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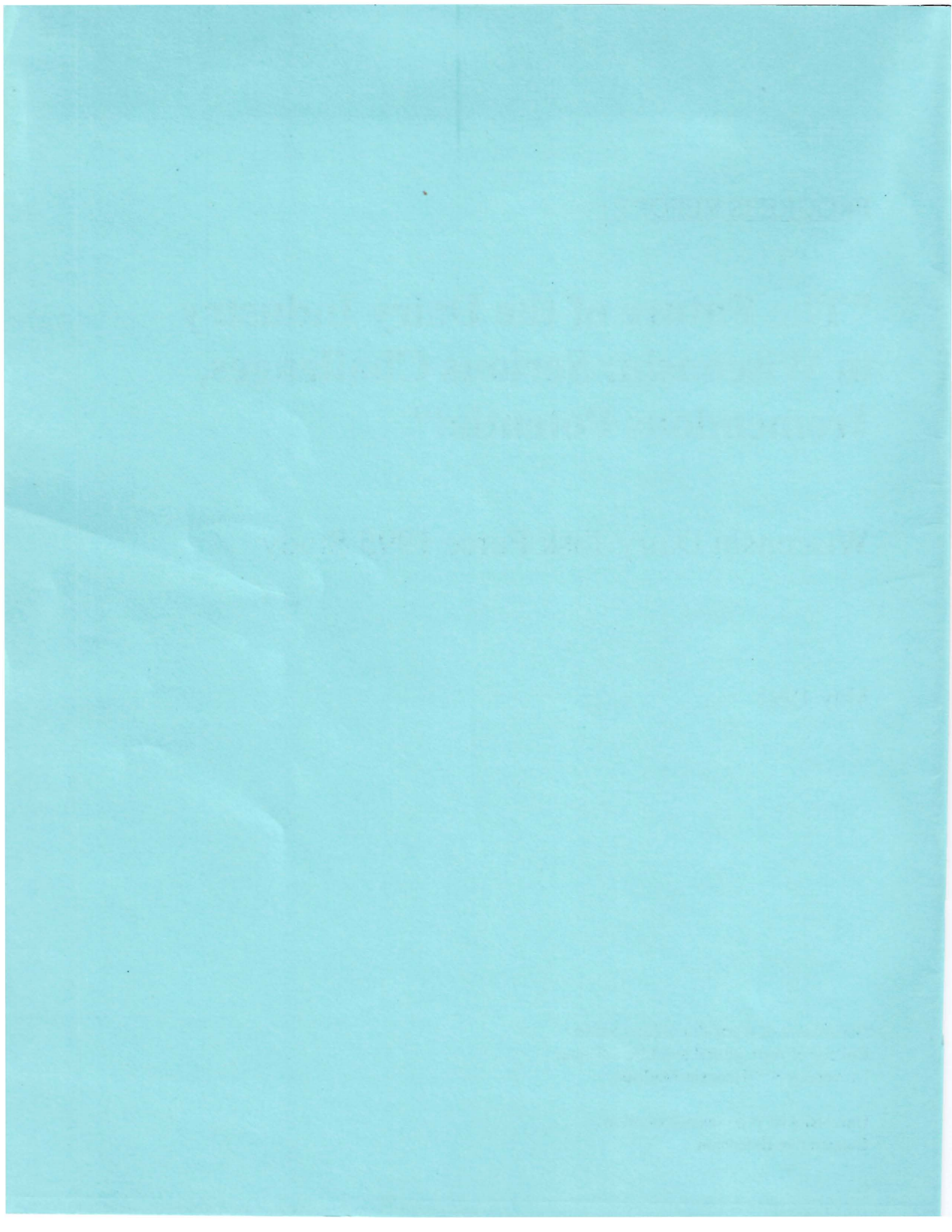
"The Future of the Dairy Industry in Wisconsin: Serious Challenges, Tremendous Potential"

Wisconsin Dairy Task Force 1995 Study

May 1991

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Progress Report On:

"The Future of the Dairy Industry In Wisconsin:
Serious Challenges, Tremendous Potential,"
Wisconsin Dairy Task Force 1995 Study

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Progress Report On: "The Future of the Dairy Industry In Wisconsin: Serious Challenges, Tremendous Potential," Wisconsin Dairy Task Force 1995 Study

Introduction

An industry task force to examine the competitive position and viability of the Wisconsin dairy industry was appointed August 1, 1985. Co-sponsors of the task force study were the Wisconsin Department of Agriculture, Trade and Consumer Protection and the University of Wisconsin System Consortium for Extension and Research in Agriculture and Natural Resources. The task force included 33 individuals: 17 dairy farmers, 8 milk processors and marketers, and 8 allied organizations (farm credit, A.I., farm supply, livestock marketing, etc.). Serving as ex-officio were a representative from the Governor's office, two state senators and two state assemblymen. A 22 member technical steering committee composed of University; Wisconsin Department of Agriculture, Trade and Consumer Protection; and State Vocational Technical Adult Education served as resource people. Appendix A contains a complete list of individuals involved with the task force study.

The task force was to study and make recommendations directed at the following objectives:

- To encourage research, education and legislative programs aimed at more profitable and efficient milk and meat production, better farm business management and finance, and better farm tax and economic policies.
- To improve profitability and efficiency of dairy processors.
- To increase marketing effectiveness from farm gate to consumer.
- To maintain leadership in the dairy industry.

The task force completed its study and submitted its final report, "The Future of The Dairy Industry In Wisconsin: Serious Challenges, Tremendous Potential" on July 10, 1987. The report contained 75 specific recommendations directed at maintaining and enhancing the economic viability and profitability of Wisconsin's dairy industry. This is a progress report on those specific recommendations.

Importance of Wisconsin Dairy Task Force Study:

Dairying's Contribution To Wisconsin's Economy:

Wisconsin is the leading dairy state in the United States, and the state's economy depends heavily on its dairy industry. Over 33,000 dairy farms produced more than 24 billion pounds of milk in 1990 -- 16.5 percent of the nation's milk supply. Valued at \$3.2 billion, this milk represents 60 percent of the state's cash farm income. Adding in the sale of calves, culled dairy cows and dairy beef, 66 percent of Wisconsin's cash farm income came from dairying. The actual economic impact is three times as great because of the purchases made by farmers and many firms that comprise the dairy industry. In total, Wisconsin dairying is a \$10-billion-per-year industry. There are extensive ties between the dairy industry and Wisconsin's agribusinesses and rural and urban communities. Clearly,

in terms of economic importance in Wisconsin, nothing compares in size and significance with the multi-faceted dairy industry. Its continuing growth and development are of utmost importance to the revitalization of the state's economy.

Challenges Identified That Face Wisconsin's Dairy Industry:

The Wisconsin dairy industry, however, is being threatened by relatively large and well managed dairy operations in the West, South, and Southwest. Regional shifts in milk production have and continue to occur. During the 1980 through 1989 period milk production increased 41 percent for both the Pacific and Mountain regions and 35 percent for the Southern Plains. The traditional dairy states in the Northeast and Lake States regions also increased during this period, but to a lesser degree (4.2 percent and 6.4 percent respectively). Of the Lake States, Wisconsin increased milk production 7.2 percent compared to 6.0 percent for Minnesota and 3.7 percent for Michigan. During this period milk production increased slightly for the Corn Belt, 4.5 percent; Southeast, 4.2 percent; and the Northern Plains, 2.1 percent, but decreased 2.4 percent for the Delta States and 1.9 percent for the Appalachian region.

During the 1980 through 1990 period the Pacific region increased its share of the nation's milk supply from 13.9 percent to 17.4 percent while the Mountain region increased its share from 4.8 percent to 6.0 percent and the Southern Plains from 3.7 percent to 4.4 percent. Although still the largest milk production region, the Lake States lost share, during this period, 30.3 percent to 27.2 percent. Wisconsin's share declined from 17.4 percent to 16.6 percent. All other regions also lost share of the nation's milk production.

The number of dairy herds in Wisconsin declined from 45,000 to 34,000 during the 1980 to 1989 period, a 24.4 percent decline. Average herd size increased from 40.3 to 51.1 milk cows. During this period U.S. herd numbers decreased relatively more than Wisconsin, 39 percent (335,000 to 204,900 herds), while average herd size increased more, 53 percent (32 to 49 cows).

Wisconsin faces a major challenge in retaining its rank as the leading dairy state. It is evident that not all of Wisconsin's existing 33,000 dairy farms will remain in dairying. It was this concern over the competitiveness, profitability and economic viability of Wisconsin's dairy industry that led to the appointment of the Wisconsin Dairy Task Force 1995.

Progress Report On The Dairy Task Force Recommendations

The seventy-five specific recommendations of the Wisconsin Dairy Task Force 1995 study are cited. The numbers associated with the recommendations correspond to those in the final report. Then for each recommendation there is a progress or accomplishment report; impediments to complete accomplishment, if any; resulting benefits or impacts to the dairy industry; and future relevance of the recommendation. Some recommendations have been grouped because of their similarities.

The following notations follow each recommendation:

A = completely accomplished

PA = partially accomplished

NP = no progress

R = still a relevant recommendation

NR = no longer a relevant recommendation

Recommendations Directed at Milk Processing and Milk and Dairy Product Marketing:
Recommendations Nos. 1 and 3:

Anticipated growth in cheese sales in general and for non-American varieties in particular offers an excellent growth opportunity for Wisconsin's dairy industry. Wisconsin should strongly emphasize and commit resources to producing and marketing cheese and expanding cheese varieties. (PA, R)

To ensure the economic survival and expansion of Wisconsin's many small cheese plants, and to expand the number of cheese varieties produced here, small plants should concentrate on manufacturing high-quality, premium-priced cheeses, and should seek out innovative ways to efficiently market their product nationally. (PA, R)

The Center for Dairy Research (CDR), through funding by the Wisconsin Milk Marketing Board, has undertaken a research program to develop manufacturing procedures for specialty cheeses and to transfer that technology to the Wisconsin cheese industry. The technology for one variety, Wisconsin Style Havarti, has been patented and a trademark issued for the name. The Wisconsin Milk Marketing Board has entered into a licensing agreement with one Wisconsin processor, Morning Glory, Division of AMPI, for manufacturing and marketing this variety.

Research is in progress in developing the technology for a jarlsberg-type cheese. Projects are also funded by Wisconsin Milk Marketing Board (WMMB) to improve the flavor and texture of lowfat and low-sodium cheeses. Work has just been initiated to develop producers to tailor-make natural cheeses with specific properties to be used as a food ingredient. A substantial portion in the future growth of cheese markets will depend upon use as an ingredient.

