

THE MACARONI JOURNAL

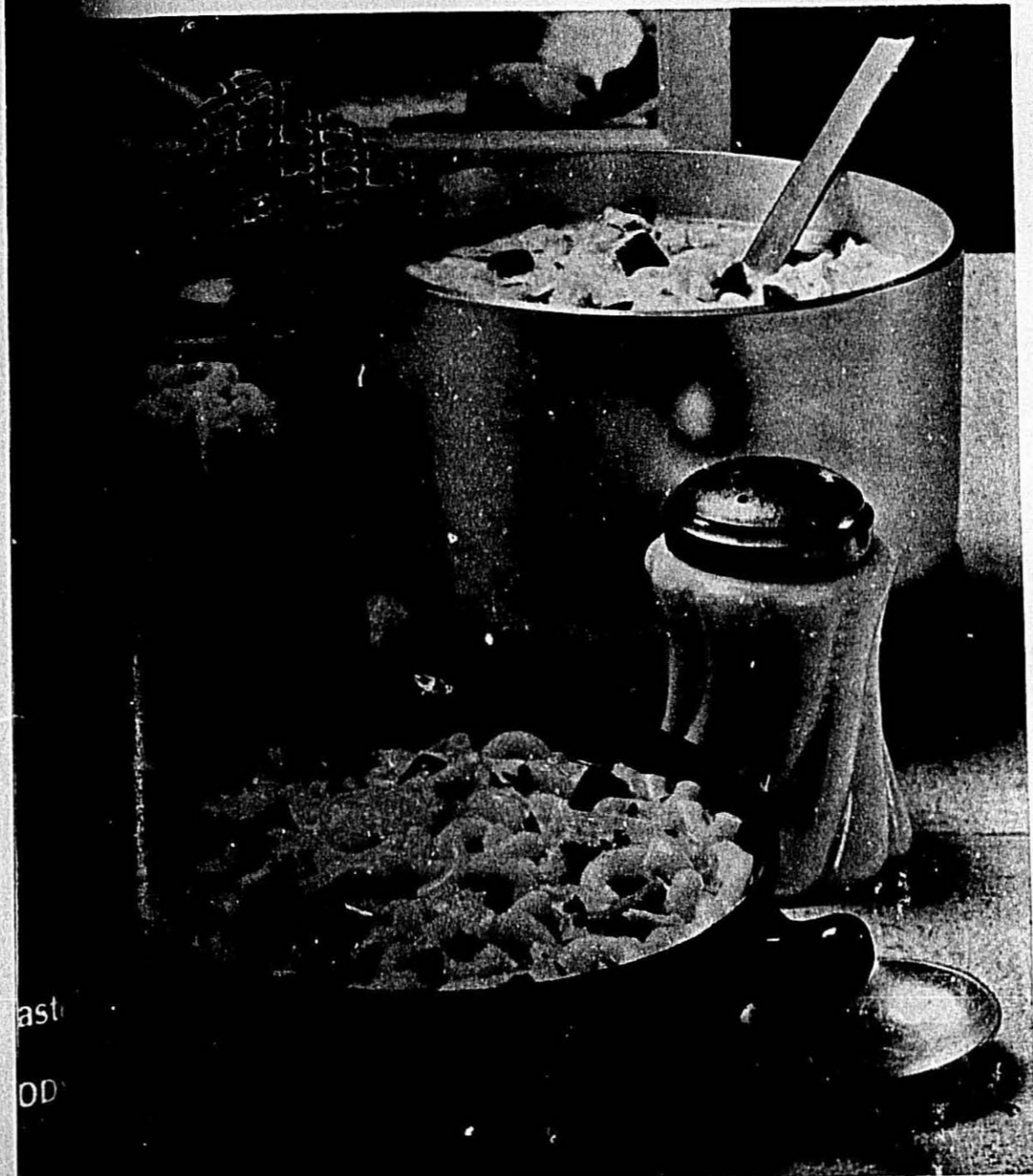
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Macaroni Journal

FEBRUARY, 1977



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he Macaroni Journal

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FEBRUARY, 1977

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Price Inflation— Still Very Much Alive

There have also been some positive developments in the fight against inflation. Good gains in productivity and relative (but only relative) moderation in many wage settlements are among them. But the trend is not good. Leaving out food and energy—whose prices tend to be extremely volatile—consumer prices have been rising at a steady annual rate of 6% since early this year.

With few exceptions, expert forecasters believe that prices will continue to rise at approximately their recent pace for some time to come. Good crops in 1977 would eventually bring some further moderation in food prices. But the prices of other goods and services seem to be set quite firmly on that 6% upward trend.

Price inflation of 6% is, of course, an improvement over the miserable experience in 1974 and 1975. But it is not tolerable in the long run. Like it or not, the need to contain inflation

will remain a principal determinant of economic policy.

Fewer Reviews of OSHA Cases

There is some good news for businesses cited for job safety or health violations by the Occupational Safety and Health Administration but found innocent. In the past, such firms have frequently had to undergo the expense and loss of time involved in a review by the OSHA Review Commission. Now, that body, admitting it has been sliding downhill in efforts to cope with a growing case load, is proposing to clip its own wings and reduce the number of reviews. Instead of allowing each individual commissioner wide latitude in ordering reviews of decisions by the agency's law judges, the commission proposes to permit reviews only in two circumstances: When there is a valid petition by a party involved, or when a policy or legal question is clearly involved.

Review orders by commissioners have been generating more cases than are being settled.

The Bicentennial Year

THE BICENTENNIAL YEAR with fireworks, tall ships and Yankee Doodle publicity didn't quite come up to the promise of predicted pasta sales.

At year-end, softness in the economy is uppermost in everyone's mind, including President-Elect Carter's. This shared concern could lead to realistic political and economic solutions in 1977. Economic stimulation is expected in some form: a tax cut, government spending for jobs programs, and the like.

Lack of confidence continues to undermine investment in plant and equipment. Without it, efforts to reduce unemployment will lead to shortages and a rise in inflation.

"What fresh starts are you prepared to make?" Stanley Cohen asks his business friends in a column in *Advertising Age* (November 29). Mr. Cohen, a member of the U.S. Chamber's Consumer Affairs Committee, says that his reading of the campaign indicates Jimmy Carter hopes to make some fresh starts to current problems, such as neglect of unemployed urban youth and consumer representation in government policy making. He invites business to find ways to help make America "a place where the individual feels safe, happy, fulfilled."

Tough Competition

Nineteen-seventy-six was a year of tough competition for the Macaroni Industry. Lower flour costs gave more margin for wheeling and dealing in the marketplace among competitive brands. Cheaper meat, plentiful potatoes, beans and rice also made the fight for a place on the dinner plate more difficult.

The sale of two large companies made news: Foremost-McKesson purchased the C. F. Mueller Company of Jersey City, New Jersey; Ranks Hovis McDougall, Ltd. purchased Gioia of Buffalo, New York. Two smaller firms closed their doors: Mrs. Roth Noodles in Pittsburgh, Pennsylvania and Hi-Pro Foods in Los Angeles, California.

In an Industry Survey the Morton Research Corporation put pasta sales up 3 percent in 1976. Ernst & Ernst gathered the statistics for the NMMA Sales Indices for Macaroni Products

Month	Government	Industrial-Institutions	Grocery Trade	All Sales
November, 1975	80.9	124.4	114.8	114.0
December	46.7	99.9	115.7	111.1
January, 1976	39.7	106.7	140.9	132.2
February	59.5	119.5	140.7	134.8
March	59.1	112.1	129.6	124.7
April	56.6	94.3	111.5	107.0
May	64.4	84.2	108.4	103.0
June	54.6	107.5	119.1	113.3
July	35.6	87.9	96.1	93.0
August	37.2	124.9	114.8	114.3
September	49.5	122.3	133.9	129.5
October	41.5	123.9	126.0	123.2

based on reports from companies whose total sales represented an estimated 75 percent of industry volume. The index numbers are based on average 1972 sales. That is, each monthly index number is derived by dividing current sales volume by one-twelfth of the total sales for 1972. 1972 was selected because in that year the Census of Manufacturers was taken.

Ample Wheat Supplies

The growing mound of wheat in the world remains the overriding bearish factor affecting grain markets. The latest International Wheat Council estimate put world wheat production up to 409.5 million metric tons, which would be more than 38 million tons (10.4 percent) over the record 1973 crop, and 57.4 million tons (16.3 percent) above 1974's crop. On a world basis, this is indeed a sharp increase in production. The sharpest increases came from Russia (up 34 million tons or 52 percent), Argentina (up a projected 3.4 million tons or 40 percent),

India (up nearly three million tons or 12 percent), and Canada (up 0.5 million tons, or 38 percent). Any increase in wheat usage this crop year could hardly match the increase in production; as a result, wheat stocks in the major wheat exporting countries are projected by the IWC to jump five percent to 57 million metric tons. One would expect wheat acreage to decline somewhat in response to the rapid decline in wheat prices, but early indications call for little cutback in acreage. Russia, for example, apparently planted 10 million more acres (11.4 percent) of winter wheat this fall than last fall.

Exports Down

The effect of the higher world production on United States exports is readily apparent. Wheat inspections have averaged only 1.5 million bushels per week four weeks. Total exports for six months of the crop year fell to only 530 million bushels.

Durum Mill Grind

Month	1976 in 000's		1975 in 000's		Durum Minneap. 1976	Heat Price 1975
	Semo/Flour	Bushels	Semo/Flour	Bushels		
January	1,306	3,063	1,320	3,219	4.61	6.29
February	1,452	3,318	1,159	2,816	4.69	6.24
March	1,409	3,249	1,048	2,528	4.68	5.98
April	1,062	2,431	993	2,549	4.43	6.39
May	1,062	2,544	1,069	2,615	4.25	6.29
June	1,143	2,581	921	2,195	4.23	5.37
July	1,043	2,438	999	2,482	4.05	5.58
August	1,329	3,186	1,281	3,182	3.51	6.23
September	1,497	3,293	1,260	3,031	3.33	5.89
October	1,355	3,012	1,492	3,392	3.16	5.26
November			1,124	2,463		4.67
December			1,297	2,521		5.86
% Gain	9.6	3.9	-3.6	0	Avg. 4.09	

million bushels from last year's pace. Looking ahead, there appears to be some danger of pricing United States wheat out of the world market, if the loan rate becomes the floor on United States wheat prices. If loan rates are raised further next year, the likelihood of this development increases substantially.

United States durum is at distinct competitive disadvantage in world markets, particularly with record Canadian and Argentine crops. Argentina is widely thought to be the only export customer for sizable quantities in the coming months and Argentine durum is the likely source.

Egg Prices Rise

Shell eggs, in keeping with tradition, were cheapest in the spring. They were quoted in mid-April in the Central States at \$10.50 per case for the best run, 60¢ a case higher in the Southeast. Then they sustained a steady rise right until the end of the year, hitting \$17.10 to \$18.60.

Frozen whole eggs were as low as 35¢ per pound in the Chicago market in mid-April. They were as high as 55¢ in November in New York. Dried whole eggs sold for \$1.49 per pound in New York in March. They hit a high of \$2.47 in September before coming off. Dried yolks commanded a couple of pennies more reaching a high of \$2.50 per pound. Frozen whites were 19.5¢ in Chicago in mid-April. They rose to 31¢-35¢ in November.

As Does Paper

The paper industry, which has been plagued with rising costs and soft demand in many key product areas, has a few major capital expansion projects underway or on the drawing board. This could result in paper product shortages early in 1978 and price increases the first quarter of 1977.

Most economists are forecasting a 5 to 7 percent rate of growth in the Gross National Product in 1977. The rate in 1976 is expected to be about 6 percent. A Paper Institute Survey predicted paper and board capacity would increase only about 2.2 percent annually over the next three years, considerably below the 4 percent annual growth rate in the 1956-to-1969 period. At the same time most companies concede that current economic conditions simply do not justify construction of new mills.

In his testimony before the Council on Wage and Price Stability last spring, International Paper's Chairman, J. Stanford Smith, noted that the industry is an extremely high user of energy and chemicals and that it devotes a large portion of its capital resources to pollution abatement. He also stated that the industry's capacity to acquire debt to finance expansion "has been relatively exhausted in recent years." But because current rates of return are "inadequate," Mr. Smith told the Council, "there is little prospect that the needed resources will flow into the Paper Industry segment in the form of equity capital."

Energy

After three years of devious and often confusing debate over energy policy it may be that we are moving towards a consensus. While campaigning Jimmy Carter pointed to a number of goals for energy—among them increased reliance on coal, more conservation, and greater protection against another oil embargo by stock piling crude.

It is hoped that some order can come out of the chaos because at present fifty-two federal departments and agencies of federal government deal with energy. Over four hundred state and city agencies have energy offices. One hundred fifty non-governmental organizations deal with energy.

Consumerism

Consumerism will continue to be one of the hottest topics on the American scene. Twenty-nine major government departments and agencies have consumer affairs offices. Over fifty congressional committees and sub-committees have consumer jurisdiction.

At Food Update Fifteen, Dr. Philip L. White of the American Medical Association, declared: "Tell the consumer why you do what you do, and if it cannot be justified, don't do it. Remember that the informed consumer can make judgments; the uninformed consumer makes accusations."

Band Together

Because of the complicated socio-economic-political society we live in, it is essential for businessmen within an industry to band together to plea their cause and tell their story. Hence in 1977, the programs of the National Macaroni Manufacturers Association

and the National Macaroni Institute will be vital. They will be discussed in detail at the Winter Meeting at Boca Raton, Florida, February 9-13, 1977.

Fabled Future:

Among the latest batch of Russian stories making the rounds is one from U.S. News & World Report:

At a party congress in the future it is announced that Communism has triumphed everywhere. Even the United States has just chosen a Communist President. The Delegates are dancing in the aisles, cheering themselves hoarse, except for a lonely old man sitting in a corner. "Comrade," asks one delegate, "Why are you not cheering?" "I was just wondering," answers the old man, "where are we going to buy our wheat next year?"

Industry Survey

Morton Research Corporation, 1745 Merrick Avenue, Merrick, New York 11566, has just issued an Economic Marketing and Financial Study on the Macaroni Market which they are selling for \$125.00 per copy.

The report has twelve parts. First is an Overview, which notes that demand for pasta products is soaring both here and throughout the world. Shipments have more than doubled during the past five years, after ten years of very little change. Morton projects this soaring market to double again by 1985.

Citing Census figures they note that the tomato sauce market has doubled from 1958 to 1972.

Further, they find growing competition taking place from outside the macaroni industry. Producers of other foods are now reporting sales of over 30 million dollars in spaghetti compared to less than five million dollars back in 1958. Prime producers of pasta products are reluctant to diversify into other food areas.

