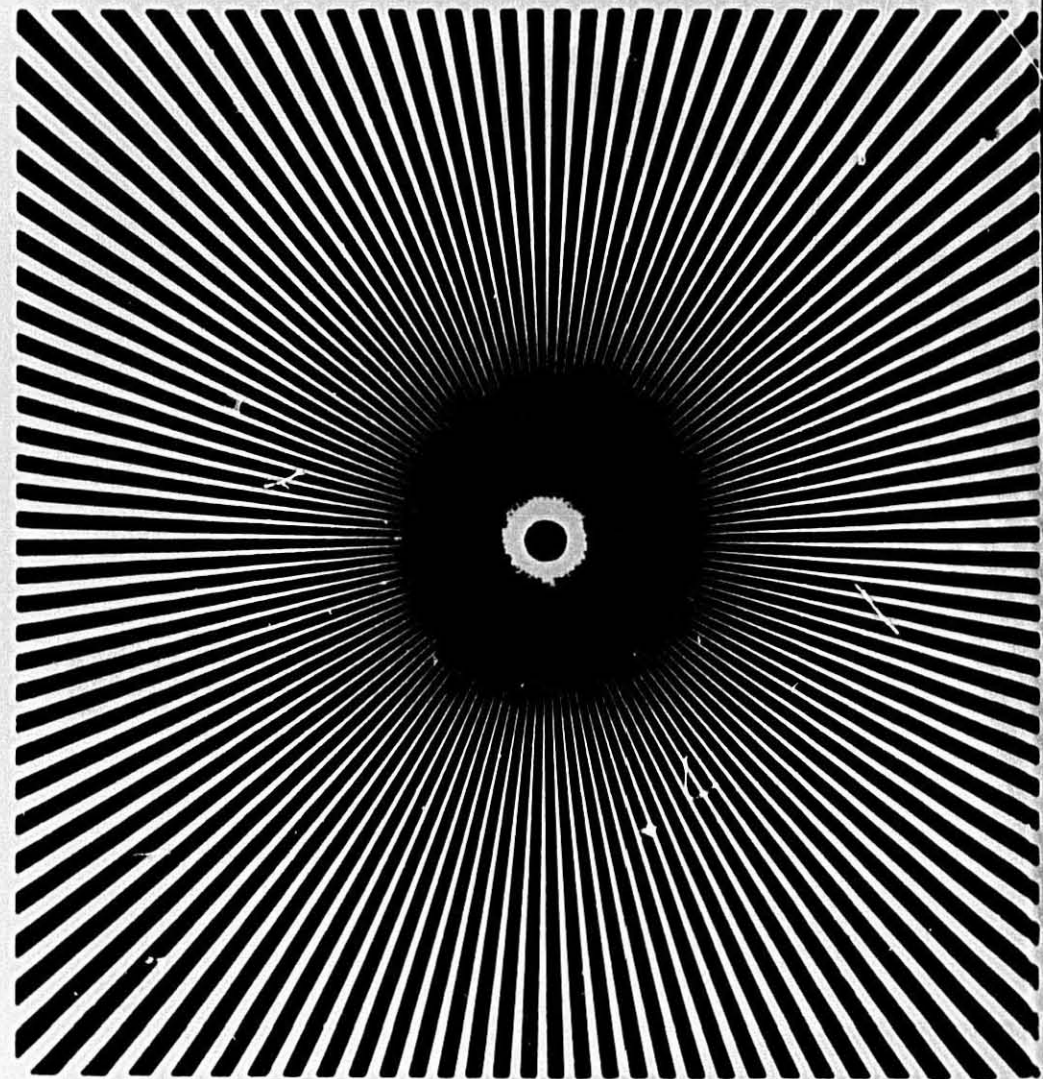


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