Continued transfer of technology from the above research will be limited by personnel needs in Extension and personnel in CDR to transfer information and technology. WMMB has shouldered most of this responsibility in the past and it is incumbent on the State of Wisconsin and the University of Wisconsin to assume a greater role. This would require one Extension Specialist (faculty level) and two cheese technologists (academic staff level) to aid in scale-up of the technologies, hold training sessions and work with cheese manufacturers to produce these high-quality specialty cheeses. WMMB would continue their focus on marketing of the new varieties.

Further research and development in expanding the range of specialty cheeses will require two additional cheese technologists (academic staff level). These technologists will complement the staff of the Center for Dairy Research and faculty of the Department of Food Science. The latter two groups can provide the necessary basic research and guidance to the technologists. Such a combination can provide the necessary technological information to expand cheese markets.

Wisconsin is noted for high quality cheeses. Since Wisconsin utilizes about 80 percent of its milk for cheese production the development and expansion of new varieties will add economic value to the state's milk supply. These efforts will continue to be very relevant to the state's dairy industry.

Recommendation No. 2:

Any new investment in new dairy plant facilities or plant expansion should be preceded by careful analysis of existing plant capacity, technology and market potential. (PA, R)

A 1988 University of Wisconsin System Consortium Study identified the existing capacity of cheese plants by variety, whey plants, butter plants and powder milk plants. Considerable excess capacity was identified for American cheese plants and lesser excess capacity for other types of cheeses.

Neither the Wisconsin Department of Agriculture, Trade and Consumer Protection nor the University of Wisconsin System have the staff or faculty to continue to up date the dairy plant capacity study. Unnecessary excess plant capacity can lead to inefficiencies and lack of competitiveness of Wisconsin milk processing industry. Thus, it remains essential that before making additional investments in plant capacity a careful assessment of existing plant capacity and its efficiency of operation be conducted.

Recommendation No. 4:

Consumers are buying new varieties of cheeses, many of them imported from Europe. As these markets develop, Wisconsin must produce a greater share of these varieties. Where knowledge and production expertise is lacking, consideration should be given to seeking foreign investments in Wisconsin. Existing plant capacity should be carefully studied before considering any new plant construction. The DATCP, along with the University of Wisconsin, should provide information and assistance to potential foreign investors.

Cheesemakers in Wisconsin are manufacturing an increasingly diverse output. While statistics are lacking, it is generally believed that the state has a market share of specialty cheeses that equals or exceeds its share of all cheese. Foreign companies have increased their investment in Wisconsin cheese factories, but only partly to exploit markets for specialty cheeses. The primary reason appears to be to avoid restrictions on expansion of cheese production in Western Europe due to EEC milk quotas.

The WDATCP has provided assistance to foreign investors in evaluating investments and plant operations in Wisconsin. Cheese specialists in the Department of Food Science and the Center for Dairy Research have provided assistance to specialty cheesemakers as requested. However, requests have been limited because of the limited markets for specialty cheeses and the proprietary nature of their production.

The Department of Agricultural Economics and the CDR continue to lack the resources necessary for aggressive study of markets for specialty cheeses. Such studies are somewhat foreign to academic departments (with the exception of the School of Business), and might better be conducted by private consulting companies at the expense of those having a monetary interest in their results.

The entry of foreign interests in Wisconsin cheese industry could benefit the state's dairy industry. This depends on whether new or additional cheese varieties enhance the market for Wisconsin's milk through expanded cheese markets on value added cheeses.

It is not clear what CALS or CES can do to implement this recommendation. This is a private sector initiative. The University and the State should stand ready to assist when asked. Neither can provide the resources necessary to ensure the success of outside investment in the production of specialty cheeses in Wisconsin.

Recommendation No. 5:

To ensure an expanding market, the Wisconsin dairy industry should increase its research into manufacturing efficiency and technology in product development, both for traditional and non-traditional uses of milk, milk products and milk by-products. The UW-Madison food science department, the Walter V. Price Cheese Research Institute -- a part of the UW Center for Dairy Research -- and the UW Consortium should expand their research efforts in this regard. Funding should be partially the responsibility of the Wisconsin Milk Marketing Board, the National Dairy Promotion Board and other industry sources. (PA, R)

The Center for Dairy Research, through funding almost entirely from the Wisconsin Milk Marketing Board and the National Dairy Promotion and Research Board, has established a comprehensive research program on utilization of milk components. A comprehensive milkfat research program includes three components carried out by personnel in academic departments and CDR. The components are:

1. Control of milk composition by genetics and feeding to increase the protein to fat ratio and to improve the nutritional value of milkfat is being done in Departments of Dairy Science and Meat and Animal Science and the USDA Dairy Forage Research Center.
2. Fractionation and modification of milkfat is being researched by personnel in the Departments of Food Science and Chemical Engineering and CDR. Milkfat is being fractionated by several procedures, modified by unique enzymatic techniques, the fractions and modified milkfat are being characterized for potential commercial usage and selected applications are being pursued with commercial food processors.
3. Analysis of demand for dairy products, with particular application to milkfat demand, is underway by economists in CDR and Department of Agricultural Economics. The analysis uses more extensive data and sophisticated econometric models than has been used previously. The output from this research area will be useful to the dairy industry but will be applied directly to assist in determining the best casein to fat ratio in milk being established in research component 1. It will also serve as a guide for potential uses of milkfat and fat fractions being investigated in component 2.

Research on utilization of nonfat milk components is more limited than the milkfat research program and focuses on underutilized components. Researchers in Chemical Engineering have developed processes for converting the lactose in whey or ultrafiltration permeate into polysaccharides that appear to have food and nonfood applications. Patents have been obtained or applied for on the processes and commercial firms are evaluating the polysaccharides. Personnel in CDR and the Department of Food Science are developing processes to selectively remove minor, high-value proteins from whey, evaluating unique techniques for fractionating major whey proteins and for defatting

they protein concentrate, and investigating procedures to improve the gel-forming properties of whey proteins. All of these studies are addressing specific problems or opportunities to increase the use of whey components as food ingredients or for non-food uses.

Long-term commitment of funding is the greatest need in this area. This will foster activities of the young scientists who are capable of developing unique outlets for whey components through basic research. Also, consultants should be hired to assist the younger researchers in developing the most appropriate research programs, mentor the development of the programs and aid in transferring the technologies to industry.

Recommendations Nos. 6 and 7:

Wisconsin's dairy industry must have high-quality, safe milk and milk products in order to maintain and enhance its markets. The state's dairy industry should be the leader in quality and food safety standards for its products, from the farm level all the way through the marketing system. The University of Wisconsin should continue research on improving the quality of milk and milk products. UW-Extension, VTAE and the industry should provide educational programs to teach dairy producers, processors and food handlers the principles for producing safe dairy products and dairy ingredients. (PA, R)

A single quality standard should be implemented for all milk produced within the state, and the following timetable should be followed in implementing that standard:

	<u>1987</u>	<u>1990</u>	<u>1992</u>	<u>1995</u>
Somatic cell count	700,000	600,000	500,000	400,000
Bacteria plate count	25,000	20,000	15,000	10,000 (PA, R)

The Departments of Food Science, University of Wisconsin, Madison and Dairy Food Science, University of Wisconsin, River Falls, have and continue to provide educational programs, seminars, and training on food safety for dairy food handlers and dairy plant operators. Extension faculty in the Department of Dairy Science, University of Wisconsin, Madison have provided extensive educational programs on producing quality milk for the state's dairy farmers. The quality of the state's milk at the farm level continues to improve as measured by somatic cell count and bacteria plate count.

The WDATCP, although not fully implementing the Task Force recommendation on milk quality standards, did revise and implemented higher on the farm milk quality standards. Present milk quality standards are 750,000/ml. somatic cell count for both Grade A and Grade B, and a bacteria plate count of 100,000/ml for Grade A and 300,000/ml for Grade B.

Quality of milk and dairy products improves economic returns to both dairy farmers and dairy plant operations. Consumers benefit through consistency of product as well as food safety. The dairy industry cannot afford food quality or food safety problems. Therefore, continued research and extension programs on improving milk and dairy product quality and food safety is required.

Recommendations Nos. 8 and 9:

The dairy farm inspection program should be critically reviewed with an eye toward factors related to production of quality milk. Mandatory annual inspections of each Grade B dairy farm should be implemented. Milking-time review and inspection should be conducted on farms failing to meet quality standards. When cow and udder health problems are observed, the analysis should be shared with the farmer's veterinarian for advice. The WDATCP should be provided with sufficient resources to conduct farm inspections. (PA, R)

Eliminate any duplication with inspection/certification programs conducted by the state Department of Health and Social Services or the federal Food and Drug Administration (FDA). Improve, through careful study and planning, Wisconsin's efforts and involvement in the Pasteurized Milk Ordinance and Interstate Milk Shippers Conference with the objective of reducing or eliminating existing barriers to interstate milk shipments. As a minimum, inspection frequency should be reduced, based on milk quality test results, for producers who consistently produce good quality milk. (NP, R)

The WDATCP has reviewed its on farm inspection program. Attempts have been made to improve inspections on Grade B farms. However, tightness of budget has limited the WDATCP in fulfilling the state requirements for dairy farm inspection.

No progress has been accomplished in determining the number of dairy farm inspections based upon milk quality results. Farm inspection requirements imposed by the Pasteurized Milk Ordinance and Interstate Milk Shippers Conference for interstate milk shipments remain unchanged.

The need for evaluating dairy farm inspection programs as they relate to milk quality continues.

Recommendation No. 10:

Marketing is a top priority if Wisconsin is to remain a strong dairy competitor. The Wisconsin dairy industry needs to maintain and develop an effective marketing and promotion strategy. The responsibility for keeping abreast of changes in milk and milk product markets and their implications for Wisconsin, and for developing appropriate marketing strategies, should be shared by the University of Wisconsin, the Center for Dairy Research, the WDATCP, the WMMB.

WMMB administers more than a \$22 million annual budget for dairy promotion and research. The funds are derived from Wisconsin dairy farmers through a mandatory producer check-off per hundredweight of milk marketed. WMMB carries out promotion programs for milk, butter, soft products and cheese. These programs are carried out in all three segments of the market place: retail, foodservice and food processing. WMMB works closely with all members of the marketing team: farmers, processors, distributors, brokers, retailers, foodservice operators and consumers. The WMMB oversees more than 70 research projects being funded by Wisconsin farmers. These projects are directed at product quality and safety, milkfat utilization, cheese technology, and whey and nonfat solids utilization. In addition, WMMB funds the majority of the nutritional education programs carried out by the Dairy Council of Wisconsin.