They note a sharp decline in plant and equipment spending during recent years but predicts a rise in volume and better prices should encourage producers to reverse this trend. Noodle products, though still a small portion of the market, have grown at a faster rate than the rest of the industry in recent years.

Industry Survey

(Continued from page 5)

In commenting on the economic structure of the industry, it is noted that operating margins began to decline in 1973, reflecting sharp increases in the cost of materials, specifically durum wheat and packaging.

Census data indicates the industry employed about 7,100 people in 1973, of which 5,100 were production workers. The value of output per production worker has been rising steadily, but has been more than offset by rapidly rising wage rates in recent years. Average hourly wages reached \$3.46 during 1973. A Wage and Policy Survey just completed by the National Macaroni Manufacturers Association, as of November, 1976, indicates that it has risen sharply since then.

Stable Prices Predicted

The major ingredient used in the production of pasta is wheat flour, which represents over half of total material costs. It is stated: "During the past several years, domestic supply of wheat and wheat flour was very flat, due to low wheat production coupled with very high level of exports. As a result, prices for this commodity rose sharply. However, during 1975, prices of wheat and wheat flour began to weaken considerably, as sluggish demand, coupled with an increase in production began to loosen the tight supply situation."

As a corollary it is noted that macaroni product prices were relatively weak prior to 1973, but as wheat prices soared, finished product prices were raised sharply to pass off the increased costs. The statement is made: "Barring an unforeseen wheat shortage, prices should remain fairly stable relative to other food prices during the coming decade."

Concentration Rising

It is reported the level of concentration in the industry has been rising steadily. In 1972 the top four companies accounted for 34 percent of total industry sales, a significant increase from 25 percent in 1954. During that same period, the top eight companies' share of market rose from 37 percent to 50 percent.

In discussing world trade it is noted that imports have nearly quadrupled over the past five years and amounted to about 3.2 percent of United States

consumption in 1976. Canada and Italy are the largest suppliers, but Mexico's exports to the United States have skyrocketed in recent years. Exports have been on the decline and it is observed that Italy continues to be the world's largest producer with Japan and the USSR not far behind.

Advertising and Marketing

It is reported that advertising expenditures in major media increased slightly in 1975, but were still below the thirty million dollars of 1973. Expenditures for advertising frozen and canned products has been rising sharply in recent years while expenditures for dry products has declined.

Brand preference surveys were cited for six major markets, plus a survey of New York supermarkets with brands carried, space allocated and retail prices given.

A listing of some nine new product items are tabulated for the past year.

The final section on company description and report of recent activities leaves something to be desired. It is stated that the information was abstracted from company annual reports, financial services, and magazine and newspaper clippings. If this is the case then several macaroni firms should be doing a better job of putting their public image forward.

The Editor of the Macaroni Journal has observed that there has been a sharply increased interest in the macaroni industry and requests for information about companies in it. This report should fill the bill for those who want statistics gathered all in one place.

Changing Food Mix

The food mix has undergone changes as demand has increased for some foods and waned for others during the past decade. And more changes are coming. Specifically:

Dairy products—Most of the 3% decline in per-capita consumption during 1965-75 can be explained by a declining proportion of children, and the resulting drop in milk drinking. Fluid milk consumption is likely to continue downhill as the teenage population shrinks, older adults increase numerically, and the birth rate remains stable or decreases. Greater numbers of teenage boys were responsible for a boost in ice cream consumption, but the whopping 35% boost in cheese consumption is due to a variety of factors—more older

men and women, increase in popularity of pizza, greater sophistication in taste for cheese, and access to more cheese varieties.

Meat and poultry—Red meat intake was boosted by the high numbers of teenagers, particularly boys, and the increased proportion of adults—again, particularly male. Poultry age has less impact except that very young children obviously don't eat as much as older people. Based on an increasing number of smaller households in the future, both red meat and poultry will continue to increase—but more slowly.

Eggs—Men of all ages—the primary target of cholesterol concern—have apparently cut down on egg eating, perhaps out of concern for their health, or perhaps simply because of "eating breakfast on the run."

Potatoes, vegetables, fruit—Potato consumption, now high, will decline because of the greater share of older women (traditionally low potato consumers), and the increasing number of small households. Contrary to the usual trend, potatoes are one of the few foods eaten less by single-person households than by larger ones. However, persons living alone do eat more other vegetables and fruits than do other persons. Therefore, a continuing but somewhat slower increase in fruit and vegetable consumption is projected.

Flour, cereals, baked goods—Future population trends indicate a slight increase in consumption of flour and cereals, followed by a net decline by 1990 as young men and teenage boys become scarcer. However, for other baked goods, more high-consuming smaller households should offset the effect.

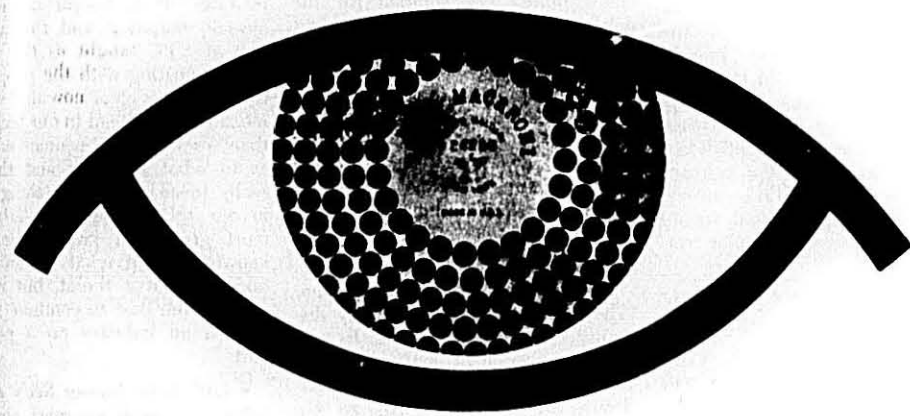
Sugar and sweeteners—Consumption should decline from current high levels as young people's population mix declines. If the taste for soft drinks developed by today's teenagers remains in later life, this would help sugar/sweetener consumption.

Teenage Shoppers

Family food purchases by teenagers have increased sharply as more mothers enter the labor force. This is one of the findings of Seventeen magazine's study of the buying habits of 2,000 teenagers. More than 70% of teenage girls now shop for food

(Continued on page 8)

Looking for profits in '77?



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Teenage Shoppers

(Continued from page 6)

each week, compared with 60% in 1972. They plunk down 38% of the total family dollars spent on food vs. 20% in 1972. The questionnaire found that with teenagers preparing an average of five meals a week, certain shopping habits are well defined. For instance, more than 60% of the sample shopped for specific brands, while more than 90% said taste and quality were important in product selection, followed by past experience with an item, its price, and nutritional value. Price had been the primary consideration in the 1972 survey. Soups, cold cuts, pizza, and frozen vegetables are the most popular convenience foods.

Issues for the Future

Major issues facing the food industry were analyzed by prominent people both inside and outside the industry in a film presentation produced by Family Circle and presented to members of the National Association of Food Chains at their recent meeting in Los Angeles.

Entitled "Issues for the Future," the 30-minute film featured interviews with chain store executives, government officials and others, each of whom gave his answer to two basic questions: What do you think the issues of the future will be? And what should the industry do about these issues?

Some of the observations made in the "Issues for the Future" film:

• **Grant Gentry, President, A & P:** "Our ability to live with the government and its many regulations represents one of the great challenges we have to face. We are trying to make the government more aware of what their restrictions do to us, that doing business. With our low profit these restrictions increase the cost of margins, we have no options but to pass these expenses along to the consumer."

• **Congressman Tom Foley:** "There seems to be a determined attitude on the part of many members of the public to feel that food prices alone of all living costs should be stabilized, if not actually reversed. One of the persistent problems in the food industry will be to explain the inevitability of increasing food costs in re-

lation to our inflationary environment. There seems to be a different attitude towards inflation in food than with other costs of living."

• **Byron Allumbaugh, Ralphs Grocery Co.:** "The major chain stores of America need to focus on how they can serve the needs of the minority communities. The solution for the most part has been that if you operated in the inner cities, to leave, and if you didn't operate in the inner cities, you don't go in! This is not a practical solution, either from the standpoint of serving the needs of consumers who live in the inner city, nor from the standpoint of the industry—which should learn to serve this vast segment of society in a profitable manner."

• **Calvin Collier, FTC Chairman:** "The future will not be terribly dissimilar from the recent past. In particular, government activity in the area of labeling and information disclosure to consumers will go on. There will continue to be a demand of the government that certain kinds of information be made available to consumers in connection with the decision on what to feed their families. I think also that the trend towards making sure products are safe, and to continue to be safe, is something that the government is going to be involved in for the foreseeable future."

• **Joe Danzansky, President, Giant Foods:** "I think insofar as our labor friends are concerned, we have to explain to them what it is we're driving at. We have to explain that we're not driving at this new capital intensity with the thought of replacing present jobs. We have to take advantage of the technology that's with us, and we have to convince them of that."

• **Aileen Gorman, National Consumers Congress:** "Right now we're seeing a period where food prices are not increasing so much. So far as the customer is concerned I think there is a lowered temperature. People aren't quite so irate. But I think that if we once again start seeing prices shoot up, you will find consumers getting irate again. The first place they will point a finger at is the supermarket, because that's the place they have the most contact with. The industry can alleviate this problem by educating consumers as to why prices

are going up, how new regulations and the metric system will affect them. The point of purchase can be a good place to educate the public. However, we should not throw the total burden on the retail food industry."

• **Bill Chisholm, Supermarkets Interstate:** "If it taught us anything electric scanning and the introduction of UPC taught us the need of communicating with the people most involved. It is clear now that we were much further ahead in our technology than we were in consumer education as to what scanning and the UPC really mean. The same thing is true in our relationship with labor. We must give both groups the secure knowledge that what we are undertaking is not a threat, but rather a need on our part to continue to function as an industry on a profitable basis."

• **Earl Butz, former Sec'y of Agriculture:** "I think we react negatively in the food distribution process and business. We react rather than act. We've got a great story to tell. When we take the entire food industry from producer through processor through distributor through retailer, it's a marvelous story. American people are the best fed people any place on the face of the earth, with the lowest share of their take-home pay spent for food, with all the built-in maid service we get—with one third of our meals eaten outside of the home, and that not for free. Let's be positive, let's tell that story. Let's indicate that competition really works in this food industry."

Profits

Dr. Richard I. Leshner, National Chamber of Commerce president, notes that it takes about \$1,000 to create a job. He quotes Samuel Compers, father of the modern American labor movement: "The worst crime a corporation can commit against the working man is to fail to make a profit." However, Dr. Leshner noted, over the last decade inflation-adjusted profits have fallen almost three percentage points as a percentage of the Gross National Product. "To be adequate, profits will have to rise to 6½ or 7 cents per sales dollar from their current 5½ cents," he said.

Something New Has Been Added

It is with great pride that I announce that the 400 million dollar conglomerate, Wheelabrator-Frye Inc., of which the A.L. Garber Company is a part, has sponsored and supported the Rossotti Packaging Systems and the Rossotti principles of good packaging. To my friends in the Macaroni Industry, this means the continuation of all the Rossotti packaging principles, including graphics of good packaging, all the production principles and procedures, warehousing and delivery facilities of high standards.

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Independent Grocer Attitudes

Attitudes and opinions of independent grocers on a number of topics affecting food store retailing are detailed in the annual survey of members of the National Association of Retail Grocers of the U.S.

The survey, which includes several questions of interest to baking, was conducted for N.A.R.G.U.S. by Arthur Leemis Marketing Consultants, Oak Brook.

A total of 420 companies, representing 1,042 retail stores, participated in the survey, N.A.R.G.U.S. said. "This report," it said, "is not intended to represent the thinking of the entire retail grocery industry. However, it does present the viewpoint of the independent retail grocer, whether affiliated or independent, accounting for approximately one-half of the total grocery sales in the U.S."

The 54-page survey includes responses to questions under several major categories, including wholesaler relations, customer relations, employee relations, manufacturer relations and store operations.

The survey shows that 44% of the primary dry grocery suppliers servicing the independent grocers in the survey offered baked foods, compared with 100% for dry groceries, 94% for frozen, 71% for produce, 81% for dairy, 44% for milk and 65% for fresh meats.

Sales of private label

The section on customer relations includes the question: "What has happened to overall sales of private label products compared to a year ago?" The survey shows 48% reporting an increase in sales, 5% reporting sales remaining about the same, 11% reporting a decrease and 8% stating that private label is not carried.

Number of responses indicating private label sales increases ranged from 37% in the East Central to 60% on the West coast, while number indicating decreases ranged from 6% on the West coast to 15% in the North East.

The survey included four questions on shopping habits, with responses, as follows:

"Today are shopping lists being used more or less than a year ago?" More, 61%; Less, 5%; Same, 34%.
"Today is there more or less impulse buying than a year ago?" More, 18%; Less, 52%; Same, 30%.

"Are customers more or less price conscious than a year ago?" More, 67%; Less, 15%; Same, 18%.

"Is there more or less reaction to price increases this year?" More, 28%; Less, 48%; Same, 23%.

Evaluate Services of Salesmen

Salesman services are evaluated in the manufacturer relations section of the N.A.R.G.U.S. survey. The question, "Of the various services a salesman performs for your store, which do you consider most valuable?" brought the following responses:

Information on upcoming deals, 32%; introduce new products, 20%; issue credits for damaged or spoiled merchandise, 16%; build displays and re-set sections, 12%; rotate stock, 12%; information on buying situations, 11%; check inventory and out-of-stock, 7%; service their own merchandise, 7%; bring discount checks, 1%.

Comparison of services

In the store operations section, 6% of the respondents listed "bakery" as a service offered that is not offered by the store's most important competitor. Other responses included carry out service, 30%; good service, 12%; better, fresher meats, 9%; friendly employees, 8%; delicatessen, 6%.

The survey also examined competitors' services by asking, "What customer service does your most important competitor offer that you do not?" Leading the responses was "bakery," with 8%; followed by delicatessen and longer hours, at 7%; better selection, 5%; better prices and larger store, at 4%.

Average sales \$2.5 million

Frank Register, executive director of N.A.R.G.U.S., said annual sales volume of the average store in the survey is \$2.5 million while average size is 12,500 square feet. Of the survey participants, he said, 56% are one-store operations, 29% have two to four stores and 15% have five or more stores. The survey shows that 68% of the stores are operated in small towns and rural areas, 22% in medium-size cities and 12% in metropolitan cities or suburbs.