The WDATCP works with state dairy firms in introducing their products in trade shows nationally and internationally. For example, several companies are supplying convenience packets of cheese to the airlines after attending the National In-Flight Trade Show. The Cheese and Sausage National Seminar program and the Alice in Dairyland program regularly introduce Wisconsin dairy products to new buyers. Several dairy companies use the "Something Special From Wisconsin" program.

The Center for Dairy Research is involved in new product development. For example, a new cheese, "Havarti", was developed by the CDR through research funds provided by the WMMB. WMMB has licensed a state dairy cooperative to produce and market Havarti style cheese.

CES dairy marketing specialists have worked with WMMB and WDATCP in studying demand trends for milk and dairy products and serving as advisors in developing promotion and other marketing strategies.

The sales of Wisconsin dairy products, in particular cheese, continue to increase annually at a faster rate than national trend. The image of Wisconsin dairy products among consumers remains at a very high level. Wisconsin has the potential of increasing its market share of the nation's cheese market. The bottom line is increased profitability for Wisconsin dairy farmers, and dairy processors and marketers.

Health concerns, particularly cholesterol and milk fat, requires continued promotional efforts and effective marketing programs. Wisconsin is facing increased competition from the other states, particularly California, for cheese markets. In addition, potential annual increases in milk production during the next decade will demand aggressive and effective marketing strategies in order to maintain farm milk prices.

Recommendation No. 11:

The WDATCP should conduct market research and product feasibility studies for smaller producers and dairy firms; improve the linkage between buyers and sellers so existing markets are more effectively served and new markets established; assist in identifying financing options; provide technical business advice, market plan and strategy development for small and medium-sized dairy firms; and assist in identifying new product opportunities. (PA, R)

The WDATCP has a new applied research and development grants program to help Wisconsin firms develop new products and new markets for agricultural products. This is a competitive grants program and its objective is to help the state's agriculture diversity. The dairy industry is competing for and receiving grant funding. For example, an Asian market study for whey products was funded.

In addition, a small WDATCP staff has been added to work with Wisconsin firms in applied market research. Also, WHEDA operates a new \$10 million loan guarantee program for new agriculture processing or marketing ventures.

Producers and smaller business firms involved in dairy product processing and marketing can obtain market information and technical assistance from staff of the WDATCP. This assistance reduces barriers to market entry.

Demand for technical services are expected to increase in all agriculture sectors, including dairy processing and marketing, as Wisconsin agriculture pursues diversification and business development.

Recommendations Nos. 12 and 68:

To remain competitive and in a leadership role, dairy cooperatives and other dairy firms in Wisconsin and the Upper Midwest should consider increased coordination, joint ventures, centralized marketing systems, possible mergers and consolidation to improve the joint utilization of processing facilities and improve the marketing system. (PA, R)

Cooperatives and other firms that provide farm services, and marketing should consider additional mergers, consolidations, joint ventures and other innovative business arrangements at the national, regional, state and local levels, both to ensure their own economic viability and to be able to offer farmers competitive prices. (PA, R)

Cooperative extension specialists associated with the University Center for Cooperatives, staff with the Wisconsin Cooperative Development Council, and the Wisconsin Federation of Cooperatives have worked with dairy marketing and agricultural supply cooperatives in merger and consolidation discussions and in joint venture arrangements.

There have been more than 30 mergers or consolidations of agricultural supply cooperatives during the past two years in Wisconsin. One major joint venture was accomplished between two major regional agricultural supply cooperatives serving farmers in the state. Two joint ventures have been worked out between dairy cooperatives in the state to provide efficient utilization of whey processing facilities. Two state dairy cooperatives have also merged. There have been exchange of farm pickup routes among dairy cooperatives for improved efficiency in milk assembly. Several investor oriented dairy manufacturing firms, most of which were involved in cheese production, have sold their business and facilities to dairy cooperatives. In most cases this has improved milk procurement and milk processing.

Efficiency of supplying inputs and providing services to Wisconsin farmers may be improved through mergers, consolidations and joint ventures of cooperatives and investor oriented firms. Similar structural changes may improve the efficiency of processing and marketing of milk and dairy products. Lower input costs to farmers and improved processing and marketing efficiencies will help maintain or enhance the competitiveness of Wisconsin's dairy industry.

The structure of Wisconsin farms will continue to change to larger, multi-family and more business oriented operations. In the decade ahead increase environmental pressures and further globalization of agriculture, and new technology will make the business operations of cooperatives and other agricultural firms more complex. In order to adequately meet the needs of larger farming units, cope with changes in the economic environment and respond to major environmental issues the structure of cooperatives and other agricultural firms will also need to change. Additional mergers, consolidations, joint ventures and other business arrangements will need to be considered by these agribusiness firms.

Recommendations Nos. 13, 14 and 15:

Based on future projections of sales trends and the fact that Wisconsin utilizes nearly 80 percent of its milk for cheese, Wisconsin should concentrate its advertising and promotional efforts on cheese. Decisions as to whether Wisconsin's advertising and promotional programs should be generic or Wisconsin-specific should be based on the nature of the program as dictated by the marketplace. Since Wisconsin commands an excellent consumer image for cheese, it should concentrate efforts on promoting Wisconsin cheese rather than supporting generic cheese promotions. An appropriate "Wisconsin" identification, along with a minimum grading standard for "Wisconsin" cheese, should be adopted. Expanded use of the "Real Seal" should be encouraged. (A, R)

Promotional budgets are relatively limited compared to those for other food products. Therefore, to achieve maximum efficiency and market impact the state's promotional activities should be developed as a part of a complete marketing program and coordinated with Wisconsin dairy processors and marketers. The Wisconsin Milk Marketing Board should work closely with dairy processors, marketers, food retailers, fast-food establishments and other away-from-home marketers and wherever feasible coordinate its promotional efforts with other state and national programs. (A, R)

The Dairy and Tobacco Adjustment Act of 1983 established a mandatory 15-cents-per-hundredweight check-off for dairy promotion. Individual state programs may retain up to 10 cents of this 15 cents if producers agree. Wisconsin could benefit if its producers apply the full 10-cents-per-hundredweight to an effective state promotional program. Therefore, the Wisconsin Milk Marketing Board should continue to improve upon and demonstrate the effectiveness of its programs, and producers should be encouraged to apply the full 10-cents-per-hundredweight to the state program. (PA, R)

Since nearly 80 percent of Wisconsin milk supply is utilized for cheese production the WMMB has allocated the major share of its promotional budget to the promotion of "Wisconsin" cheese. Expanded use of the "Real Seal" has been encouraged. The WMMB works closely with the state's and out-of-state dairy processors, marketers, food retailers, and fast-food establishments in the promotions and marketing of Wisconsin cheese. Regional marketing representatives have been employed by the WMMB to work with food establishments and fast-food restaurants. WMMB coordinates its promotional efforts with the National Dairy Research and Promotional Board, the United Dairy Industry Association, and major state dairy promotion organizations.

The state order requires a mandatory 5-cents-per-hundredweight check-off on all milk marketed for the WMMB. The Dairy and Tobacco Adjustment Act of 1983 established a mandatory 15-cents-per-hundredweight check-off for dairy promotion and research. Individual state programs may retain up to 10 cents of their 15 cents if producers approve. The WMMB has been receiving more than 80 percent of the possible additional 5 cents per hundredweight, referred to as the "middle nickel". The Wisconsin Federation of Cooperatives requested that the Wisconsin Secretary of Agriculture hold hearings to amend the state order from a 5 cents per hundredweight check-off to the allowable 10 cents per hundredweight under the federal 1983 legislation. Seven public hearings were held in August, 1990 on the proposed amendment. A producer referendum on the amendment was held January 15-31, 1991.

Wisconsin's promotional efforts have been effective. Annual increases in Wisconsin cheese sales continue to out pace national trends. The relatively strong demand for Wisconsin cheese have resulted in a farm value for milk used for cheese production above the national average.

All forecasts suggest that cheese will continue to be the bright spot on the demand side for dairy. An increasing share of the milk supply will be utilized for cheese production. The promotional efforts of the WMMB to encourage the sale of "Wisconsin" cheese should be continued.

Recommendation No. 16:

Consumer nutrition research and education should be given greater priority. WMMB should continue providing research funds for nutrition research and continue its funding support of the Dairy Council of Wisconsin, Inc. and the Dairy Nutrition Council, Inc. UW-Extension should expand nutrition educational programs for consumers, food service personnel and the general public. Nutrition education should be incorporated in the curriculum at the primary, secondary, post-secondary and college levels. (PA, R)

The State Legislature has added \$125,000 to its yearly allocations for Extension programs for the specific purpose of providing consumer education in the area of biotechnology. Jane Voichick, Professor in Nutritional Sciences at UW-Madison, and Ellen Fitzsimmons, Family Living Education Program Leader for UW-Extension, are coordinating efforts to reach consumers with informative and reliable programs on biotechnology. A 3-day educational conference was presented in October, 1990 for a team of Ag and Family Living Education (FLE) county agents from each district, a satellite teleconference is planned for spring of 1991, and an extensive set of resources are being developed for C.E. county and state faculty to use in presenting biotechnology information to consumers statewide.

As part of the 1991-93 state budget building process, the UW Board of Regents approved a "Research and Public Service" budget request dealing with "food safety and risk." The funding request would provide \$1 million dollars over the biennium and 5.3 research and Extension faculty and

academic staff positions. The positions would strengthen the University's ability to do applied research in the food safety area, and also would provide new resources for transmitting research-based information to industry and to consumers. Included in the budget request is support for research grants and graduate assistants. The Governor's 1991-93 UW System budget bill included no new funding for "Research and Public Service" initiatives, and the food safety initiative can be saved only through Legislative budget action.

Within CALS, a special Food Safety Task Force, jointly chaired by Mary Mennes (Food Science) and Michael Pariza (Food Research Inst.) has been formed to provide more rapid and appropriate response to emerging food and environmental safety concerns of the public. In particular, it provides a quick reference directory that media can use to locate the "right expert."