Nabisco' Blitz Advertising

Nabisco's Market Research Executives at the Biscuit division, under the direction of President Robert J. Powelson, have come up with a new idea for improving margins. Using

a computerized technique called "Probr," Nabisco began to measure the impact of increased advertising on sales of long-established products. With small expenditures, some as low as \$50,000, Powelson began experimenting with saturation advertising aimed at very small population segments. "The results were amazing," Powelson said. "We found that the whole cookie and cracker business was underpromoted."

Ritz Blitz

Nabisco began to learn how to increase consumption much faster than population growth. "We'd go out on individual brands," says Powelson. "like our 40-year-old Ritz crackers and we'd see the total line, which has been growing at one or two percent age points annually turn into growth rates of five, six and seven percent. There was also a carryover for Nabisco's competitors. "We made the whole market grow. It was a question of how high 'up' could be," Powelson said.

On its Ritz blitz, for example, Nabisco chose six disparate geographic markets to push the cracker, relying on heavy television and store promotions which emphasized the slogan "Everything goes better on a Ritz." The buying habits of the six areas, representing 3.2 percent of the U.S. adult population, were closely monitored throughout the year-long study. A control group's purchases were similarly fed into the computer. The study showed a 16 percent increase in Ritz purchases in the areas that were exposed to the advertising barrage. From those data, Nabisco extrapolated the effect of heavy national advertising on Ritz sales and altered its promotions accordingly.

More New Products

The probes also encouraged Powelson to introduce new products at faster rates, even though these new products might cannibalize their old Nabisco purchases. There was some degree of cannibalization, Powelson admits. "After all, we talk of share of market, but there's also share of stomach. But we're not seeing even what we had expected in drops in other purchases." The studies led Nabisco to raise its advertising budget from \$57 million in 1971 to almost \$100 million in 1976, putting it 16th among U.S. advertisers.



Spaghetti doesn't kid around when it comes to digging into good tasting, nutritious pasta dishes.

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a real
spaghetti
expert.**

Sure, it has to look good, and of course it has to taste delicious.

But even a 7-year-old "expert" probably doesn't know how pasta gets to tasting so good. That's why it's good to have Amber Milling around. Our milling and quality control experts make sure your pasta operations have a reliable source of semolina and durum flours milled from the choicest durum wheats... Venezia No. 1 Semolina, Imperia Durum Granular, or Crestal Fancy Durum Patent Flour.

Amber also makes it easier to control your production schedule by meeting your specs and making shipments when promised.

When it comes to eating pasta, everybody's an "expert." When it comes to making good pasta products, you're the expert; and when it comes to making good semolina and durum flours, Amber's an expert. Call Amber, now!



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Create Convenience Meals With Pasta

Cover Photo

Convenience is a kitchen keyword as statistics reveal an increasing number of women working outside of the home. Economy is also a watchword as food prices continue on an upward swing. Taking these two factors into consideration plus the fact good nutrition is foremost, presents a challenge to today's homemaker.

The National Macaroni Institute recommends convenience dishes created in your own kitchen. A savory chowder of elbow macaroni, tuna, cheese, milk and vegetables is a fine example. Everything cooks together in one-pot—and takes but about half an hour from start to finish. Along with a salad and crusty bread, the chowder is a satisfying lunch or supper.

Skillet specialties also fall into convenience categories. Try a combination of elbow macaroni and chicken tastily cooked with green pepper and onion. Vegetable juice cocktail, garlic, cheese and basil team as complementary seasonings.

Macaroni products provide protein, and are excellent partners with other protein foods—meat, fish, eggs, cheese. Approximately 80% of all macaroni is enriched, and offers thiamine, riboflavin, niacin and iron. The carbohydrate content supplies energy.

One-Pot Macaroni and Tuna Chowder (Makes about 2 quarts)

½ cup chopped green pepper
1 cup chopped onion
3 tablespoons butter or margarine
3 cups water
½ teaspoon dried basil leaves
1 teaspoon salt
¼ teaspoon pepper
2 cups elbow macaroni (8 ounces) uncooked
½ pound sharp Cheddar cheese, grated
1 can (7 ounces) tuna, drained
2½ cups milk
½ cup chopped parsley
paprika, optional
Parmesan cheese

In a 3-quart pot, saute green pepper and onion in butter until crisp-tender. Add water and seasonings; bring to boil. Add macaroni gradually, so that water continues to boil. Cover; reduce

heat and simmer until macaroni is tender, about 10 to 12 minutes. Stir frequently. Remove from heat; add cheese and stir until melted. Flake tuna; add tuna and milk to pot. Heat but do not boil. Sprinkle with parsley and paprika. Serve with Parmesan cheese.

Push Pasta

National Macaroni Institute advertising to grocers in Supermarket News says:

Related Sales Idea No. 6

Push Pasta and Tuna in March. \$1.00 worth of elbow macaroni sells \$7.99 in related items.*

*Based on a Macaroni-Tuna salad recipe.

Spaghetti Eating Contests

Can you eat a plate of spaghetti faster than anyone else without making a mess?

That's the challenge Hunt's Prima Salsa will be making across the country with spaghetti eating contests to be held in major cities between November and February.

Part of an over-all publicity program for the brand, the contests will be open to the public and will be held in large enclosed shopping malls on Wednesdays and Saturdays.

Contestants will eat a measured portion of spaghetti while wearing a Scorecard bib marked in squares. A contestant's score will be determined by the number of seconds he took to eat the spaghetti, plus the number of spattered squares on the bib. Low score wins.

A contest will be held with 10 people every 15 minutes, and the winners of individual contests will be in finals held later in the day. The contests will be judged by the Hunt's Prima Salsa traveling representative and two local personalities.

Prizes

Sixteen prizes will be awarded at the finals: first prize \$200; second prize \$100; third prize \$50; and 13 honorable mentions, \$5 each. Additionally, coupons good for 10¢ off any size Hunt's Prima Salsa will be distributed at all contests.

Publicity announcing the contest will include display posters in stores at the shopping centers, mailers to the media, clubs, schools, and civic organizations, and 30-second radio commercials twice each day on two

stations during the two days preceding each contest.

Post-contest publicity will also be extensive. Winner's names, photos and a wrap-up story of the event will be provided all media shortly after the contest.

A full-color page ad for Prima Salsa in January Family Circle continues the national ad campaign for the product.

Creamettes Use Checkerboard Ads

Vincent Price, actor and internationally known gourmet, is telling Family Circle readers that Creamettes pasta products "use only hard, lean wheat so Creamettes never stick together or taste starchy."

The message is being made via full-color "checkerboard" ads appearing in December and January issues of the magazine. The ad features a special macaroni casserole recipe for "Vincent's Supper Casserole."

Price has signed a three-year contract as advertising spokesman for The Creamette Company. In addition to the magazine ads, he is appearing on television, in newspapers and on point-of-sale materials.

Economy

"How to eat well without eating up the budget" is the headline of a Kraft's Macaroni & Cheese Dinner ad appearing in the January issue of Family Circle and other national magazines.

The full page, full-color ad is part of a sustaining campaign for Kraft Dinners which emphasize economy and highlights serving suggestions.

The ad invites Family Circle readers to try Macaroni & Cheese Dinner with a ham slice rolled around a dill pickle spear for a meal that's as delicious as well as thrifty.

Keys to Salesmanship

Five key areas form the foundation of effective professional selling. These are:

1. You must want to succeed.
2. You must get along with people.
3. You must exercise self-discipline.
4. You must develop selling skills.
5. You must have product knowledge.

Conscious and continuous development of these attitudes and skills is the mark of the professional.

If you want uniformity call the durum people



Durum is our middle name . . . uniformity is our game. If you have a formula that is successful, you want the same uniform results every time. We continuously test our product to give you the uniformity you desire. You can depend on the durum people. You start with the best when you order Durakota No. 1 Semolina, Perfecto Durum Granular or Excello Fancy Durum Patent Flour. And you get the same uniform quality every time. Call us for uniformity.

the durum people



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Durum Export Markets

by Dale Douglas, Director, Grain and Seed Division,
Foreign Agricultural Service, U.S. Department of Agriculture
at the U.S. Durum Show

Though I have had an association with the U.S. wheat trade for many years, this is my first visit to the heart of the durum wheat area. I would like to discuss with you some aspects of the international wheat market and share some thoughts on market development.

This year you farmers have produced another bumper grain crop—some 183 million tons of feedgrains, a little below last year, and some 56 million tons of wheat (2,127 million bushels), slightly less than last year's record crop.

In recent years all of the increase in U.S. grain production has gone into larger exports. During the 1975/76 marketing year just ended, the United States exported a record 81.6 million metric tons of wheat and feedgrains. This is nearly double the quantity exported only 5 years ago.

Leading Earner

For the United States the grain export business has grown into a multi-billion dollar enterprise. Our grain exports have become our leading earner of the foreign exchange which is needed to purchase the foreign industrial products, tropical foods and the petroleum which enables us to maintain our high standard of living. In dollar terms, U.S. agricultural exports reached an all time high of \$22.1 billion in the past fiscal year. This was an increase of 3 percent over fiscal year 1975 which saw a record \$21.6 billion worth of U.S. agricultural products exported. For three years now, our agricultural exports have been more than \$21 billion. This becomes even more impressive when we consider that as recent as fiscal 1971, our agricultural exports amounted to but \$7.8 billion. But even more impressive is the fact that nearly \$12 billion worth of the U.S. agricultural exports during the fiscal year which ended June 30 were composed of grains alone, which in value were nearly equally divided between wheat and feedgrains.

The increase in U.S. grain production has come about because of one

factor: higher grain prices for farmers. Higher prices for both wheat and feedgrains during the past several years have caused American farmers to bring more land into crop production—about 40 million acres since 1972.

Lower Prices

Now we are faced with the fact that this year's larger world grain crop has resulted in lower grain prices in the United States.

Although the prices which you farmers are currently receiving for your wheat is down from a year ago, your costs are not. Prices paid by farmers during September were 5 percent higher than in the same month a year ago. Meanwhile, the average hourly earnings of production workers in manufacturing were up 8 percent from a year ago.

The world food situation is much better than it was two years ago, but not so improved that we can lower our guard without running high risks that the problem might reappear in the form of even larger food deficits than we saw 2 years ago.

The Department of Agriculture presently estimates world production of wheat, feedgrains and rice to be some 1,280 million metric tons in 1976/77. Although this will be about 60 million tons (5 percent) higher than a year ago and 80 million tons (7 percent) greater than 2 years ago, it will be only 30 million tons more than 3 years ago.

Improvement in Russia

Much of the increase in world grain production this past year can be accounted for by a better crop in the Soviet Union. Last year, the Soviets harvested only 140 million metric tons of grain. Our current estimate in the Agriculture Department of the 1976 crop in the Soviet Union is 215 million tons.

Better world crops this year will result in a buildup in world grain stocks during 1976/77. But carryover stocks at the end of 1976/77 will be much smaller for the world as a whole than those of a decade ago. For ex-

ample, we in the Agriculture Department presently estimate world stocks—excluding those in the Soviet Union and the Peoples' Republic of China—of wheat, feedgrains and rice will be around 134 million tons at the close of the 1976/77 crop year. There will be a buildup of 11 million tons above the stocks at the end of the crop year just ended, but far below the 207 million tons of stocks on hand at the close of the 1968/69 marketing year.

All this would seem to indicate that you farmers should be getting a better price for your wheat than you are now receiving.

You will need to get better prices if the American public and the world want you to continue to produce at your full capacity.

Durum Hard Hit

You durum producers are especially hard hit.

The acreage seeded to durum in 1976 is estimated at 4.7 million, down 2 percent from the record of a year ago. Here in North Dakota, the leading durum producing state, acreage was down nearly a tenth. Planting in Montana and South Dakota were also down. These reductions were largely offset by the expansion of new durum areas in the Southwest—Arizona, California, and New Mexico. Consequently, although acreage was lower this season, yields per harvested acre are up because of the sharp expansion in the irrigated western area.

On October 12th Crop Reporting Board forecast this year's durum production at a record high of 136 million bushels, 10 percent larger than the 1975 crop and 67 percent above the 1974 production. Though acreage was down 2 percent from last year, average yields increased 3.2 bushels per acre from a year ago.

A durum crop this size, coupled with a carryover that is double last season's, places our total supply of durum about a fifth above the 1975/76 level.

Domestic grind is expected to rise moderately above the 1975/76 level.

(Continued on page 15)

because durum and semolina are now priced competitively with hard wheats and flours. With relatively large world supplies available for export and favorable durum crops in North Africa and the USSR, U.S. durum exports may fall under the 52 million bushels of 1975/76. The North African area has accounted for nearly half of our reports in recent years.

Stimulating Sales

The Department of Agriculture has taken several steps aimed at stimulating export sales of wheat. The use of wheat and flour have been stepped up in the Food for Peace program. More short-term export credit is being made available for wheat from the Commodity Credit Corporation (CCC).

The Food for Peace program—more commonly called the P.L. 480 program—provides food assistance to needy countries through the granting of long-term, low-interest credit. In the fiscal 1977 budget, funds have been allocated to export 3.6 million metric tons of wheat and flour under Title I of P.L. 480. This will be about a million tons more than was reported under Title I of P.L. 480 in fiscal year 1976. About 79 percent of the fiscal year 1977 P.L. 480, Title I budget has been allocated to wheat and flour.

The CCC short-term export credit program has been increased to \$1 billion in fiscal year 1977. This is about \$100 million more than in fiscal 1976. Over 45 percent of the 1977 budget will be used for wheat exports, whereas wheat accounted for only 21 percent of the overall fiscal 1976 program.

Market Development

Market development efforts for wheat are also being intensified. The wheat growers of the United States since the late 1950's through two export associations have been servicing and expanding overseas markets for their wheat crops.

Great Plains Wheat, Inc. is one of the associations. It is headquartered in Washington, D.C. and maintains two overseas offices. One is located in Rotterdam, The Netherlands, and is the regional office for Europe, Africa and the Middle East. The second office is in Caracas, Venezuela and

serves as the regional office for South America, Central America and the Caribbean.

The other association is Western Wheat Associates, Inc. which has its central office in Portland, Oregon and a liaison office in Washington, D.C. It operates in the Far East under the name of Wheat Associates, USA, with offices in Tokyo, Japan; Manila, Philippines; Singapore, New Delhi, India and Seoul, Korea.

The two associations, each looking to a different part of the world, work closely together in carrying out coordinated programs.

For both cooperators, their internal operations are financed by wheat producers through a self-imposed assessment on each bushel of wheat they market. Their overseas operations are primarily financed by market development funds administered by the Foreign Agricultural Service of the U.S. Department of Agriculture.

In promoting U.S. wheat overseas, the cooperators have in general provided three broad functions—market information, consumer promotions and technical assistance. Through market information the importers and millers of other countries are kept currently informed of quality, availability and purchase terms for U.S. wheats. Consumer promotions are used in parts of the world where per capita consumption of wheat shows promise of increasing. Representatives of the organizations assist local miller and bakery associations in promoting greater consumer use of bread, cake, pasta and related wheat products. Through technical assistance millers and bakers of other countries are given professional technical guidance in turning out first-rate products from U.S. wheats. Also buyers, millers and bakers are brought to the U.S., individually or in teams, to get acquainted first-hand with U.S. wheat supplies and utilization techniques.

Foreign Outlook

Now a few words regarding changes in the foreign production, trading and consumption patterns in durum wheat.

Perhaps the most significant changes have taken place in the Mediterranean region. This is also the region of the world where pasta products are most popular. Within that region, Turkey is currently the largest producer of durum. Italy, also a pro-

ducer, has the distinction of being the world's largest consumer of durum wheat.

Morocco, Algeria and Tunisia have undergone considerable change in their production and trade in recent years. These North African countries were at one time rather substantial producers and important suppliers of durum to Europe. From exporters of durum they have become importers—importing in the neighborhood of a million tons annually.

Durum production is fairly stable in Western Europe—their production generally being something over 4 million tons annually. Amongst the West European countries Italy is the largest single producer, usually producing well over one half of the total. French production is generally some 500,000 tons annually. Western Europe has long been, and remains a large importer of durum. The region generally accounts for about a third of the total annual trade in durum. Within Western Europe, Italy, despite the fact that it is a large producer, is also a large importer of durum.

Near East

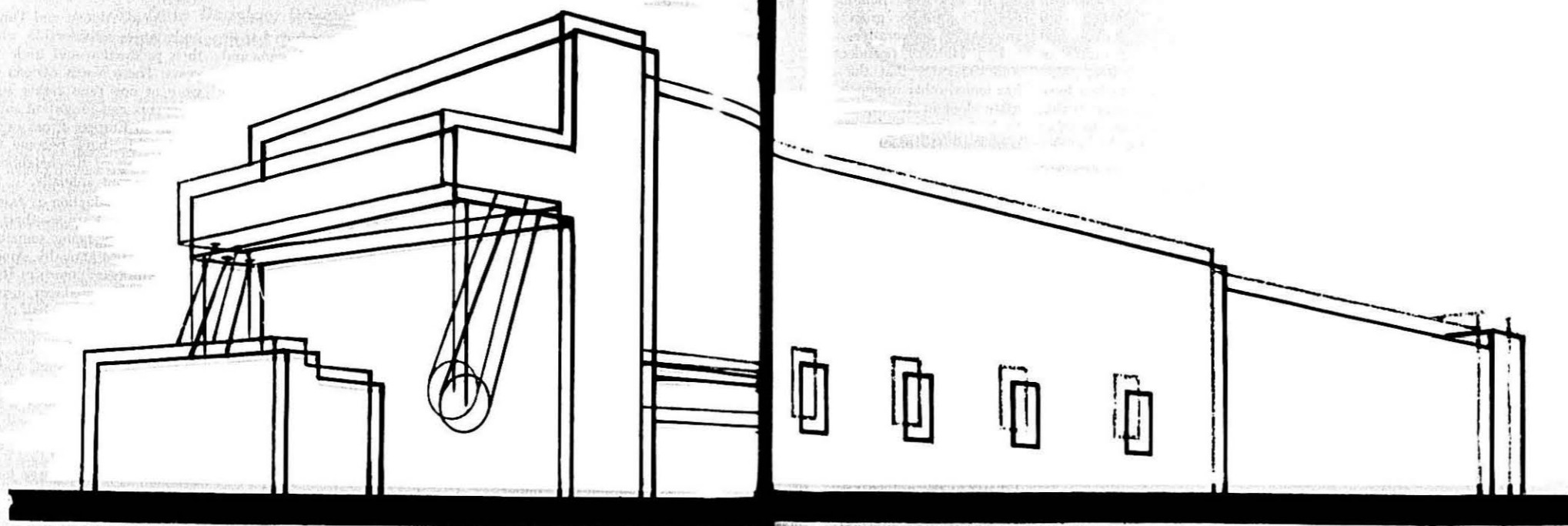
The Near East countries, particularly Turkey and Syria, are important in the overall durum picture because their combined production is generally over a quarter of the world total excluding the Communist countries. However, the Near East countries rarely have much of an influence on the world durum market since they produce mainly for their own consumption.

It is interesting to note that in North Africa and the Near East durum is used differently from that in Europe. Durum semolina in these areas is used to make the Arabic type bread, thus explaining why quality considerations are not so important.

An area of importance to the durum market and one about which the least is known is that of the Communist countries. It is fairly certain that East Europe and the USSR produce relatively large quantities of durum. They are an important consideration in the world durum market because of their buying activity during times when their own crops are poor.

From year to year the world durum trade follows a very irregular pattern.

(Continued on page 19)



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Durum Export Markets

(Continued from page 15)

It has increased from some one million tons in 1961 to something over three million tons annually. The growth is largely attributed to the considerable increase in imports into North Africa. The variations in the level of imports which we see from year to year are due almost entirely to the irregular purchasing practices of the Soviet Union and China. For example, the Soviet Union bought almost a million tons in 1972/73. The following year they bought only about 250,000 tons. Again, a year ago, they bought about a million tons.

China is also an irregular buyer. They tend to purchase durum only when it is priced cheaply relative to other wheats. In the Far East, the Chinese, like the Japanese, purchase some durum for noodle production. Again, quality is not the most vital consideration since they often make their noodles from normal hard wheat.

Current world demand in relation to stocks offer little cause for optimism, though with durum prices such as they are in relation to spring wheats—the demand for durum should return to traditional levels.

Durum wheat growers should be aggressively promoting their product in Italy, North Africa and the Near East. Modest results could also be expected from promotional activities in the Far East and Central America. I am glad to see that you are already taking steps in this direction as evidenced by the Italian Team with you today. Also I understand plans are underway to send a durum technician to Asia. These are steps in the right direction, and I wish you the best of success.

Market Promotion Trip

North Dakota State Wheat Commission Chairman Norman Weckerly of Hurdsfield, Commissioner George Smith of Amentia and Professor Len Sibbitt of the North Dakota State University Cereal Chemistry and Technology Department made a late fall trip to Europe and North Africa to promote durum and hard red spring wheat.

Weckerly noted that the millers, traders and processors in nearly every country visited agreed that demand

for U.S. produced wheat will be down somewhat this marketing year. "In the EEC countries we also heard widespread criticism of their own import levy system. The Italians said they would buy larger quantities of U.S. durum if the levy system didn't exist. It seems that the Italians have a greater problem operating within the EEC levy system than do other member nations," he said.

Smith and Weckerly also reported on questions they received in many countries, especially Russia, regarding export shipments of durum produced in southwestern U.S. states. The Russians complained about weaker gluten, lower moisture and semolina color they have experienced with such imported U.S. durums.

Best Hope in East

Both men agreed that the best hope for increased U.S. wheat markets lies in Eastern Europe and the Soviet Union. "The Soviet satellite nations cannot rely on the Soviet Union for their food needs every year. Historically, Russia wheat production has varied greatly from one year to the next. I think this is where increased sales promotion emphasis should be placed in the next years," Weckerly noted.

However, neither official counted Western Europe out as a good market for U.S. wheat and durum in the future. "This was a banner year for wheat worldwide," Weckerly stated. Smith added that it is extremely unlikely that all the world's nations can again have such simultaneous success in wheat production. "For example, the English millers we talked to told us that their crop this year was one in a hundred. Markets could turn around rapidly with adverse weather this coming crop year," He noted.

G.T.A. Meets

A national food policy protecting the interests of consumers and farmers and a stronger export posture on the part of farmer cooperatives were called for by delegates attending the annual meeting of Farmers Union Grain Terminal Association in St. Paul Nov. 30-Dec. 1.

More than 2,500 farmer-members attended the 39th annual meeting of G.T.A., an Upper Midwest grain marketing and processing cooperative based in St. Paul. Speakers at the

convention stressed that cooperatives must become more active in grain export activities, pointing out that only 7% of U.S. grain exports are shipped by cooperatives.

B. J. Malusky, president of G.T.A., told delegates that the cooperative has joined other regionals "to give us more clout in the export market and to focus more brain power on the problem." He emphasized, however, that continued investment of members is required to build or acquire facilities that will provide for a larger share of grain exports.

To support the expansion, Mr. Malusky urged continuation of G.T.A.'s grain marketing service, a plan for voluntary grain pooling by members.

Shows lower net savings

In a joint report with Jewell Haaland, G.T.A. board chairman, Mr. Malusky said that the cooperative had lower net savings in the fiscal year ended May 31 as a result of lower grain prices. Net savings for the year, at \$15,611,500, were the third largest in G.T.A. history, but off from \$29,178,948 in the previous year.

Net sales for the year came to \$1,161,976,821, against \$1,260,776,304 in the previous fiscal year. Volume of grains and oilseeds handled by the cooperative for the year amounted to about 281 million bus, Mr. Malusky said. Grain volume moved by G.T.A. in fiscal 1975 was 257 million bus, while in 1974 it was 326 million bus. Cash payments to farmers for the year were \$4,627,815, compared with \$7,087,294 in fiscal 1975.

G.T.A. sells grain on a commission basis from over 600 local cooperative elevators. The cooperative also supplies grain to its plants for malting barley, crushing oilseeds and milling durum wheat.

Mr. Haaland told delegates to the convention that cooperative need both involvement and commitment. Pointing out that production of broiler chickens, fluid milk and many other farm products is largely under contractual arrangements, Mr. Haaland said grain producers should give consideration to contracting at least a portion of their production for export.

Adopt food policy resolution

In a resolution, the delegates said a national food policy is needed to "undergird the family farm system of

(Continued on page 20)

THE MACARONI JOURNAL

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G.T.A. Meets

(Continued from page 18)

food and fiber production." Key elements of the policy would be "more adequate commodity loans, better target prices with deficiency payments if needed, storage incentives and an undated standby production adjustment plan."

The resolution also recommended a return to the commodity loan program in which Commodity Credit Corp. guaranteed storage payment of grain under loan to elevators. The delegates also called for participation by the U.S. in discussions leading to worldwide agreements on grain prices.

Record Canadian Crop

The Canadian wheat harvest for 1976 is estimated at a record 884.3 million bushels, up from 627.5 million bushels in 1975, Statistics Canada reported.

Of the total wheat estimate, durum accounted for 100 million bushels, up from 83.2 million in 1975 and 51.3 million for the ten year average.

Farming in Canada

Farming in Canada in the 1970s reflects the country's urbanized, industrial nature—capital investment in farms and degree of mechanization have risen in proportion to increased productivity.

Agriculture is an extremely important part of Canada's economy, accounting for 30 per cent of the activity in the primary industry sector. In terms of employment, it continues to be the leading primary industry ahead of forestry, fishing, mining and oil production. In 1973, more than twice as many workers were engaged directly or indirectly in agriculture than in all the other primary industries combined.

Dry Land Farming

Canada's special area of expertise is equipment for large-scale dry land farming, since 82 per cent of the country's farmland lies in the Western Canadian Prairies.

A broad range of farming is carried out across Canada with emphasis on five main types: dairy; livestock; grain; combination grain and livestock; and special crop farming.

While 82 per cent of Canada's farmland lies in the West, farming is

carried on in all provinces and the Yukon and North West Territories. Farms specializing in general livestock production are found mainly in Alberta and Ontario, and to a lesser extent in Quebec and Saskatchewan. Quebec and Ontario have the most dairy farms but almost half of Nova Scotia's farms are devoted to dairying.

General grain farms with such crops as wheat, rapeseed, oats, barley and flax are found mostly in Saskatchewan, Alberta and Manitoba. These provinces also have the largest number of farms engaged in a combination of grain and livestock production. The Prairie Provinces' most important crop is spring wheat, more than 23 million acres (9,308,100 hectares) of which were seeded in 1974.

Canadian Pasta Promotion

Public Relations Services Ltd.
by Una Abrahamson

The Canadian Pasta Manufacturers two press luncheons in Montreal and Toronto resulted in excellent and frequent use and mention of pasta in all media. The luncheons generated not only print features, but also full colour spreads in weekend rotos. A 30-minute TV film of pasta cooking was made by a well-known food editor for bicycling around a TV network. Other activities have included a number of radio broadcasts on pasta for budgets, pasta for entertaining, and pasta parties.

A request was made by a major utility company for their home economist demonstrators to visit a pasta manufacturing plant, and this was a successful afternoon. Pasta is now part of the food demonstrations given at their showroom cooking schools.

Leaflets

There are still continual requests for the first leaflet Pasta Fun and this is mailed in either English or French. On the press is the second leaflet: Pasta, Plain and Fancy. As before, it will be available in both French and English. In addition, there have been cooperative efforts with a number of other leaflets including one issued by the canned salmon industry, and the other, a large winery.

Pasta samples have been distributed to selected food writers on a regular basis for "testing and telling."

We have received excellent publicity in free editorial space since

August, 1976 in the leading daily newspapers and magazines which include:

The Toronto Star, Victoria Daily Times, Regina Leader Post, Winnipeg Free Press, Vancouver Sun, Kitchener-Waterloo Record, Stratford Beacon-Herald, London Free Press, Brantford, Expositor, Ottawa Citizen, Peterborough Examiner, Kingston Whig-Standard, Niagara Falls Review, Windsor Star, Edmonton Journal, Montreal Star, Sherbrooke Record, Weekend Magazine, etc., etc. (Weekend magazine has a circulation of 1,663,691).

It should be noted that these papers and magazines have given over the food columns more than once in the period.

Craft Accessory

During the Christmas season a series of articles on using pasta as a craft accessory were produced and were picked up by Canadian Press, the wire service that is received by all Canadian media. This resulted in tremendous coverage. In addition the Montreal Star did a full feature on this aspect using local children. The Toronto Star photographed a child pasta-crafter.

The Incredible Egg

America's egg producers, represented by The American Egg Board, introduce their first-ever nationwide advertising campaign for eggs with a full-page, four-color ad in January Family Circle.

At the same time, television commercials for "The Incredible Egg" will begin appearing in early evening news shows on all the major networks. The network schedule will be supplemented by additional spot commercials in the top 20 markets.

A nationwide radio campaign on the CBS and Mutual networks is also scheduled. And additional magazine pages will appear in Better Homes & Gardens, Redbook and Good Housekeeping.

Each magazine ad, including the first ad in Family Circle, will offer a prize-winning recipe booklet for just 25¢.