In addition, several new programs in human health and nutrition have been offered by Extension since the Wisconsin Dairy Task Force recommendations were issued about three years ago. Examples include:

- assessment of food-safety concerns of over 300 producers and consumers at 1989 Farm Progress Days and a similar survey of knowledge related to dietary fat and cholesterol at the 1990 Farm Progress Days.
- a new press series entitled "Food Safety Report" has resulted in food safety releases in over 200 newspapers and magazines this past year.
- comprehensive food safety tabloid for consumers
- increased coverage of food safety topics on radio shows, some 100 two-minute spots dealing with food safety and nutrition were distributed and 150 broadcast news releases dealing with food safety were sent to 300 radio and tv stations and to county faculty who have their own radio shows
- food safety and preservation and nutrition information are available 24 hours a day in via local phone systems in Milwaukee and the surrounding area.
- a series of training materials have been produced and utilized statewide to inform consumers of sensible ways to implement the dietary guideline that currently urges Americans to choose a diet low in fat, saturated fat and cholesterol.

In addition to Extension programs, there are nutrition research projects in CALS that relate to this recommendation. A new professor in Nutritional Sciences (Ney) has research funds provided by WMMB for investigation of the effects of milk fat on lipid metabolism. Additional work on calcium and minerals in milk products is also being conducted in Nutritional Sciences.

Interdisciplinary work with the Dept. of Food Science and the Nutritional Sciences Dept. is also being conducted to examine the effects of potential modifications of milk fat on nutritional characteristics.

The Kellogg Foundation has provided support for an extensive nutrition education program in Nutritional Sciences and other departments of CALS. A major part of this program has focused on

development of innovative methods for reaching medical and agricultural professionals and students with information on calcium and osteoporosis, lipids and coronary heart disease, and diet and cancer. An innovative computer instruction tool on nutrition and osteoporosis for health professionals is one of many materials that have been developed under this program.

Enhanced funding for nutrition and nutrition education research, especially funding to train graduate students, and support for Extension programs, would enable CALS departments to conduct studies and CES to expand programming that relate to this recommendation.

There are limitations to Cooperative Extension's abilities to reach food service personnel with food safety and nutrition information because the VTAE system and DPI have the major responsibility for training employees in these occupations. Although CES does not have special programs for this clientele group, when food safety or nutrition programs are offered in the community, anyone may attend.

As consumers are more well-informed regarding issues that relate to the nutritional quality of milk and dairy products, the demand for milk products will be more reliable and marketing of milk products will be facilitated. Furthermore, research on nutritional aspects of milk will help to clarify issues on development of coronary heart disease that relate to the perceived quality and desirability of milk products.

Since this recommendation was written, Dairy Council of Wisconsin and the Dairy Nutrition Council, Inc. have been merged and a new Dairy Nutrition Council foundation to support nutrition education research has been formed. The Dairy Council of Wisconsin has a new professional staff position devoted to interpreting food labeling regulations and other government requirements for producers and processors of dairy products in Wisconsin.

Recommendation No. 17:

Quotas established under the 1979 International Trade Agreement have kept dairy imports at reasonable levels--less than 2 percent of domestic production. A new round of GATT international trade negotiations is now underway. U.S. dairy quotas will be under strict review. Therefore, the Wisconsin dairy industry should make known to its respective Congressman and Senators and U.S. trade negotiators the importance of maintaining Section 22 of the Agricultural Adjustment Act of 1935, which provides for import restrictions. GATT negotiators should also be instructed to negotiate for restrictions on export markets. (A, R)

GATT international trade negotiations have been underway for the past three years. Section 22 of the Agricultural Adjustment Act of 1935, which provides for dairy import protection has been part of the GATT negotiations. Some fear that erosion of Section 22 protection could substantially increase US dairy imports and adversely affect dairy farm milk prices.

CES dairy marketing and policy specialists have kept U.S. Congressmen, Senators, farm organizations and dairy leaders informed as to the extent of U.S. dairy imports and the importance of Section 22 as well as potential impact of any erosion of Section 22 protection. Congressmen and Senators as well as representatives of farm organizations have had the opportunity to provide to U.S. GATT negotiators and the U.S. Secretary of Agriculture information on the importance of Section 22 protection to the U.S. dairy industry.

The outcome of the GATT negotiations is not known at this time. Nevertheless, if the final GATT provisions for dairy are equitable among the major world milk producers, the U.S. dairy industry will be extremely competitive internationally. The concern is that the final outcome of GATT will not provide for equitable treatment for dairy.

CES will have the responsibility of informing the dairy industry of final provisions of GATT negotiations and their implications. If implications are negative for the U.S. dairy industry, CES should work with the industry to minimize or correct this negative impact.

Recommendation No. 18:

If, as a result of an ITC investigation or USDA study, imports of casein are found to render ineffective or materially interfere with the dairy price support program, an import quota should be imposed on casein and mixtures of casein to prevent a continued expansion on imports. (A, R)

CES dairy marketing and policy specialists have kept U.S. Congressmen and Senators informed of the extent of U.S. imports of casein. There has been no action regarding establishment of quotas on casein imports. Nevertheless, since the Dairy Task Force Report casein imports have declined and the concern over casein imports has lessened. The world market price for casein has risen making it relatively expensive and not as competitive with U.S. nonfat dry milk and milk protein prices. In addition, the market for imitation cheese which uses casein has been weak.

Market conditions can change and casein imports may once again become an issue to the US dairy industry. CES needs to monitor the casein import situation and keep the industry and political leaders informed of any major developments.

Recommendation No. 19:

Although the Food and Security Act of 1985 called for limited subsidization of domestic casein production through the use of surplus nonfat dry milk or an equivalent amount of skim milk, the government should further study the economics of subsidizing the manufacturing of casein in the U.S. to the extent of making domestic casein price competitive with imported casein. Research should also be conducted on the feasibility of casein substitutes such as whey proteins. (PA, R)

Research on development of casein substitutes has been limited. This is not an easy task as indicated by the apparent lack of complete success by major dairy research groups in the Netherlands and New Zealand. A research project at UW-Madison is underway to enhance the gel-forming properties of whey proteins. This could yield products that would partially substitute for casein.

Long term commitment by the State of Wisconsin and WMMB is needed to support research in improving the properties of whey components and uses for these components. Increased use of consultants to mentor younger investigators also is needed. Greater assistance and guidance should be given by the Offices of Faculty and Staff Development and Business Services to facilitate the hiring of such consultants.

Recommendation No. 20:

Since U.S. dairy farmers are subject to a mandatory 15-cents-per-hundredweight assessment for dairy advertising, promotion and research, 15 cents per hundredweight of milk equivalent should also be assessed against importers of dairy products. (NP, R)

No progress has been made on this recommendations. Federal legislation has been proposed but not passed. Nevertheless, this remains an issue for the dairy industry.

Recommendation No. 21:

The WDATCP's International Agribusiness Center, in cooperation with the Wisconsin Department of Development, the Wisconsin Dairy Expo, the Animal Health Division's Foreign Trade Center, and Wisconsin's dairy and livestock industry, should expand the export of Wisconsin's dairy cattle, semen, embryos, alfalfa and other agricultural products. (PA, R)

CALS and the School of Veterinary Medicine have been actively developing packages of technology in animal production and health in several foreign countries, in support of export of Wisconsin-based dairy cattle germplasm. This technology transfer in support of dairy development and long-term markets for Wisconsin dairy genetics was not specifically contemplated in the original recommendation, but will be a key contributor to the success of Wisconsin dairy germplasm, particularly in developing countries.

Budgetary limitations are the main constraints to increased activity. The WDATCP and its International Agribusiness Center continues to pursue expanded exports of Wisconsin dairy cattle, semen and embryos. Potential cattle exports exist for Mexico and South America countries. Semen and embryo export potential exists for the Soviet Union and Eastern Europe.

Recommendations Directed at Farm Milk Pricing:

Recommendation No. 22:

The University of Wisconsin, in cooperation with the dairy industry, USDA, and other universities, should initiate research to find an alternative to the Minnesota-Wisconsin Price Series (M-W) as the order pricing base for "manufacturing" milk value. (A, NR)

A proposed UW study on alternatives to the current M-W price was abandoned when the U.S. General Accounting Office (GAO) initiated such a study in 1988 and asked University of Wisconsin dairy marketing and policy specialists, Cropp and Jesse to serve as advisors. The GAO study was completed in late 1989. It did not recommend a specific alternative to the M-W price, but it did evaluate several options and concluded that either a Grade A manufacturing price series (including the value of Grade A milk used for manufacturing as well as Grade B milk) or a product formula price (based on market prices of butter, nonfat dry milk, and cheese) would represent a reasonable replacement.

Since publication of the GAO report, USDA has initiated a specific procedure and timetable for replacing the M-W as the basic formula price under federal milk marketing orders. Suggested alternatives were solicited from the dairy industry from June through September 1990. Selected alternatives will be calculated monthly and compared with the current M-W price series from October 1990 through September 1991. USDA will issue a report on this test in October 1991 and invite proposals for formal hearing in November 1991. Based on this national hearing, USDA will select and implement an alternative by May 1992. The Food and Agriculture, Conservation and Trade Act of 1990 also requires the Secretary of Agriculture to follow a similar timetable.

Wisconsin would be served best by an M-W replacement that required manufacturers in other states to pay competitive prices for milk used for cheese. This implies a competitive pay price for Grade A milk used for making cheese. Other states would prefer to replace the M-W with a product price formula, in order to assure manufacturers that they would pay no more than what milk was worth in hard products. The distinction is important. Often, Wisconsin plants "out-pay" the imputed product value because of the intense nature of competition for cheese milk in the state. If a product price formula were adopted to replace the M-W price, Wisconsin cheese plants would periodically be at a competitive disadvantage to cheese plants in states where there is limited competition for milk that is "surplus" to the fluid market.

This issue is now outside the academic/extension environment. Implementation of an M-W alternative now depends upon dairy producer and dairy industry support.

Recommendations No. 23, 24 and 25:

Merge orders to create a limited set of regional orders reflecting national marketing areas based on common production and distribution characteristics. (PA, R)

Replace the system which makes Eau Claire, Wisconsin, the single basing point for all federal orders with a multiple basing point pricing system for setting Class I differentials, in light of the fact that the Upper Midwest is not the only area that has reserve Grade A milk available to fill deficit needs. Multiple basing points are particularly important under regional orders. (PA, R)

Amend federal orders to remove pricing restrictions on milk shipped in concentrated form for use in fluid products. Reconstituted milk should be priced according to its Class I value in the source market. (PA, R)

These three recommendations involve fundamental changes in federal milk marketing orders. The DTF recommendations were adopted verbatim by the Dairy Coordinating Committee established by former Wisconsin Secretary of Agriculture, Trade, And Consumer Protection Howard Richards as a result of DTF recommendation #75. Substantial progress has been made toward their implementation.