"The Incredible Egg" is a pretested campaign that has proven its ability to increase egg sales during tests in Chicago and St. Louis.

ASEECO BIN STORAGE SYSTEMS

BIN STORAGE

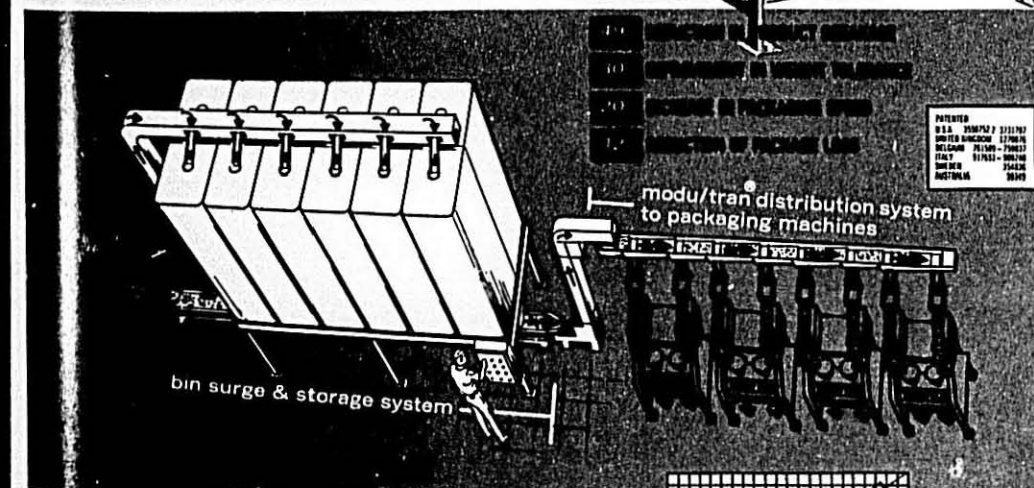
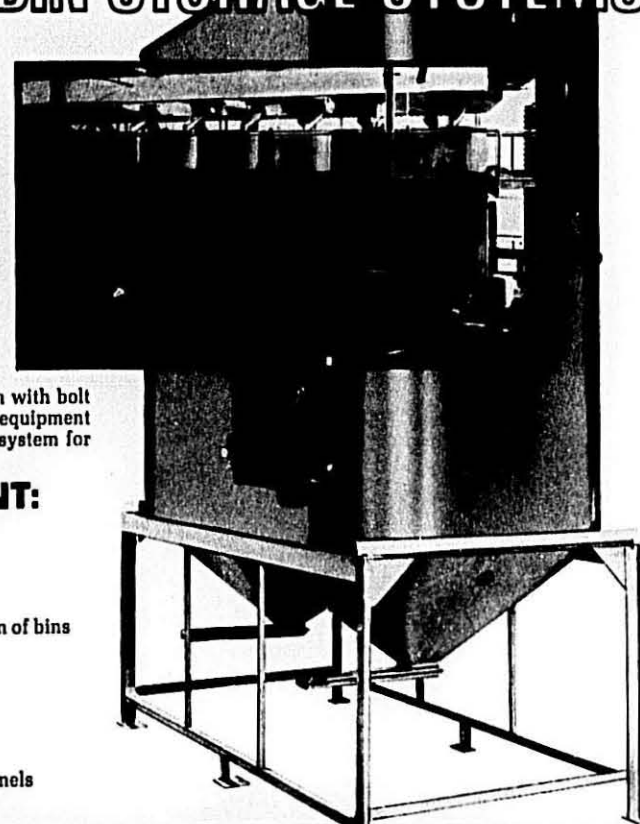
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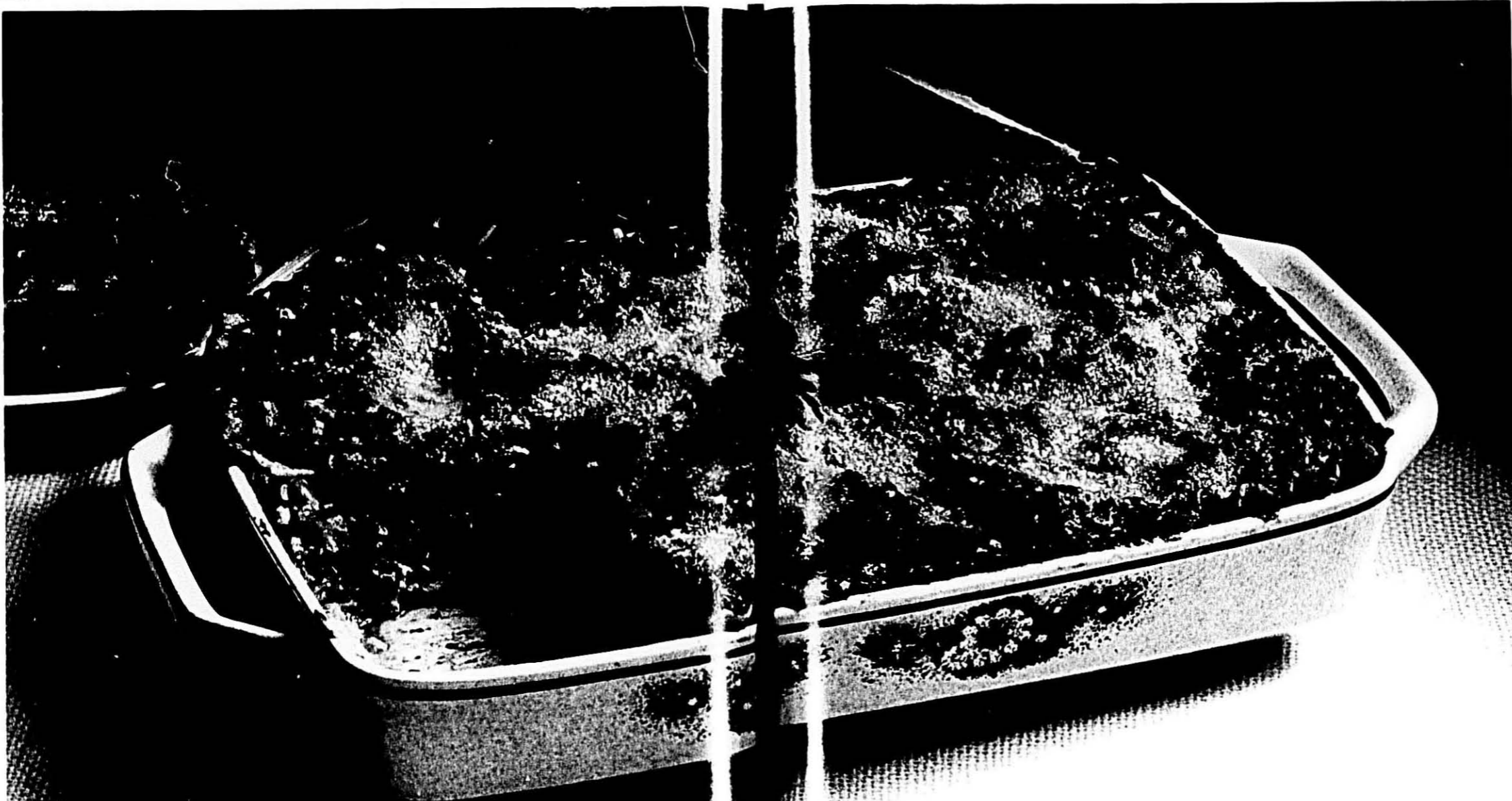


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Of Horseradish and Humility

by Dr. Phillip J. Wingate
a research chemist of the
Photo Products Department of the
DuPont Company

The civilized part of the human race in recent years has become frightened by chemicals and at times seems to wish that it could do away with them entirely. This is unfortunate for two reasons. First, it is not necessary, and, second, it is impossible.

The world is made up of chemicals, and the air above us as well as the oceans and continents around us are seething masses of chemical reactions. Happily, this has always been true, so there is nothing to be alarmed about. The human race grew tall and strong or soft and round, according to your preference, while exposed for countless centuries to all sorts of chemicals. In proper doses they do no harm and actually are necessary for a healthy human race.

Most people learn early in life—from exposure to such things as horseradish, Tabasco, and even table salt—that while a little bit of something can be very good, a whole lot can be a disaster. Not everyone learns this, to be sure, and some people have trouble all their lives with such things as alcohol, chocolate sundaes, and garlic. Nevertheless, the idea is sound, and most people agree.

However, it is astonishing how many people have trouble if they start at the end and work back to the beginning. They tend to think that if a lot of something is very bad, then even the tiniest amount must surely be a little bad and will destroy the human race in a few years. Give us zero exposure to chemicals, they say, and the cyclamates were banned entirely because huge doses caused cancer in some experimental animals.

They persistently ignore a multitude of well known facts. The salts of copper, tin, cobalt, and even iron, in large quantities, are poisons, but every one of them, in small quantities, is necessary for healthy human life. The freshest fruits and vegetables, grown using only natural fertilizers, are filled with an astonishing array of chemicals such as hydrocarbons, ketones, esters, lactones, acids, alcohols, and mercaptans. But despite all this, or more accurately because of it, they

smell delightful, taste delicious, and are exceedingly nutritious.

A Slice of Onion

Many people like a slice of onion with their hamburger, but one reason why an onion tastes like an onion is that it contains some propyl mercaptan. Garlic contains allyl mercaptan, and an oyster on the half shell has just enough methyl mercaptan in it to make it smell like an oyster. Mercaptans, in their proper place and concentration, are delightful. However, that foul odor often found near oil refineries is also largely due to a variety of mercaptans, and the effective ingredient in the spray released by an angry skunk is mostly butyl mercaptan.

What would be the likely reaction of the public if a manufacturer of breakfast foods proposed to improve the taste of his products by adding small amounts of the following chemicals to them: acetone, acetaldehyde, methyl butyrate, ethyl caproate, hexyl acetate, methanol, acrolein, and crotonaldehyde?

No doubt the air would be full of flying injunction and sticky lawsuits because every one of these chemicals is a poison. Methanol, for example, is another name for wood alcohol, a deadly poison, and crotonaldehyde has been used in making "Mickey Finns." Bartenders in rough sections of town have used it in drinks to get rid of unwanted customers for many years. A tiny dose will quickly remove the customer from the bar and a larger dose will remove him permanently.

Ripe Strawberries

Nevertheless, all eight of the chemicals listed above are found, along with many others in ripe strawberries. Skeptics may question these facts but they are well documented in *Helvetica Chimica Acta* (Vol. 47, page 1215, 1964), one of the soundest and most respected scientific journals in the world.

Not only is a ripe strawberry loaded with chemicals, but it acts as a chemical reactor right while it sits on the breakfast table waiting to be eaten. The acetaldehyde is being oxidized to acetic acid, the crotonaldehyde to crotonic acid, and the methanol to formaldehyde. In fact a single straw-

berry may have going on in reactions almost as complex and diverse as those going on in the atmosphere above all of Arizona. Here one is being formed and destroyed, nitrogen oxides are attacking the esters and ketones given off by billions of orange blossoms and trillins of cactus flowers, carbon monoxide from thousands of cars is being oxidized to carbon dioxide, and terpenes drifting in from the redwood forests of California are reacting with the ozone and oxides of sulfur blowing up from Mexico.

Helvetica Chimica Acta, in Volume 67, also gives an analysis of ripe raspberries, but if Volume 47 has ruined your appetite for strawberries perhaps you should not look at Volume 67. Raspberries also are good with cornflakes.

Sauce of Humility

Scientists, aware of these facts and thousands of others showing that chemicals are all around us and cannot be removed, are amazed that nonscientists pay little or no attention to it all. They think the nonscientist should pour a generous helping of the sauce of humility on the recommendations which they offer so freely to the rest of the world.

A reasonable suggestion. But the sauce of humility is just as badly needed by the scientists who almost never learn, soon enough, all the hazards associated with the products they make and handle. Things which chemists thought to be perfectly harmless a few years ago, such as vinyl chloride and beta propiolactone, have been found to be carcinogenic. While it is neither necessary nor possible to have zero exposure to chemicals, it is wise to handle them with a degree of caution proportionate to our ignorance—which is often great.

So give us a little horseradish, please, to pep things up, but don't overdo it because there is quite a bit of allyl isothiocyanate in horseradish. We do not know all the hazards which may be associated with allyl isothiocyanate, but we do know that if you put a spoonful of pure, freshly ground horseradish in your mouth all at once, you probably will be cautious with allyl isothiocyanate the rest of your life.



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Use of Various Protein Sources in Pasta

Merlin D. Breen, Orville J. Banasik,² and David E. Walsh³

¹ Published with the approval of the Director of the Agricultural Experiment Station, North Dakota State University as Journal Series No. 716.

² Assistant Professor and Professor respectively.

³ Present address: General Nutrition, Fargo, North Dakota.

Corn, wheat, rice and soy furnish most of the food energy and food protein consumed in the world. Pasta products form a class of foods which are economical, easy to prepare, shelf stable, and can be served in many different ways. Since the products are extruded, additives can be easily blended into a formula. The major nutritional limitation with wheat protein is its low lysine and to a lesser degree threonine content. Also, its protein efficiency ratio is less than half of that of casein.¹ Therefore, by the selective addition of protein to pasta, nutrition can be improved and protein content increased.

The amount and type of additives permitted in pasta are controlled by FDA as published in the Federal Registry. In 1955, egg whites were allowed to 2.0%, milk to 3.8%, nonfat dried milk (NFDM) could be added in levels to 12.25% and soy flour to 49.9%.⁴

Macaroni when made with whole milk deteriorated quite rapidly but when made with NFDM at the 15% level, produced pasta of high protein quality, required less cooking time but still tolerated heating better than conventional pasta as reported by Glabe, et al.⁵

Durr⁶ studied the effect of milk protein on the cooking quality of macaroni and found that whey proteins have low water absorption and cause reduced firmness. Casein can be prepared in numerous ways and all types tend to cause a disruption in the essential gluten frame work of pasta. The use of whey also causes some processing problems.

Seibles¹⁰ reported that heat coagulated whey, eliminated the processing problems normally encountered with whey protein. A slight, but acceptable, texture and taste difference was noted for this macaroni product.

Soy products which are economical quality protein sources has been used in feed rations for many years and

has recently become a major food protein source. Soy flour was studied early and was allowed in wheat and soy macaroni.⁴ Paulson¹⁴ reported testing soy fortified pasta in 1960 and concluded that the pasta had improved firmness, particularly for canned foods and had acceptable flavor. Generally, early soy products produced pastas with darker color, a slightly bitter taste and had reduced elasticity.¹⁰

After the USDA started buying high protein pasta for various programs a number of new combinations were investigated. After the change to allow increased levels of N₁DM,⁸ the purchases included this product. In 1971, the USDA started buying enriched macaroni with improved protein quality.⁷ A product meeting these requirements was being tested by General Foods Corporation under the name of "Golden Elbow Macaroni". The cooking qualities were poor because the major ingredients were yellow cornmeal and soy flour with wheat products comprising a low level. After much discussion and objections from the pasta industry, the FDA published a new standard of identity which stipulated that macaroni products may contain other safe and edible products as long as the wheat endosperm is the largest component.

Yeast protein has recently become a real possibility in pasta fortification. A series of new products have been introduced containing torula yeast produced from ethanol. The yeast was blended with semolina to produce high protein pasta. A product containing 9% torula yeast and 91% semolina, had a protein content of 18.0% and the PER value was almost doubled over conventional pasta.¹³ The cooked weight was slightly lower, the cooking loss was unreported and the product retained a slight meaty flavor. An elastic texture was reported as well as good stability to heating. No report of method of flavor evaluation was given.

Fish protein concentrate was reported to be an acceptable additive in noodles.¹⁸ Ten per cent fish protein concentrate increased the PER to 3.35 compared to 3.21 for casein.

Since there have been numerous attempts to fortify the protein in pasta products, there appeared to be a need to determine what effect each type of product has on taste, cooking quality and on the color of pasta. Very little attention has been given to the testing of cooking quality or the organoleptical properties of protein fortified pasta. The objective of the study was to study a variety of protein materials and to determine their effect on the quality of the spaghetti as measured by a color determination, a uniform cooking test and a taste panel evaluation.

Materials and Methods

High protein food materials were selected to represent the variety of types available or under study for commercial production. A preliminary processing with the micro method,¹⁷ eliminated 17 protein materials from further consideration on the basis of unacceptable color. The remaining thirty-four protein products investigated in this study were supplied by the following firms: Central Soya, Chemurgy Division; Archer Daniel Midland Co., Ralston Purina; A. E. Staley Co.; Far-MarCo.; Grain Processing Corp.; Cargill, Inc.; Borden, Inc.; CPC International, Inc.; Pillsbury; Viobin Corp.; Breede Food Products Corp.; Keep Chemical Co.; Midwest Solvent Company Inc.; Egg Univers; Instron Instrument.¹⁶ Each cooked sample was tested in triplicate and average reading was converted to g.-cm. units.

The texture and flavor of each high protein spaghetti was determined by a taste panel evaluation. A taste panel of five people was selected on the basis of their ability to distinguish texture and taste differences of selected samples. Samples representing three different levels of protein product and a control were cooked in boiling water for 15 minutes (normal cooking time), drained and served to the panel. The samples were examined under reduced red lighting. The evaluation of the samples utilizing soy products is reported in Table I. Full-fat soy flour reduced color significantly at all levels and the two highest levels would be unacceptable for color. Defatted soy flour color score was not changed significantly at the 15% protein blend but was reduced when used in high levels. The color values for 17.5 and 20.0% protein blends would be acceptable color values even though they were lower than the control. The toasted and the lecithinated flours have comparable results.

The wet spaghetti was held for 15 minutes at 70% relative humidity and 57°C before being transferred to a laboratory macaroni dryer.⁸ The dryer was operated at a constant temperature of 43°C and the relative humidity lowered linearly from 95% to 85% in an 18 hour cycle. After the cycle was completed, the spaghetti was slowly cooled to room temperature and stored at ambient temperature and humidity.

Moisture (Method 44-15) and protein, N x 5.7 (Method 46-10) were determined for each protein and spaghetti product as described by AACC Approved Methods.¹ Spaghetti color was determined on the dry, uncooked samples using the reflectance colorimeter according to AACC Approved Method 14-22.¹ Cooked weight was determined by boiling 10 g of each sample for 20 minutes in 300 ml of boiling water. Twenty minutes was used as a uniform cooking time which allows for cooking stress to be placed on the sample. After cooking, the samples were drained, rinsed and weighed to determine cooked weight. The cooking loss (residue) was determined.

Firmness was determined by cutting two strands of cooked spaghetti using a special tooth assembly and measuring the total work required with a Instron instrument.¹⁶ Each cooked sample was tested in triplicate and average reading was converted to g.-cm. units.

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The soy protein concentrates required less product to reach high protein levels compared to soy flours. These blends contained higher amounts of semolina and thus produced a higher color score for the 20% protein blend. The color values are highest in the blends (17.5 and 20.0%) when soy protein isolates were used.

The wheat germ proteins (Table II) were unacceptable for color at all levels. The color of the nonvital wheat gluten blends was acceptable for the 15 and 17.5% protein blends but not tasted without use of salt or seasoning and were rated on a hedonic scale of 1-9 (9 being the highest score) for mouth feel (texture) and flavor. A numerical taste score was assigned to each of the randomized samples, each series of samples were evaluated on two different days and the average result recorded. All data was

converted to per cent of the control value.

converted to per cent of the control value.

Results and Discussion

Color Changes

A homemaker, when buying pasta, will compare the color with other products and choose first on color. Repeat buying will probably be based on cooking of the pasta but initial buying requires that pasta have a golden amber color and a bright translucent appearance. This can be objectively measured by utilizing a color reflectance meter using the yellowness and brightness readings. A better color comparison is made if the values are expressed as per cent of the color of the control sample processed on the same day as the test samples. The normal variation for these values is $\pm 2.2\%$. Relative color scores of above 80% are in the acceptable range.

Tables I and II report the product types, the number of samples averaged to obtain the scores, the average protein content of the products tested and the relative spaghetti color scores for the 3 levels of protein used.

at higher levels. Only the 15% protein blend had acceptable color for vital wheat gluten. Spaghetti from corn protein isolate was acceptable

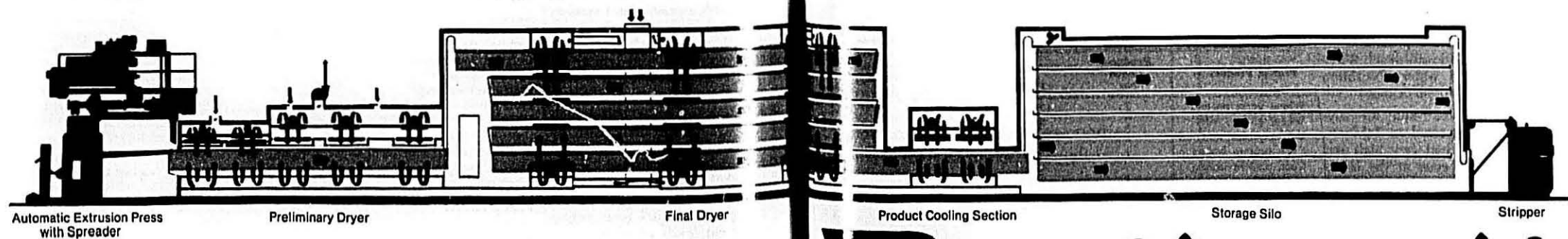
TABLE I
Average Change in Spaghetti Color Using Soy Protein Products

Soy Product	Products Tested No.	Protein %	Color, % of Control Color % Protein in Blend		
			15.0	17.5	20.0
Full fat flour	1	36.4	93.7	81.2	62.5
Defatted flour	6	48.7	98.2	93.3	86.6
Defatted flour, toasted	2	48.2	94.1	84.9	78.8
Lecithinated flour	1	39.8	107.1	85.7	87.5
Protein concentrates	3	61.0	100.0	91.9	85.6
Protein isolates	9	82.7	97.1	95.7	91.1

TABLE II
Average Change in Color in Spaghetti with Increasing Amounts of Various Protein Products

Protein Product	Products Tested No.	Protein %	Color, % of Control Color % Protein in Blend		
			15.0	17.5	20.0
Wheat germ protein	2	69.3	38.2	17.6	14.6
Wheat gluten, vital	2	62.3	85.2	82.6	82.6
Wheat gluten, nonvital	1	82.0	94.1	94.1	76.4
Corn protein isolate	1	82.4	93.7	81.2	68.7
Corn protein isolate, deoiled	1	86.7	76.4	64.7	52.9
Oat protein concentrate	1	79.0	81.2	68.7	56.2
Defatted cottonseed meal	1	50.4	62.5	50.0	37.5
Defatted fish meal, concentrated	1	88.8	100.0	100.0	100.0
Egg albumin	1	77.6	105.9	100.0	100.0
Whey protein, acid	1	57.3	100.0	105.6	105.6

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Protein Additives

(Continued from page 27)

in color at low levels of use but not at higher levels. Oat protein and cottonseed meal contributed to poor pasta color. Defatted fish meal, egg albumin and whey proteins were very acceptable and their blend spaghetti had even better color than the control at all levels. The various additives had different effects on the final color. The soy blends tend to be yellow to brown with low brightness. The egg albumins have natural yellow color and whey adds primarily brightness.

Cooking Properties

The cooking qualities of pasta are probably the most important quality factor after color. Our cooking test measures water uptake (cooked weight), cooking loss or residue, and cooked spaghetti firmness.

The cooked weight of soy fortified samples are reported in Table III. All values were significantly different than a 100% semolina product (control) but these values were generally acceptable. Only the full fat soy flour and the lecithinated soy flour have a relative value of less than 90% and were considered low. Table IV demonstrates that the wheat gluten, defatted cottonseed meal, egg albumin are poor additives relative to the cooked weight of the blends particularly at the 20% protein level. Oat protein concentrate, defatted fish meal, and corn protein isolates produced blends with excellent cooked weight at 15 and 17.5% protein levels and acceptable at the 20% level. Whey protein had good water absorption at the first two protein levels.

The cooking loss data for soy-wheat pasta is reported in Table V. Full fat soy flour had very high and unacceptable loss even at the lower protein level. The toasting of soy flour reduced the cooking loss compared to untoasted defatted soy flour except for the 20% protein blends. The soy protein concentrate had very good cooking loss values and was the best of soy products, including the soy isolates. Wheat gluten (Table VI) had a reduction in cooking loss with the vital gluten being better than nonvital. Egg albumins also reduced spaghetti cooking loss but all other additives caused a high increase in cooking loss. Wheat gluten would

TABLE III
Average Cooked Weight of Spaghetti with Increasing Amounts of Soy Products

Products Tested No.	Cooked Weight, % of Control Value			
	15.0	17.5	20.0	
Full fat flour	1	91.9	86.1	73.5
Defatted flour	6	96.4	93.6	91.6
Defatted flour, toasted	2	96.2	91.6	91.2
Lecithinated flour	1	91.5	87.7	84.4
Protein concentrate	3	93.4	91.9	92.2
Protein isolates	9	98.5	95.0	92.7

TABLE IV
Average Spaghetti Cooked Weight with Increasing Levels of Various Protein Products

Protein Product	Products Tested No.	Cooked Weight, % of Control Value		
		15.0	17.5	20.0
Wheat germ protein	2	97.4	92.5	87.5
Wheat gluten, vital	2	88.2	82.4	80.1
Wheat gluten, nonvital	1	94.9	93.3	90.1
Corn protein isolate	1	95.9	93.9	84.3
Corn protein isolate, deoiled	1	97.8	103.9	97.7
Oat protein concentrate	1	98.9	91.9	91.1
Defatted cottonseed meal	1	88.3	89.6	85.3
Defatted fish meal, concentrated	1	101.5	102.1	104.9
Egg albumins	1	92.6	89.8	87.4
Whey protein, acid	1	97.1	93.7	72.2

TABLE V
Average Cooking Loss with Increasing Levels of Soy Protein Products

Soy Protein Product	Products Tested No.	Cooking Loss, % of Control Value		
		15.0	17.5	20.0
Full fat flour	1	150.6	198.7	1
Defatted flour	6	130.8	144.6	150.4
Defatted flour, toasted	2	112.4	124.6	151.7
Lecithinated flour	1	106.6	98.6	130.6
Protein concentrate	3	101.3	124.3	111.2
Protein isolate	9	109.9	122.6	122.3

¹ Sample completely disintegrated.

TABLE VI
Average Spaghetti Cooking Loss with Increasing Amounts of Various Protein Products

Protein Product	Products Tested No.	Cooking Loss, % of Control Value		
		15.0	17.5	20.0
Wheat germ protein	2	126.6	173.6	141.1
Wheat gluten, vital	2	85.6	76.8	75.1
Wheat gluten, nonvital	1	109.4	111.3	6.8
Corn protein isolate	1	95.7	114.2	0.0
Corn protein isolate, deoiled	1	88.7	138.0	3.5
Oat protein concentrate	1	127.7	116.6	5.5
Defatted cottonseed meal	1	94.2	104.2	1.4
Defatted fish meal, concentrated	1	110.8	126.5	17.5
Egg albumins	1	96.3	90.7	8.9
Whey protein acid	1	102.4	132.6	336.1

thus be helpful to reduce cooking loss if added in low levels along with high cooking loss products.

Spaghetti firmness measures a part of the desirable factor referred to as a characteristic bite. The resistance

to cutting can be measured as the work required to cut two cooked strands of spaghetti. Table VII reports the firmness scores for the soy products when blended with semolina to

(Continued on page 32)

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Protein Additives

(Continued from page 30)

produce high protein pasta. Full fat soy flour caused reduced firmness at high levels while all other products produced firmness equal to or greater than control spaghetti. This agreed with early reports which recommended soy as a factor to maintain firmness of canned products.¹⁴

Other products and their effect on spaghetti firmness are reported in Table VIII. Wheat germ, and whey protein reduced firmness values from 98.1 to 78.2% and from 100.9 to 35.0%, respectively. Corn protein isolates caused decreasing spaghetti firmness as the level of additive increased and fish protein concentrate reduced firmness when used in the 20% protein level. Wheat gluten, defatted cottonseed meal and particularly egg albumins caused increased firmness with increased levels of product. Egg albumin was the most significant, as it had a value more than twice that of the control (258%) for the 20% protein level. This important quality of egg albumin and to a lesser degree wheat gluten, must be considered with other characteristics, such as a taste evaluation, to decide upon the value of this product in high protein pasta.

Taste Panel Evaluation

Each spaghetti sample was evaluated by a five member taste panel. The samples were compared to a 100% semolina control product and scored 1-9 with 9 being best and 4 or below unacceptable. These values were averaged and expressed as % of control. All soy products were acceptable but low at the 20% protein level (<50% acceptable) except full fat soy flour (Table IX). This product was rated unacceptable at the high protein level. The taste quality was diluted even at the 15% protein level but the soy isolate gave the highest value at this level. Wheat germ, corn protein isolate, egg albumin and whey protein as summarized in Table X all produced poor taste scores even at the lowest level. Fish protein concentrate, oat protein concentrate, defatted cottonseed meal and wheat gluten produced the best taste panel values.