On March 31, 1990, U.S. Secretary of Agriculture Clayton Yuetter announced a national hearing to review pricing provisions of federal milk orders. Interested parties were invited to submit proposals for amending order provisions involving Class I price differentials, basing points for order Class I prices, Class II price differentials, and treatment of reconstituted milk. An Upper Midwest coalition was formed to develop and defend proposals to eliminate single basing point pricing and pricing restrictions on reconstituted milk. Coalition activities were coordinated by the Wisconsin Federation of Cooperatives with assistance from UW-Extension specialists.

The national hearing commenced September 5, 1990, and concluded November 20, 1990. The proposals submitted by the Upper Midwest coalition call for a uniform Class I differential and pricing and allocation procedures for concentrated milk that are the same as those currently used for whole milk transfers between orders. Order mergers (Recommendation #23) are not directly part of the proposal, but would be encouraged by the uniform differential. The use of multiple basing points was judged to be inferior to using no basing points, but rather setting the same minimum price at all locations.

The Department of Agricultural Economics has made a major commitment to providing whatever assistance is necessary to ensure the satisfactory resolution of the national hearing. UW economists Bob Cropp, Bill Dobson and Ed Jesse and WDATCP economist Will Hughes helped develop the Upper Midwest proposal, testified in support of the coalition proposals, assisted in examination of witnesses at the hearing, and prepared or supervised the preparation of hearing exhibits.

The economic benefits of the proposed changes in federal milk marketing orders are long-run in nature. Current pricing rules under federal milk marketing orders have encouraged the expansion of milk production in regions that were previously deficit with respect to production of milk for fluid markets. This has contributed significantly to production of nonperishable manufactured dairy products, especially cheese. In turn, this has added to surpluses of manufactured products, placing downward pressure on prices for milk used for manufacturing and penalizing Wisconsin dairy farmers. The benefits of the proposed changes in federal order pricing are in their diminishing of the current incentives to expand milk production in non-traditional regions.

Recommendation No. 26:

The UW Center for Dairy Research, involving University of Wisconsin food scientists and agricultural economists, should conduct further studies on consumer acceptability and economic feasibility of various reconstituted products made from alternative forms of milk concentrate and study the economic impact of such practices on the Wisconsin and U.S. dairy industries. (A, NR)

A UW-System Agriculture and Natural Resources Consortium project was funded in 1988 to study this issue. The project was completed in 1989. Several taste panels were conducted through the Department of Food Science Sensory Perception Laboratory that compared reconstituted milk drinks with conventional counterparts. Concentrate forms were reverse-osmosis skim milk and nonfat dry milk. Products tested were 2-percent low-fat milk, 2-percent chocolate milk, and whole milk. The low-fat products were blends of whole milk, water, and concentrated milk. Butterfat and solids-not-fat composition was equated between experimental products (reconstituted) and controls (conventional products).

For the 2-percent products, panelists were either indifferent between conventional and reconstituted products or preferred the reconstituted form. Panelists did not like the fully-reconstituted whole milk, which required blending 40% cream with nonfat dry milk.

These results indicate large potential markets for reconstituted milk. The growth in fluid milk sales has been in low-fat forms. Lowfat blended fluid milk products, consisting of whole milk, concentrated milk, and water, are demonstrably acceptable to consumers.

Subsequent analysis simulated market conditions under the assumption that current pricing restrictions on reconstituted milk were removed. Compared to the cost of local whole milk, concentrated milk from Wisconsin would represent a lower-priced raw milk source in markets 500-800 miles or more from Wisconsin.

The primary effect on the Wisconsin dairy industry of widespread adoption of reconstituted milk would be to place a limit on milk prices in distant regions of the country. In turn, this would discourage expanded milk production in those regions and ultimately raise prices for manufactured dairy products. Wisconsin uses 85 percent of its milk for manufactured products, and will benefit from the elimination of subsidized competition as represented by current federal order pricing and allocation rules applying to reconstituted milk.

Recommendation Nos. 27 and 28:

Multiple-component pricing should be incorporated into farm pricing by all of the state's dairy plants. Wisconsin should support amending federal milk marketing orders to accommodate multiple component pricing. (PA, R)

Any multiple-component pricing plan or milk quality program that pays premiums for milk above an established standard of composition or quality should deduct for composition or quality below that standard. WDATCP should monitor payment plans to make sure they are fair and cost-justified. WDATCP should have adequate staff to investigate unfair pricing charges and to enforce non-discriminatory pricing where necessary. (PA, R)

All or nearly all dairy plants in Wisconsin pay protein premiums. But progress in implementing the second part of this recommendation has been slow. The U.S. Department of Agriculture has made a policy decision to consider Multiple Component Pricing (MCP) in individual orders only at the request of interested parties (not in a national hearing). Currently, only one order uses MCP. MCP is being considered in a few others, but there has been no action to institute MCP in the Chicago and Upper Midwest orders, which price most of the Grade A milk in Wisconsin. The Food and Agriculture, Conservation and Trade Act of 1990 requires the Secretary of Agriculture to

study multiple component pricing for federal milk marketing orders and to hold national hearings on proposals.

Fluid milk processors object to MCP on grounds that they cannot recover the higher cost of high-solids milk through the fluid milk marketplace -- that relatively high protein or SNF milk is only of higher value in manufacturing. Another impediment is lack of consensus about the nonfat priced component -- whether it should be protein or SNF. Some argue that the current private system of nonfat component premiums is preferable to locking in a particular MCP plan. Finally, there is a problem of adopting MCP in federal orders at a time when the basic formula price (the M-W price) is being replaced and when butterfat values are being firmly fixed by Commodity Credit Corporation butter prices.

In reality, MCP is universally used to price Wisconsin milk. The method is through protein or SNF premiums, employed by practically all plants. The benefit of institutionalized MCP is in uniformity of payment and in its ability to penalize producers of milk containing low levels of valuable components as well reward producers of milk with high levels. In the long-run, MCP under federal orders would provide better market signals to producers, encouraging the modification of milk composition in conformance with consumer preferences.

Economic studies and educational efforts related to MCP have been extensive. Adoption of MCP in federal orders awaits resolution of other milk pricing and policy issues. The U.S. Secretary of Agriculture is directed under the 1990 Farm Bill to study MCP and how it might reduce the excess milk fat problem.

Recommendation No. 29:

Although raising federal standards for fluid milk solids has considerable merit, there remains much uncertainty as to the net impact on consumer sales of fluid milk products, government costs of purchasing nonfat dry milk and butter, and net producer pay prices. Further research is needed to assess the net impact on the dairy industry of raising federal standards for fluid milk before pursuing further the adoption of higher standards on a national basis. Wisconsin should take a lead in this area, not only because higher standard(s) for fluid milk solids may improve fluid milk sales, but also because higher standards may eventually help get multiple-component pricing incorporated into federal milk orders and thus hasten component pricing on an industry-wide basis. (PA, R)

There has been no progress on the research indicated in this recommendation, largely because of higher priority research issues. Wisconsin did pass legislation requiring higher SNF standards for fluid milk, but the legislation was contingent on neighboring states adopting comparable standards.

Evaluation of the potential economic benefit of increased solids standards would require analysis of primary data on the relationship between fluid milk sales and solids content. This would likely involve experimental consumer taste panels, perhaps through the food science sensory perception lab. Estimated Department of Agricultural Economics input would be 1/2 faculty FTE for one year.

Incorporation of component pricing into federal milk orders will occur with or without such a study. Higher solids standards may alleviate some fluid processor objections to multiple component pricing, but these objections can be otherwise dealt with.

The Economic Research Service of USDA conducted a definitive study on this issue in 1983, concluding that elevating standards would have little or no effect. Specifically, the added cost of fortification would elevate fluid milk prices and reduce consumption. This would offset gains associated with increased powder/concentrated skim milk sales for fortification. The relatively high per capita sales of fluid milk in California are often attributed to high solids standards. USDA's study pointed out that high fluid use in California was attributable to factors other than high standards.

Shortages of nonfat dry milk accompanied by high prices since early 1988 has substantially diminished interest in raising SNF standards.

Recommendation No. 30:

Since farm-to-plant hauling costs account for 1 percent to 4 percent of the cash cost of producing milk, and are an important factor in the net raw product cost to plants, the Wisconsin dairy industry should consider various alternatives for improving the efficiency of milk hauling. These include improved routing, further reduction in route duplications, and exchange of producer milk among competitors. (PA, R)

Considerable progress has occurred in the efficiency of milk plant procurement. Milk plants and dairy cooperatives have re-routed and consolidated farm pickup routes for improved efficiency. Larger and more fuel efficient trucks partially made this possible. Exchange of producer milk among competitors has also become more common.

A University of Wisconsin System Consortium research project directed at computerizing farm milk pickup routes for improved efficiency is currently underway. A Wisconsin milk plant is involved in the study.

Dairy producers themselves often resist change if it means a change in their hauler. Milk haulers themselves resist changes in farm pickup routes fearing loss of milk volume hauled and resulting reduced income.

Improved efficiency in farm milk pickup results in improved net farm milk prices as well as improved milk plant operations. Milk haulers also benefit through more efficient utilization of their trucks.

There remains a potential for significant additional reductions in farm-to-plant milk hauling costs.

Recommendation No. 31:

Wisconsin farm-to-plant hauling costs should not be regulated, but it is recommended that the WDATCP be adequately staffed to address unfair hauling practices when deemed necessary. In addition, the procedure by which milk plants report producer pay prices for the M-W Price Series should be changed to require plants to include all premiums and hauling subsidies in their report, so that the M-W Price is a more reliable indicator of "manufacturing" milk value. (NP, NR)

Wisconsin farm-to-plant hauling costs remain unregulated. The WDATCP does monitor unfair hauling practices. Budget limitations prevent further monitoring of hauling charges.

The USDA current study of alternatives to the M-W price will no doubt include the issue of hauling subsidies.