Summary

High protein pasta was prepared adding numerous types of protein ma-

TABLE VII
Average Firmness of Cooked Spaghetti with Increasing Amounts of Soy Protein

Soy Protein Product	Products Tested No.	Firmness, % of Control Value		1.0
		15.0	17.5	
Full fat flour	1	117.7	88.8	7.6
Defatted flour	6	106.0	107.0	13.8
Defatted flour, toasted	2	109.7	107.7	7.6
Lecithinated flour	1	107.5	138.6	13.1
Protein concentrates	3	122.2	117.7	14.6
Protein isolates	9	97.4	101.5	104.8

TABLE VIII
Average Firmness of Spaghetti as the Level of Various Protein Products Increases

Protein Product	Products Tested No.	Firmness, % of Control Value		
		15.0	17.5	20.0
Wheat germ protein	2	96.1	77.0	76.2
Wheat gluten, vital	2	124.2	137.0	158.4
Wheat gluten, nonvital	1	123.7	124.1	150.7
Corn protein isolate	1	100.5	88.4	79.1
Corn protein isolate, deoiled	1	100.0	53.7	56.0
Oat protein concentrate	1	111.3	136.1	156.1
Defatted cottonseed meal	1	129.8	136.4	159.7
Fish protein concentrate	1	97.8	99.1	94.4
Egg albumin	1	151.6	200.2	258.0
Whey protein, acid	1	100.9	74.1	35.0

TABLE IX
Average Taste Panel Scores with Increasing Level of Soy Protein Products in Pasta

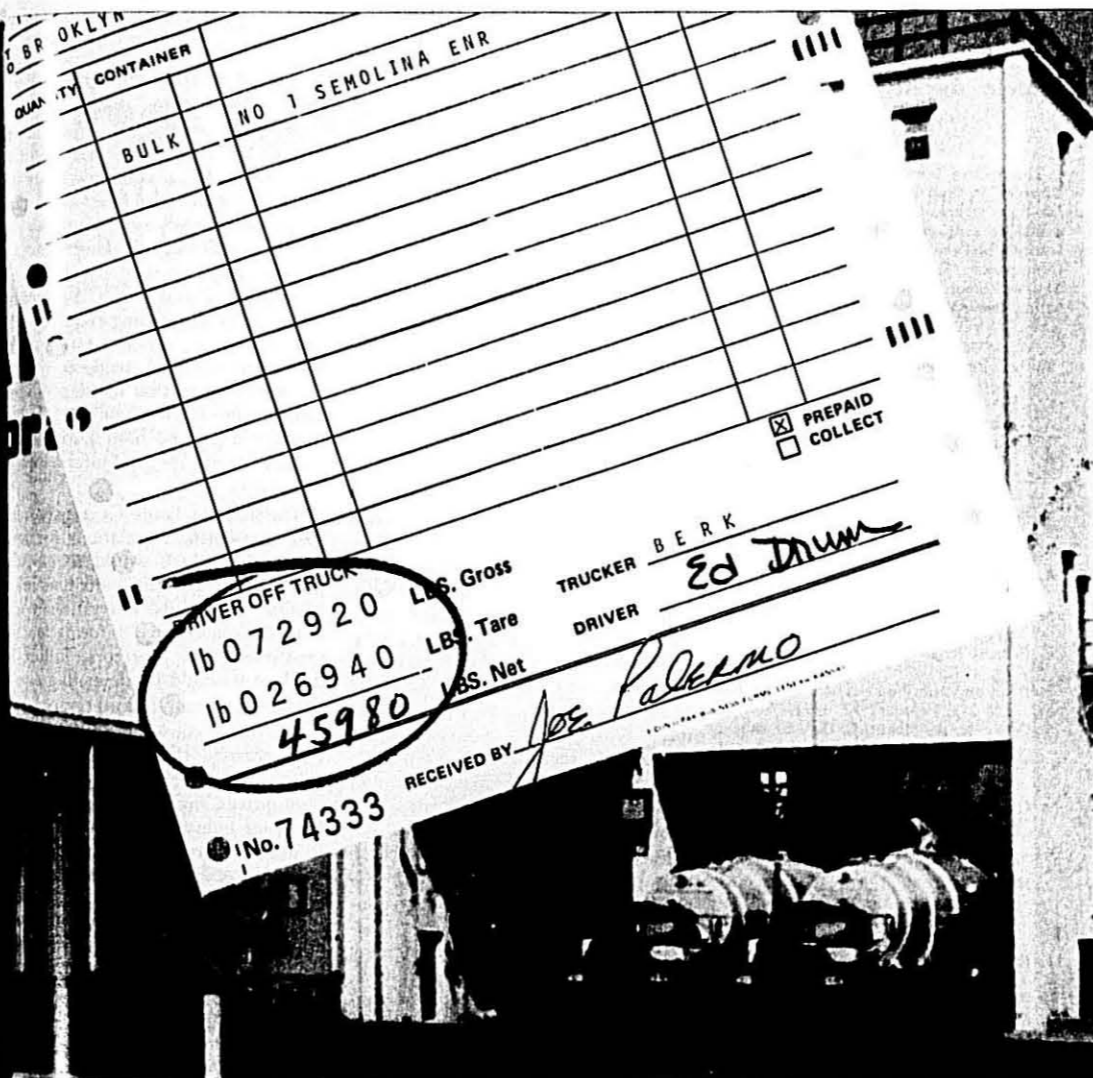
Soy Protein Product	Tested No.	Taste Score, % of Control Value		
		15.0	17.5	20.0
Full fat flour	1	80.7	37.6	47.4
Defatted flour	6	86.6	79.2	60.2
Defatted flour, toasted	2	87.8	71.2	61.8
Lecithinated flour	1	90.0	85.0	60.0
Protein concentrates	3	86.1	78.9	54.5
Protein isolates	9	92.4	82.4	72.4

TABLE X
Average Taste Panel Scores with Increasing Levels of Various Protein Products in Pasta

Protein Product	Product Tested No.	Taste Score, % of Control Value		
		15.0	17.5	20.0
Wheat germ protein	2	81.2	63.1	5.6
Wheat gluten, vital	2	85.1	68.4	0.4
Wheat gluten, nonvital	1	80.8	67.5	7.5
Corn protein isolate	1	85.7	71.4	1.7
Corn protein isolate, deoiled	1	79.4	51.2	7.4
Oat protein concentrate	1	95.0	90.0	2.5
Defatted cottonseed meal	1	87.8	82.9	0.7
Fish protein concentrate	1	91.4	82.8	2.8
Egg albumins	1	68.4	73.7	3.5
Whey protein acid	1	83.3	47.2	1.7

terials to semolina at various levels. The soy protein isolates and soy flour are good additives when judged by color, cooking loss, cooked weight and firmness of the resulting product. With high levels, the taste panel evaluations rated the soy wheat pasta lower than control. However, the organoleptic properties of the soy

wheat spaghetti are not objectionable. Corn and wheat germ protein isolate produced poor taste and poor color in spaghetti. Whey protein concentrate the semolina protein to yield high quality protein product but would be a poor major ingredient in pasta because of high cooking losses and low firmness.



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Protein Additives

(Continued from page 32)

Acknowledgment

The authors would like to thank Thomas Thielges, Jo Ann Bell, and Bruce Johannes for their technical assistance. The financial assistance supplied by the National Wheat Institute and the North Dakota State Wheat Commission is gratefully acknowledged. The assistance of K. A. Gilles in coordinating this project is also acknowledged.

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Macaroni products have a high coefficient of digestibility.

Can Nutrition Sell?

from *The Professional Nutritionist*

Question. Can nutrition considerations serve as effective forces in food marketing?

If the answer is, "yes," that means consumers perceive nutrition as a priority area of concern and a key to their food purchasing behavior. Thus, in turn, would suggest a marketplace need and therefore a marketing opportunity. The inputs of nutritionists would be critical to fully meeting this need and developing this opportunity.

The question is indeed the key. Let's explore the answer.

Answer. The traditional answer of food marketers generally has been a strong, "no!" Efforts to market foods primarily on a nutrition basis in the past had not met with much success.

As a result, the inputs of nutritionists were either not sought at all by food manufacturers or were relegated to minor roles. The inputs of food technologists, dietitians, home economists, biochemists, and food marketers, tended to focus more on taste, texture, appearance, cookability and storability than on the intangible quality of nutrition per se.

Focusing on the products' basic characteristics, those obvious to the consumer, is indeed a necessary condition for effective marketing. Consumer acceptability is determined by a whole series of product attributes, not just nutritional value. Additionally, the acceptance is critical to meeting nutritional needs because "food is not food until it is eaten."

Nutrition Awareness

Still, the nutritional dimension of food has been relatively neglected by the food industry. The neglect, however, appears to be disappearing because the nutrition factor has become of more concern to public policy-makers, consumers and to perceptive food manufacturers.

It has become quite obvious that nutrition awareness finally is increasing among all these groups.

The roots can be traced (in part) to the recognition in the late 1960's that more than ten million people in the United States were ill-fed and undernourished. Congress held hearings, and in 1969 the President inaugurated the White House Conference on Food, Nutrition and Health. This gathering

set in motion many public and private nutrition activities.

On the government side, federal expenditures for food and nutrition programs rose seven fold between 1969 and 1975, reaching more than seven billion dollars. The regulatory agencies also began taking more aggressive nutrition-related action, such as the Food and Drug Administration's nutrition labeling requirements. The underlying concern was that the food industry had neglected nutritional value and that consumers were losing control over their diets. Labeling would provide both a stimulus to industry and more food information to consumers.

The Federal Trade Commission began considering regulations for food advertising which would require the provision of accurate nutrition information in food ads. The rationale was that it is necessary information for consumers and, therefore, failure to disclose it would be deceptive advertising.

In turn, consumers increasingly have focused their attention on nutrition. The world food crisis, rising food prices, and growing distrust of the food industry have all combined to generate greater consumer concern with the quality and price—the value of food. Even with the recent softening of food prices, many consumers appear to be continuing to switch from "junk" foods of low nutritional value to more basic items. Consumers' expectations of food quality are rising and must be met if further satisfaction is to be avoided.

Nutrition Understanding

Nutrition interest is up. But what about the consumers' understanding of nutrition?

An FDA survey concluded that shoppers have a working knowledge of nutrition—with 28% of the shoppers scoring high on the nutrition knowledge score, 38% moderate, and 34% low. The younger, more educated consumers tended to score highest.

Consumer nutrition knowledge appears to be greater than food marketers' traditional perceptions. Yet confusion and misunderstanding still is prevalent among consumers. Interest exceeds knowledge.

The resulting ignorance gap represents a problem for all. It can lead

(Continued on page 36)

The Clean Machine

Pulsamatic II doesn't mess around when you've got work to do.

Here's the swift and steady form-fill seal system that not only looks after itself but makes looking after it a real pleasure.

Pulsamatic II is loaded with lots of little things you'll appreciate.

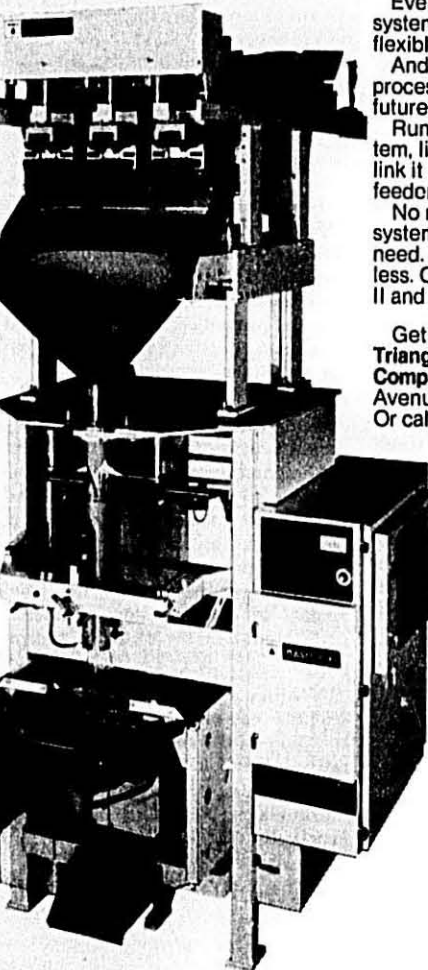
Thoughtful features like a clean and simple frame that won't trap product. A forming tube conveniently extended beyond it. And legs that let you clean under it.

Smart touches like a splash-proof enclosure for the drive. And electronics in a drip and dust-proof cabinet that swings out for easy access to centrally located pneumatics.

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Turn a profit. Turn to TRIANGLE

Can Nutrition Sell?

(Continued from page 34)

to misdirected or even exploitative food marketing efforts and misguided government regulatory actions.

Inadequate nutrition knowledge is understandable. As a nation we have made little more than token efforts toward nutrition education. In addition, the existing flow of nutrition information to consumers, managers, and government officials is frequently fragmentary, inconsistent, and unintelligible to lay people.

Despite this knowledge barrier and the traditional food marketers' bias against nutrition, companies have increasingly begun to respond in various ways.

Several major food manufacturers have formulated and issued explicit corporate nutrition policy statements. Many companies have begun to nutrition-label their products. Nutrition research budgets are expanding. New nutrition-oriented products have begun to emerge from product development departments. Supermarkets also have increased their nutrition-oriented consumer activities. Several chains have undertaken nutrition education, nutrition labeling, and have organized consumer advisory boards. Even fast food chains have begun to analyze their foods nutritionally, undertake vitamin fortification and promote nutritional themes.

This increased food industry movement into nutrition has been a result of mixed factors: the necessity of bending to government or consumer advocate pressures; a desire to meet perceived corporate social responsibility; a need to match competitors' actions; and an effort to develop a marketing opportunity.

Qualified "Yes" Answer

This mounting experience in nutritional food marketing leads one to conclude that the answer to the opening query about nutrition's salability is a qualified, "yes."

By itself, nutrition will sell little. But given reasonable organoleptic and usage characteristics, and competitive pricing, the nutrition dimension appears to have considerable importance for consumers.

The increased emphasis on nutrition is not a fad. It has become institutionalized in national legislation and by various programs. Nutrition is

firmly on the minds of consumers and on the docket of public policymakers. The real question for food marketers (and nutritionists) is no longer whether to deal with nutrition, but rather how to do it.

To fully realize the potential will require greater inputs from professional nutritionists. Fortunately, the heightened corporate awareness of and interest in nutrition has created a favorable environment in which nutritionists may play a more important role.

One of the key barriers to be overcome in this area is inadequate nutrition knowledge.