Recommendation No. 32:

Wisconsin should support dairy legislation that will maintain its competitive position and profitability in dairying and will allow the state to exploit its advantages in a growing cheese market. (A, R)

The state has supported beneficial legislation through the recommendations of the Wisconsin Dairy Coordinating Committee (Recommendation #75). Dairy marketing and policy specialists in the Department of Agricultural Economics have worked very closely with Wisconsin Senators and Congressmen in developing and evaluating policy proposals for 1990 farm bill consideration. They also have assisted Wisconsin farm organizations, trade associations, and dairy cooperatives in developing and analyzing positions and options. Dairy price support policy has become increasingly market-oriented, which will tend to benefit Wisconsin in the long run. Federal Milk Marketing Orders are not currently market-oriented, but changes are being actively sought by Upper Midwest dairy interests.

The workings of the political process, federal budget limitations, and regional differences in economic interests as related to dairy legislation all serve to impede progress in this area.

Benefits of supportive dairy legislation are self-evident. Wisconsin would be best-served by legislation that removes special privileges and pricing distortions and allows market forces to play a larger role in shaping production decisions while retaining safety-net support levels.

Recommendation No. 33:

The state should create within the DATCP a unit responsible for systematically reviewing proposed federal and state policy, rules, and standards which affect Wisconsin's agriculture and competitiveness. UW policy and marketing specialists should work closely with the WDATCP in impact analysis and in formulating appropriate action. (PA, NR)

No identifiable dairy policy analysis unit has been established within WDATCP. However, UW dairy marketing and policy specialists do work very closely with WDATCP staff in evaluating the effect of policies and rules that affect the competitiveness of Wisconsin's agriculture. Also, the Wisconsin Dairy Coordinating Committee has, as part of its overall charge, responsibility for systematic review of policies and related recommendations for changes.

Budget considerations have prevented the full implementation of this recommendation.

It goes without saying that more analysis is better than less. However, the recent augmentation of dairy marketing and policy resources in CE and CALS combined with the close and excellent working relationship between the Department of Agricultural Economics and DATCP suggest that there is limited need for a free-standing unit within DATCP to systematically review dairy policies.

Recommendation No. 34:

The University of Wisconsin should develop an economic model to analyze the impact of dairy price policy and related milk pricing and marketing issues. Research funds should come from the Wisconsin Milk Marketing Board, the dairy industry contributions, and the state. (A, NR)

In response to this recommendation, the Department of Agricultural Economics initiated a major three-year project on interregional competition in the U.S. dairy industry on July 1, 1989. The project involves four Department faculty, Center for Dairy Research staff, and several research

assistants. The current focus is on modifying and improving regional estimates of supply response and developing regional estimates of demand elasticity for major dairy products. These estimates will subsequently be used in a mathematical programming model that will allow assessing the economic impact of specified changes in demand, supply, and policy.

Funding for the project is being provided jointly by the Wisconsin Milk Marketing Board and the Wisconsin Agricultural Experiment Station.

When completed, the interregional competition model will allow appraisal of a number of policy and marketing scenarios. Its use will facilitate assisting state and federal legislators in policy development and analysis. The model will also permit better long-range planning for product and market development.

Recommendation No. 35:

The pricing and marketing of milk and milk products should be a part of the curriculum of high school vocational agriculture, vocational and technical education, UW short courses, and undergraduate agricultural programs of the state's three colleges of agriculture. UW-Extension should provide information and educational programs to help milk plant operators and field staff, handlers and farmers understand milk pricing, marketing, and policy. (A, R)

Major progress toward achieving this objective as it applies to high school and vocational school training was made with the development of a dairy marketing curriculum package at UW-Platteville. This effort was funded through a Wisconsin Milk Marketing Board grant administered through the National FFA Foundation.

Dairy marketing is a separate course in UW-Madison's Farm and Industry Short Course program. Dairy marketing courses are part of the undergraduate curriculum at UW-Platteville and UW-River Falls.

UW-Extension specialists developed an extensive teaching package on milk pricing in 1989 which was used in approximately 25 one-day training seminars for dairy plant personnel, UW-Extension county faculty, and dairy farmer leaders in Wisconsin, Minnesota, Iowa, and Michigan. County agents selected participants in these Dairy Leader Training Sessions to maximize leverage. Also, an extensive set of Dairy Marketing and Policy Briefing Papers on milk pricing issues have been distributed.

The most observable effect of the UW-Extension education effort was a grass-roots political campaign in Wisconsin and Minnesota to modify milk marketing orders to eliminate their discriminatory effects on the Upper Midwest. That effort culminated in the national hearing called for

the Fall of 1990. The ultimate benefits of the hearing remain to be seen, but it is fair to say that Wisconsin farmers are considerably more knowledgeable about how their milk is priced, and will be more diligent in seeking fair treatment.

Recommendations Directed at Secondary, Post Secondary and University Levels of Education:

Recommendation No. 36:

The University of Wisconsin, in cooperation with VTAE should conduct research to assess Wisconsin's future needs for human resources and expertise in the food and agricultural sciences. The project should be funded jointly by the educational institutions, the Department of Public Instruction and the Wisconsin VTAE system with support from agribusinesses. (NP, R)

No new faculty have been hired in this general area. Nor have any faculty shifted their area of expertise into this area of specialization. Rural sociology has recently made plans to recruit an agriculturist with these skills. New curriculum guide was published by DPI supports this area of inquiry. The new curriculum developed by CALS as part of its Kellogg Curriculum Project is supportive of this general recommendation.

There have been no new resources allocated toward implementation of this recommendation. Limited progress that has been made for this area is due to fortuitous, independent funding and/or special interests of graduate students.

Recommendation No. 37:

Educational institutions, agricultural businesses and agency representatives should cooperate to devise marketing strategies to recruit talented youth and adults into educational programs where expertise is most needed. Joint programming such as the "Agribusiness Seminar on Wheels," sponsored by Wisconsin Farm Progress Days, Inc., should be included in such activities. An effort is needed to improve the image of agriculture so that more students select a career in food and agricultural sciences. (PA, R)

Programs sponsored by CALS have continued to present opportunities in agriculture to young people. The Agribusiness Seminar on Wheels, sponsored by Wisconsin Farm Progress Days, Inc. and coordinated by CALS, has included high school science teachers in the invitation to the program for the past three years. For the 1990 tour, nearly 50% of the group was science teachers. The Dairy Science department at CALS has filled the Dairy Youth Specialist position with UW-Extension as of

November 1, 1990. The ability to fill this position, which has been vacant for over a year, will greatly improve the UW outreach efforts for dairy industry education. No progress has been made on the proposed Dairy Symposium for students and educators due to lack of funding and coordination. CALS has expanded scholarship opportunities for both the degree and the Farm and Industry Short Course programs.

The imposition of the \$3.00 admission fee for World Dairy Expo has generated negative reaction from Agricultural Education Instructors, and there has been a marked decline in participants in the Saturday morning FFA judging contest. Special pricing for young people or group rates may help to encourage more young people to participate in this major dairy industry event.

Recommendation No. 38:

Each level of agricultural education and each educational institution should assess its curricula to provide an analytical base for curricular innovations for the 1990's and beyond. Educational institutions should carefully assess course content and, where necessary, revise, expand, eliminate or create new courses or modules. High school vocational agriculture curricula must move away from a narrow, traditional emphasis on production agriculture to a more contemporary approach that also includes processing, marketing, management, agribusiness, and computers, as well as strengthening the science emphasis. Educational institutions, the Department of Public Instruction and the Wisconsin Board of Vocational, Technical, and Adult Education should provide funds for curricula development. (PA, R)

Curricular assessment of agricultural education at UW-Madison has been underway for the past four years, primarily under the Kellogg Foundation sponsored Curricular Revitalization Project. An outcome of the Project has been the development of suggested curricular requirements for agricultural and life science majors that respond to the needs of graduates at the beginning of the next century. Some of the recommendations are (a) to increase the communications skills of graduates; (b) to assure that students have computer and statistical abilities; (c) to assure that all students undertake some international studies; (d) to assure that all students have had an integrative learning experience for more effective decision making and problem solving; and (e) to develop a respect for truth, tolerance for diverse views, and a sense of personal and professional ethics. It is expected that many of the curricula and courses will be effected by the beginning of the 1991-2 school year. Major curricular changes have been completed as of 1990 in all major programs in the College of Agriculture at UW-Platteville. The College of Agriculture at UW-RF had approved a new biotechnology major in 1990.

The entire model for delivery of Agriculture Education in the K-12 system has been revised in a 1988 "Guide to Curriculum Planning in Agriculture Education", which has been introduced and continues to be the basis of change. The Tech-Prep initiative of the Department of Public Instruction

will provide additional opportunity to integrate basic skills into the agriculture classroom, and the agriculture literacy objectives of the Department along with the "Ag in the Classroom" program and other programs such as those conducted by the Wisconsin Agribusiness Council, will assist in meeting the goals. Innovations such as alterations and inservicing of satellite technologies and computer networking, as well as cooperative learning, concept learning, and a greater structure to the traditional problem solving approach to teaching in agriculture all are contributors to this effort as well. Although we have done a lot, we have received little in any support of one major resource - money. The loss of one staff position in the DPI has been another devastating blow to progress.

At the Vocational, Technical and Adult Education level, the curriculum projects and/or program development initiatives that have taken place in the last three years are: (a) statewide program delivery and curriculum revision for the Farm Business and Production Management Program (formerly Farm Training); (b) Chippewa Valley Agribusiness Technology Project (curriculum development); (c) development of the Biotechnology Laboratory Technician Program at Madison Area Technical College; (d) development of a second VTAE Food Science Technician program at Blackhawk Technical College in Janesville; (e) Curriculum development in Sustainable Agriculture for post-secondary programs funded by DATCP; (f) program development underway for a Food and Environmental Laboratory Technician Program at Northeast Wisconsin Technical College in Green Bay; and (g) dissemination of Wisconsin Milk Marketing Board marketing curriculum to all appropriate VTAE instructors.

Recommendation No. 39:

As high school vocational agriculture curricula give stronger emphasis to science, mathematics and computer technology, at least one credit of vocational agriculture should apply towards graduation requirements in applied science, mathematics or computer science. (PA, R)

Procedures are in place for high schools in Wisconsin to gain approval from the Wisconsin Department of Public Instruction (DPI) to give credit towards graduation for agricultural education classes under science, mathematics or other subject areas. It should be noted, however, that approval by the Department of Public Instruction for high school graduation credit does not automatically mean that the course will be accepted for pattern requirements for admission to universities in the University of Wisconsin System. The counting of agriculture credits for admission also varies from institution to institution. For example, UW-River Falls will count up to two units of vocational credits toward the 16 academic units required by the Board of Regents for admission to a UW System institution. UW-Madison will review courses for science content on a high school by high school basis before accepting the course to count for an academic unit. UW-Platteville follows a procedure similar to UW-Madison. Agricultural education courses that have been approved for course equivalency additionally will be reviewed by UW institutions to meet science, mathematics or other entrance requirements. There is a new effort afoot, lead by a group of guidance counselors, to produce a bill or

referendum which automatically would allow agriculture to be accepted for science credit. They have already contacted all UW System schools and say that they have received a surprising amount of cooperation and support for their idea. The state's colleges of agriculture have made a number of positive inroads with science consultant staff and supervisors, and have a good working relationship, and a friendly ear there at this time.