Before food manufacturers can successfully sell nutrition, they have to understand what they are selling. Nutrition education begins at home, and it is here that food technologists, dietitians, home economists, and other nutritionists play a key role. Education and guidance is also needed at all levels in the corporation.

Nutrition Knowledge Needed

Top executives need specific knowledge in order to intelligently formulate a corporate nutrition policy statement. Marketing managers require it to make wise decisions on product design and promotion. Sales people need it to do an effective job of selling from the nutritional perspective.

Food technologists have two important roles to play: First, they should provide nutritional profiles of existing and new products so that the company's executives can understand the nutrient package they are selling; and second, they have a prime task in designing products to maximize their nutritional value within the constraints of other product characteristics important to consumer acceptability.

Nutritional biochemists and food scientists can make an increasing contribution on the research side. Corporations should increase their research and development allocations to the nutritional area to pursue ideas which eventually will better meet the nutritional needs of consumers.

The market researcher, in turn, would be wise to employ the skills of home economist people and dietitians, anyway (and that's what you'd have to be to figure out the labels). They just want basic guidelines—like the

promotion managers should make a greater effort to provide consumer nutrition education.

To achieve these goals will require the fusion of the skills of communications personnel and nutritionists, and probably the joint efforts of industry and government.

Nutrition Has Many Dimensions

If the nutritional needs of the populace are to be adequately met, it will take the combined commitment and resources of government and industry. And it will also require an increased involvement of nutrition professionals in both the public and private sectors. This larger role will only be effective if there is closer interaction and innovation (1) among the different disciplines within the nutrition profession, and (2) between nutrition and non-nutrition professionals.

Nutrition is not rigid; it has many dimensions, and involves many disciplines. To successfully incorporate better nutrition into the mainstream of our national food system, so that it can help sell the products, the practitioners in our nutrition community must accept the challenge of an integrated and interdisciplinary approach.

Will Nutrition Labeling Help Build a Stronger America?

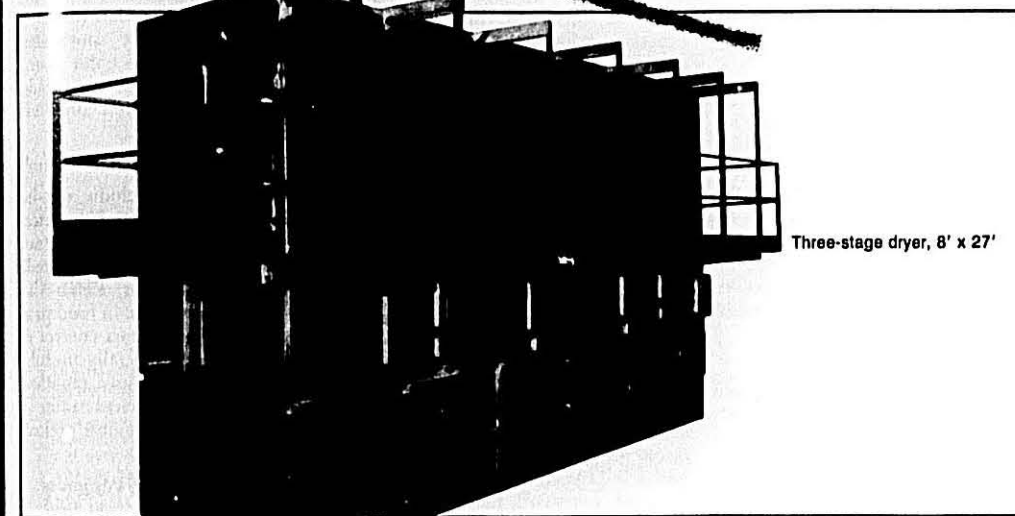
Preliminary reports of a FDA study indicate that consumers are concerned about the nutritional value of food and are willing to pay more for extra information. But only 15% of 5 consumers out of 5 (figure out) use the information to choose food and beverages. And some wonder how they came up with the figure that 65% of shoppers would pay more for the labeling.

At any rate, then we have Dr. Jacob Jacoby, professor of consumer psychology at Purdue University, saying, "The program is unlikely to have any significant effect on changing the food consumption habits of Americans." And as far as we know, that's the whole purpose of the program.

Doris Derellian of the California Dairy Council says most people aren't interested in becoming nutritionists, just want basic guidelines—like the

(Continued on page 38)

THE DRYER OF THE FUTURE



Three-stage dryer, 8' x 27'

In a 1973 survey of the entire pasta industry by an independent research firm, 87% of respondents stated that a combination of microwave and conventional drying is "the method of the future."

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"All future equipment will be Microdry" — Tech. Dir., large pasta plant.



Compared with conventional dryer

Units in these lbs./hr. Capacities: 1500, 2500, 3,000 and 4,000.

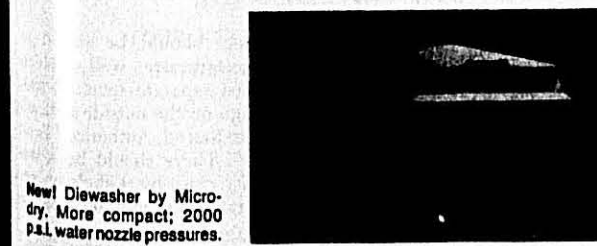
Operating today at: Golden Grain, San Leandro (2 units); Golden Grain, Chicago (2 units); D'Amico, Chicago; Catelli, Montreal; Gooch, Lincoln; O. B., Ft. Worth; Lipton, Toronto (2 units); Gilster Mary Lee, Chester, Ill.

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Nutritional Labeling

(Continued from page 36)

Four Food Groups (milk, meat, fruits and vegetables, and breads and cereals). "Teaching people a survival system of food groups—rather than the more technical nutrients proponents want listed on everything—is the simplest method available."

We say money speaks louder than words or legislation. If consumers are really concerned, let them stop purchasing products that aren't labeled to their satisfaction. That's a sure-fire way of getting a manufacturer's attention. And his action—without the benefit of more government regulation, which in the long run just increases the price of consumer goods.

Egg Review

The nation's laying flocks produced 5.3 billion eggs during November, slightly below November, 1975 and 2% below the previous month. The number of layers during November averaged 278.6 million compared with 279 million a year earlier. The number of eggs produced per 100 layers produced during the month was the same as a year ago. Layers on December 1 totaled 280 million, slightly more than a year ago.

Egg type chicks hatched during November totaled 38,100,000 up 27% from the 28,400,000 produced a year ago. Eggs in incubators on December 1 were 32,500,000, about 15% above a year earlier.

January output was estimated to be slightly above last year's level and about the same as the most recent three-year January average.

Recent developments indicate that pasta plants may be subjected to an increased number of sanitation inspection by the F.D.A. The F.D.A. sanitary survey report reveals that 17-20% of macaroni and noodle plants are in violation of good Manufacturing Practices,¹ (GMPS). The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as Amended in 1972 and again in 1975 has brought about changes in the use and handling of pesticides. In view of these developments it is essential that we review the fundamentals of pest control in a pasta plant.

A pest may be defined as an organism which harms man or his property, or is likely to do so. The harm

PEST CONTROL IN A PASTA PLANT

by Surjit S. Kamra

Director of Technical Services, Foulds, Inc.

must be significant, the damage of economic importance.² This definition of pest would include insects, rodents, weeds, microorganisms, nematodes, etc. Here we will deal only with the control of insects and rodents most frequently found in a pasta plant.

Methods of Pest Control

Pest control in a pasta plant may involve some or all of the following:

1. Sanitation
2. Mechanical Exclusion
3. Other Non-Pesticidal Controls
4. Application of Pesticides

Sanitation

The single most important factor in successful pest control is sanitation inside and outside the plant. This requires a commitment by the top management, teamwork between QA and production; and, an appropriate use of both materials and labor. The QA department at Foulds has developed a Master Sanitation Schedule which divides the whole plant into different sections. Each section is under the supervision of a foreman who assigns and supervises the cleaning crew. The QA department in cooperation with the production department carries out sanitation inspection and records the deficiency, if any. This approach not only assures that each area has been cleaned as required, but also serves as an evaluation of our sanitation efforts; should a problem arise at a later date. It also provides a permanent record that is available for inspection by our customers and regulatory agencies.

Mechanical Exclusion

Pests should be kept out by preventing them from entering the premises. This involves closing all the openings, however small. Mice can enter the building through openings as small as 1/4 inch. Windows and doors should be kept screened at all times. Eliminate conditions in the plant that encourage infestation. Cracks and crevices, especially in the processing area, accumulate flour and product dust and provide breeding ground for stored product insects. Examine incoming raw materials and supplies such as flour, wooden pallets

and packaging materials for any signs of rodent or insect contamination before these supplies enter your own system. Corrective action should be taken in case infested supplies are received.

Other Non-Pesticidal Controls

These would include non-baited traps for rodent control, insectocutors for flying insects, and ultrasonic sound devices for repelling rodents. Non-baited traps or Ketch-All are effective against mice in food processing areas. Insectocutors control flying insects and are especially useful during spring and summer months. Ultrasonic sound devices offer only limited protection against rodents in the plant.

Application of Pesticides

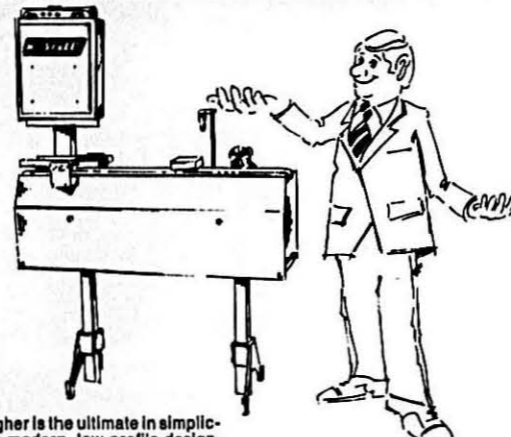
Effective pest control will require use of pesticides, along with above mentioned measures. Persons responsible for use of chemical pesticides in and around the pasta plant should have an understanding of FIFRA. Some of the highlights of this act include:³

- a) All pesticide uses must be classified as either general or restricted.
- b) Restricted use pesticide is to be applied by a certified pest control technician. Some states require certification of people using any kind of pesticide, whether classified as restricted use or general use.
- c) It is illegal to use a pesticide other than as the label or directs.
- d) Pesticides and its containers should be disposed of as directed by its label or labelling.
- e) You should know your state and local regulations. They may be more prohibitive than the Federal law.
- f) Those who violate FIFRA are subject to penalties (fine and jail terms).

Pesticides should be stored in a fire protected, dry, well ventilated and locked separate room. It should have a sign on the outside indicating "Pesticides Stored. Authorized Personnel Only". There should be a washing facility close by. Labels on pesticide containers should be clean and

(Continued on page 40)

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Pest Control

(Continued from page 38)

legible. A smeared or torn label on a pesticide container constitutes a violation. Never store pesticides in unmarked containers, especially food containers.

If the FDA inspector notices any violation of FIFRA, during his plant visit, he is supposed to inform EPA of this violation.

Effective use of pesticide requires that you must:

1. Identify Problem Pest. This will determine type of pesticide to be used. Remember, using a wrong pesticide is not only uneconomical, but also against the law.
2. Determine The Extent of Problem. If an insect you found was an incidental intruder, it may not call for insecticide treatment. It may require action to prevent future intruders.
3. Select the Appropriate Treatment based on the type of problem pest. You are limited to what can be used in food processing areas.
4. Evaluate the Effectiveness of Treatment. Did you achieve the



Manufacturer of Pasta Machinery Shows Talented Side

When Kenneth Snelson, sculptor needed a machine manufacturing firm to construct the 20-foot long stainless steel cylinders for his sculpture, he called on De Francisci Machine Corp., Brooklyn, N.Y., manufacturers of a complete line of pasta making machinery. The photo shows the completely assembled sculpture, owned and erected on the grounds of the San Diego Community Center. It is called "Tall Tale" and measures 20' high x 20' wide x 10' deep.

results you were seeking? This will help you decide control measures to be used in future.

Pest control in pasta plants must be a continuing effort. Use of fumigant or non-residual insecticides may kill the insects present at the time of application, but provide no protection against subsequent contamination. Residual insecticides used for crack and crevice treatment are effective for a limited time only. A well organized pest control program is essential to assure that pests do not become a problem in the plant.

In recent years the public has been very vocal in demanding clean foods. As a result, FDA is requiring the food industry to upgrade sanitary conditions inside the plants. This discussion has provided a framework to organize a pest control program, based on the needs of each individual plant.

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1. James J. Winston, National Macaroni Manufacturers Association, Bulletin No. 456.
2. Arthur Woods, Pest Control: A Survey, John Wiley and Sons, New York, 1974.
3. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as Amended, 1972.

R-F Officers

Ernest J. Ravarino, newly elected president, chief executive officer and treasurer of Ravarino & Freschi, Inc. recently announced the election of new officers of this 75-year-old St. Louis, Missouri firm: William J. Freschi to Chairman of the Board and Secretary; and Richard A. Zajac to Vice President and Assistant Secretary.

Ravarino & Freschi, Inc., manufactures and distributes pasta products under the R-F, Red Cross and New Mill Brands.

Mergers

Prince Macaroni Manufacturing Company of Lowell, Massachusetts has announced the mergers with Shreveport Macaroni Manufacturing Company, Inc. of Shreveport, Louisiana and Jenny Lee, Incorporated of St. Paul, Minnesota with Prince.

Joseph B. Cordaro is president of Shreveport Macaroni. Walter F. Villaume is president of Jenny Lee.

Prince pasta and sauce lines are being distributed in each new marketing area and the company has embarked on an extensive national advertising campaign on the Johnny Carson Tonight Show and the Today Show television programs.

Hi-Speed Establishes New Sales Offices

Hi-Speed Checkweigher Co., Inc. announces the transfer of District Sales Manager, Frank McElroy from the Mid-Atlantic States area to the Midwest area. In his new territory, Mr. McElroy will cover Iowa, Missouri, Nebraska, and Illinois from his office at 1616 North College Avenue, Geneseo, Ill. 61254. Telephone: 309-944-5183.

Hugh Conklin, of Hugh H. Conklin Co., has been appointed to cover the states of Virginia, Maryland, Delaware, Southern New Jersey, and the eastern two-thirds of Pennsylvania. The Hugh H. Conklin Co. is based at 400 Foulk Road, Wilmington, Delaware 19803. Telephone: 302-632-2224.

Mr. Conklin has been involved with the sales and marketing of a wide range of packaging machines and allied systems for the past twenty-eight years. He has previously represented Hi-Speed in the New York City metropolitan area.

We've been going together for nearly 50 years.



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