The process for gaining DPI course equivalency for high school graduation is very time consuming and has been hampered in the past by a very inflexible attitude by the certification department of DPI with regard to teacher certification and the ability to teach certain classes. For example, only biology certified teachers could teach a class that merits biology credit. Supposedly, moves are underway to reduce this inflexibility. The lack of uniformity between high school graduation and UW admission standards, combined with the differences among universities in the UW System, has also caused much confusion among agriculture instructors, guidance counselors and school administrators. Continuation of efforts to reduce this confusion should be continued.

Recommendation No. 40:

Legislation should be drafted to reduce the number of required credits in education, liberal arts, and social and behavioral science for vocational agriculture teacher certification, and to give universities more authority to set professional and degree requirements. (PA, R)

Limited progress has been made in implementing this recommendation. The DPI is over two years behind in filing its report of the evaluation of all the teacher education programs at U.W. Madison. As the Task Force correctly noted, the trend has been toward expansion of liberal arts, humanities and social science requirements. Discussions have been held with critical Agricultural Education professionals but caution has been urged. The legislature did approve a new consultant position at the DPI but funding has not been achieved.

Several impediments were noted in the above paragraph. The basic one is timing: when would be an appropriate time for this? Also, there currently is no chief Ag. Ed. consultant at the DPI.

The benefits of this recommendation would be more technical preparation on the part of the teacher.

The DPI has a provision for an "experimental" certification format and this has been discussed. No one has fully recommended that approach at this time as to consequences are not clear.

Recommendation No. 41:

Adequate supply, expense and capital funds (operating budget), and faculty and support staff should continue to be provided for instructional programs in food and agricultural sciences....Institutional laboratory modernization should remain a top priority budget item. (PA, R)

The Department of Agricultural Economics, UW-M has established a well equipped computing laboratory for undergraduate instruction. In addition, the CALS Department of Computing and Biometry has developed a microcomputer laboratory for undergraduate instruction that is available to all departments and students in the College. The Dairy Science and Agricultural Engineering departments are remodeling space to establish a Machine Milking Laboratory for instruction of undergraduates, veterinary students, and extension clientele. Support is being sought from the milking machine industry to equip the laboratory. Faculty in the Dairy Science Department have developed a state-of-the-art computer simulation for instruction in dairy cattle breeding. The software has been distributed to nearly 40 colleges and universities throughout the world. Student labor is being used to the maximum extent possible for operating the Madison campus dairy cattle center. Excellent dairy instruction and experience is provided to both farm reared and urban students in cattle and personnel management. At any given time around 35 students are employed on a part time basis and over the course of a year around 55 students gain experience at the center.

A modern food science laboratory exists on the UW-RF campus. UW-Platteville completed a new dairy housing and computerized milk parlor facility in 1990.

At the university level supply and expense budgets have remained essentially constant over recent years. Increases are needed to offset inflation and enhance programs. Support staff are needed for development of instructional media such as computer software and visual aids. Teaching laboratories in Food Science are not as well equipped as those of peer institutions.

Babcock Hall, which houses the majority of the Department of Food Science, is presently undergoing a \$6,012,000 addition and remodeling. This is Phase I of a two-phase program. As of September, 1990, Phase I was 33% complete. This is a capital building program and will result in significant new and remodeled space for Food Science research, teaching and outreach. Phase II is scheduled for completion in the 1990s, but is subject to further action by the Board of Regents and the State Building Commission.

Other capital facilities that are programmed for the near future are the Large Animal Holding Facility which will contribute research and teaching space for students in Dairy Science and related activities. This project is scheduled to go out for bid sometime in 1991.

The Department of Food Science received \$175,500 in the Instructional Laboratory Modernization Program for 1987-89 to improve Room 125.

Supply and expense and capital funds continue to deteriorate at the high school level. State and federal funds have been cut. The Wisconsin Leadership Council for Agriculture Education is addressing these issues. Similar budget problems exist at the VTAE level.

Recommendation No. 42:

Educational institutions, business and industry, and agencies should cooperate to expand supervised occupational experience programs at the secondary level and internship programs at the post-secondary and university levels. (PA, R)

Supervised occupational experience programs have been encouraged at the secondary level. However, no data exists as to expansion at this level. VTAE agricultural areas do have supervised occupational experience programs, however, needed resources limits the program.

At the university level excellent cooperation has been in existence with Internship Programs due to the special efforts of the Academic Affairs section of the University of Wisconsin System Agriculture and Natural Resource Consortium.

Currently all representatives are finding a shortage of students in the dairy-related areas among others. This usually gets translated in human resource and expertise chasms in the near future.

Strong efforts are being made to promote these programs and excellent opportunities. Some universities have even formalized intern marketing programs to better promote the information regarding the concerned trends among college students. These efforts are also being taken into the high schools where prospective students and their parents as well as teachers and counselors are the primary targets.

Related business, industry and agencies are also playing an active and supporting role in these programs. Their very strong and progressive interests in internship and cooperative education experience programs is indicative of their concern and stance regarding the Dairy Industry. Their willingness and participation in Career Fairs at the university level and also at the high school level shows this concern and dedication.

Both students and employees benefit from these work experience programs. Students get a better perspective on careers in agriculture. Employers can use work experience programs for employee recruitment. Retention of employees recruited under these programs is enhanced.

Recommendations Directed at Continuing Education Plan for the Dairy IndustryRecommendations Nos. 43, 44, 45, and 46:

CES and VTAE agricultural education programs should be coordinated at the state, district and county levels to provide the most efficient educational and informational system to improve the profitability of the dairy industry of Wisconsin. Adequate funding must be provided to hire, retain and support qualified professional and technical support staff. (PA, R)

UW-Extension and VTAE and other educational resources can be shared on an area (multi-county) basis through purchase of service agreements, memoranda of agreement or other cooperative arrangements consistent with the respective missions of the two institutions (B). (NP, R)

UW-Extension should provide educational programs and VTAE should provide instructional classes that are research-based to serve the high-priority educational needs of targeted dairy producers as identified on the basis of producer experience, management skill and level of knowledge and understanding. (PA, R)

More dairy farmers should take advantage of ongoing educational programs. UW-Extension and VTAE must actively publicize their educational services to tell dairy industry clientele what opportunities and benefits are available and how to take advantage of them. (PA, R)

Progress has been limited in regards to these four recommendations. Further coordination of CES and VTAE agricultural education programs is required. Further review of missions and policies that more specifically delineates continuing educational responsibilities of CES and VTAE is still needed. A task force composed of representatives of CES and VTAE has not been able to satisfactorily resolve coordination and more specific agricultural educational responsibilities between the two institutions. The need for this agreement still exists.

Examples exist within the state where CES and VTAE presently work closely together in coordinating agricultural education programs. However, this is not the situations throughout the state.

Sharing of a county agent among two or more counties has been implemented in Wisconsin. These agents provide a more specialized educational service to the counties involved. The following counties are sharing agents: Door and Keweenaw; Sheboygan, Ozaukee and Washington; Marinette and Oconto; Marathon and Lincoln; and Waushara and Green Lake.

Cooperation among state extension specialists from different states who serve the dairy industry is also occurring. Dairy extension programs are being jointly offered by the cooperative extension services of Minnesota and Wisconsin via of satellite, the "Dairy-Live" program. A four-state dairy in-service program for county agents was offered jointly in 1990 via of satellite by the states of Wisconsin, Iowa, Illinois and Minnesota. These four states have offered other regional dairy meetings in recent years.

A greater percentage of the state's dairy farmers should take advantage of educational programs offered by both VTAE and CES. Programs are directed at improving the efficiency and profitability of milk production.

Improved coordination of CES and VTAE agricultural education programs remains a high priority and is essential to meet effectively the needs of the state's dairy farmers. Funding has and will continue to keep the number of agricultural professionals and technical support staff at substantially reduced levels from that of the early 1980's. Yet the need of dairy farmers for information that will enable them to be competitive with dairy farmers in other regions of the U.S. has increased.

Recommendations Directed at Future Research Needs:

Recommendation No. 47:

Support efforts of the Wisconsin Agricultural Experiment Station and the UW Center for Dairy Research to meet and increase demand for high quality dairy products, new food products, products which are nutritionally acceptable and safe, and non-food uses of new dairy products, and to improve marketing and distribution. (PA, R)

The development and expansion of Quality Milk Councils throughout Wisconsin have afforded producers and agribusiness professionals to promote the applications of research-based production management strategies designed to improve milk quality and dairy farm profitability. The Center for Dairy Research (CDR) has established research efforts targeting the development and evaluation of both food and non-food uses for milk components. CDR personnel have developed and a patent and copyright have been awarded for Wisconsin Style Havarti cheese. This variety and other specialty cheeses are a major potential outlet for Wisconsin milk since it is difficult for Wisconsin farmers and cheese manufacturers to compete on a price basis in the manufacturing of commodity products.

Other CDR activities include the following: 1) milkfat modifications and utilization. This program encompasses the control of milk composition through genetics, fractionation of milkfat, modification of milkfat by enzymatic treatments, nutritional evaluation of milkfat and demand

analysis for dairy products to project future utilizations of milkfat. This multi-disciplinary approach was taken since it was concluded that a single emphasis on production, processing or marketing would not adequately solve the milkfat surplus problem; 2) Whey utilization. Polysaccharides have been produced by fermentation of lactose in whey using micro-organisms isolated by UW-Chemical Engineers. The polysaccharides exhibit interesting properties that could make them useful as thickening agents in foods and in non-food uses such as coatings agents for paper products and binders for building materials and ceramics and for waste-water treatment. Minor whey proteins are being selectively isolated. The isolated proteins have nutritional or antimicrobial activities for use in foods and feeds; 3) Cheese technology. Research is continuing on development of specialty cheeses with emphasis on lowfat and low-sodium cheeses. Enhancement and control of cheese flavor have been partially accomplished by use of selected bacteria cultures. Research has recently been initiated to regulate the physical properties of cheeses to enhance their performance as food ingredients; 4) Process and Product Development. Nutritionally enhanced dairy foods with added calcium and fiber are being evaluated nutritionally and technologically. Basic research on freeze concentration of fluid milk is defining conditions to obtain large, uniformly-sized crystals. This will increase efficiency of operating freeze-concentrators which would have application at the farm or processing plant. The economic-engineering computer model is an extension of a previous software package to standardize milk for cheesemaking; 5) Dairy food safety. Substantial research has evaluated the survival of potential pathogens in dairy foods and food ingredients. Factors that affect the potential for contamination of food and the extent of survival or growth of pathogens have been tested; 6) Calcium lactate haze. Recommendations have resulted from a CDR research project which can prevent a calcium lactate haze from developing on cheese surfaces during retail distribution.

This haze is thought to be mold growth by the consumer who then rejects the cheese. The recommendations on preventing the defect can save the Wisconsin cheese industry approximately 6 million dollars annually.

In 1989, the School of Veterinary Medicine established a Food Animal Production Medicine Program to deliver cost-effective preventative medicine and herd health program to producers. This program will reduce disease losses and help to assure safety and wholesomeness of milk at the farm. This program integrates instruction (undergraduate emphasis in herd health, graduate specialty training), research (at the herd/population level) and outreach. Outreach is aimed primarily at private veterinary practitioners as the only feasible mechanism to (1) achieve the multiplier effect required to reach a significant number of producers, and (2) provide on-farm continuity for implementation of programs.

Growth of this program in the near future will be limited by available funds.

The dairy marketing and policy programs have been strengthened with the addition of Dr. Bill Dobson into the Dairy Marketing and Policy Distinguished Professorship at UW-Madison. Three state extension specialists, Jesse, Cropp and Dobson, have responsibilities in dairy marketing and policy. A cooperative and marketing position has also been added at UW-River Falls.

Funding for dairy research at the CDR has increased about 9-fold from 1985 to 1989, \$220,316 to \$1,960,969. This illustrates the heavy commitment to dairy research by the marketing boards since only 9 percent of the operating budget came from the State of Wisconsin in 1989.

The development of cheese technology and transfer of that technology to industry is critical to the economy of Wisconsin. If this is to be accomplished by the CDR, further research and development in expanding the range of specialty cheeses will require two additional cheese technologists. Continued transfer of technology will be limited by personnel needs in Extension and personnel in CDR to transfer information and technology. An analytical chemist is needed in CDR to support future activities of the cheese technology, milkfat utilization and whey utilization programs. It is essential that a biophysical chemist be hired at the faculty level to fill a gap in milkfat and whey protein utilization areas. Support for purchases and maintenance of major pieces of equipment and for remodeling of facilities is also necessary.

Recommendation No. 48:

Promote research into systems that minimize dairy farm production costs by integrating the best management practices for maintaining soil structure and fertility, crop selection and management, and herd management. Such systems must also satisfy consumer demands maximize profitability and ensure conservation of natural resources and environmental quality. Research should encompass related problems affecting profitability on Wisconsin dairy farms, particularly the current problem of stray voltage. (PA, R)

Cost minimizing strategies may or may not be the appropriate objective, however, the systems approach to improving dairy profitability has and will continue to be the major underlying objective for the Center for Dairy Profitability. The establishment of the Center for Integrated Agricultural Systems has provided a much needed focal point for multi-disciplinary systems-oriented research and extension efforts. The 1989-91 budget for the Center provided \$1,054,000 for integrated systems research, curriculum development and extension programming. The Center for Dairy Profitability funded a .75 FTE in Dairy Systems Engineering/Farm Electrification which includes initiatives relative to stray or transient voltage and related farm electrification issues. This new faculty position was funded in part by the Wisconsin Electric Research Council.

The WDATCP has administered a sustainable agriculture research-demonstration program. Source of funds has been refunds to states for oil over charges by EXON, Inc. The CALS has also appropriated \$50,000 annually for research in this area.

The Agriculture Technology and Family Farm Institute (ATFFI) was established during the Spring 1990 legislative session. ATFFI will focus on and study the impact of agricultural technologies

on the profitability of family farm agriculture, the environment, and social conditions in rural Wisconsin. ATFFI is housed within the Center For Integrated Agricultural Systems.

Producing milk competitively, is environmentally sound, and conserves the state's natural resources remains a high priority research area. Additional research depends upon maintaining and enhancing funding.

Recommendation Nos. 49 and 50:

Integrate the basic and applied research carried out at the Wisconsin Agricultural Experiment Station, the U.S. Dairy Forage Research Center, UW Center for Dairy Research, UW-Extension Center for Dairy Profitability and the UW Consortium (Madison, Platteville, River Falls and Stevens Point) into programs that increase profitability for the Wisconsin Dairy Industry. (PA, R)

Develop integrated information delivery systems in order to effectively transfer information from basic researchers to basic knowledge users, from basic knowledge users to knowledge-transfer specialists (e.g. extension) and from transfer specialists to users (producers). Knowledge must be available through an expert delivery system which is linked to a research base. (PA, R)

Extension has continued to deliver vital research findings focused on improving dairy profitability to appropriate clientele, using a wide variety of educational/communications methodologies, including the recent increased use of video and satellite delivery systems. A joint Wisconsin and Minnesota Dairy Extension Program Series is already underway with the first program to be delivered in February, 1991 focusing on strategies for improving dairy profitability.

Extension has launched an agent specialization effort throughout most regions of the state, which is designed to provide the "knowledge-transfer" specialists with ability to develop more specialized expertise in certain high priority areas. This will allow county faculty to stay more current in their area of specialization.

A close working relationship exists between UW-Madison dairy researchers and researchers at the U.S. Dairy Forage Research Center. Funding for the UW System Consortium for Extension and Research in Agriculture and Natural Resources for applied research increased to \$284,000 per year in 1989-90. Several completed and on-going projects have direct implications for improving dairy industry profitability. Dairy profitability remains a priority in funding future research projects.

The CDR-Worldwide Information and Technology Exchange Program is ideally suited in leading dairy information integration and dissemination efforts. It has continuing interaction with dairy-oriented researchers throughout the UW System. It interacts with the Development of

Agricultural Journalism UW-Madison in preparing reports, newsletters and other appropriate information dissemination efforts. It continues to plan, publicize and conduct seminars and conferences for dairy industry leaders.

Long-term and effective information programming requires a program manager in CDR; two program assistants (one in CDR and the other in the Department of Agricultural Journalism; and a part-time clerical assistant. Funding is also essential for additional equipment, including computer hardware for literature searches and desk-top publishing.

Recommendations Directed at Animal Health Issues:

Recommendation Nos. 51 and 52:

The University should disseminate the latest information about disease prevention and control in a form useful to producers and practicing veterinarians. It is clear that current staffing is not adequate. One faculty position in dairy herd health extension/outreach should be added in the UW-Madison Department of Veterinary Science. This would clearly require cooperation between the Wisconsin Agricultural Experiment Station, the College of Agricultural and Life Sciences Department of Veterinary Science and the UW-Madison School of Veterinary Medicine. (PA, R)

The legislature should promote animal health and disease research (as embodied in SB 920 of the 1985-86 Legislative Session) drawing together producers, field veterinarians, the university research community, other researchers, and the Wisconsin Department of Agriculture, Trade and Consumer Protection, to establish research priorities and ensure that funds are directed appropriately. An annual budget of at least \$500,000 is recommended, given the magnitude of the losses and the complexity of the problems. (PA, R)

Beginning in 1989 an increased level of activity has occurred in dissemination of information by the University of Wisconsin, Madison to practicing veterinarians. Particular emphasis has been placed on producing quality milk. A .30 FTE and .40 FTE extension appointments at UW-Platteville and UW-River Falls, respectively, with some responsibility in herd health were added in 1990.

The State Legislature passed SB 464 to promote animal health and disease research, but it was signed into law without appropriation of funds. The 1989-91 Budget request was for \$500,000. The Animal Health and Disease Research Board and Council have been appointed, and met for the first time during the 1989-90 fiscal year. Subsequently, the State Legislature appropriated \$200,000 for the Board and Council to administer, specifically for research on Lyme disease in cattle. Project proposals have been submitted and funded. Research is now in progress.

The Board, Council and the University Research Committee, with the support of producers, need to press for the original \$500,000 annual funding for research on high priority diseases in all food species.

Better animal health can increase profits in the Wisconsin dairy industry in several ways. Cattle diseases erode already narrow profit margins. Improved animal health can also help open U.S. Export markets. Exported animals and animal health products must be as disease-free and competitively priced as any in the world. Wisconsin must also protect its cattle population from foreign or exotic diseases. Improving animal health will continue to require a highly effective network for disseminating information. When existing information is inadequate or new techniques are needed, they must be provided through basic or applied research.

Recommendation No. 53:

Professional staffing of the Wisconsin Animal Health Laboratory (WAHL) should reflect the level of training and expertise required in a modern diagnostic laboratory. The professional staff should be reorganized and positions redefined and redescribed to reflect the needs of a modern diagnostic service. The WAHL budget must be adequate to meet changing needs, modernize diagnostic testing, and to meet normal inflationary costs. To implement their modernization plans, the WAHL must have streamlined access to revenues generated by user fees, without having to justify individual purchases to the Department of Administration. The WAHL should be computerized as part of its modernization plan.

The Wisconsin Animal Health Laboratories have recently undergone an external review. The same issues raised in the recommendations of the Dairy Task Force were among those addressed by the external review. The recommendations of the external review were forwarded to the Secretary of WDATCP. It is now a WDATCP matter. (PA, R)

Recommendation No. 54:

A faculty position in dairy herd health/economics/epidemiology should be added to the UW-Madison School of Veterinary Medicine. A joint appointment with the WATCP Office of the State Veterinarian should be seriously considered. (PA, R)

The UW-Madison School of Veterinary Medicine established a Food Animal Production Medicine Station in 1989. Included in this section are specialists in herd health, health and disease economics and epidemiology. Although none of the three dairy-oriented faculty in this section have joint appointments with the WDATCP, communication between them has been established.

Recommendations Directed at Wisconsin Dairy Farm Structure, Facilities, and Equipment:Recommendation No. 55:

Professional assistance should be provided to ease the exit of farmers whose operations which are uneconomical and unprofitable and who don't have the potential to significantly improve their profitability. (A, R)

County agents and state extension specialists and VTAE are contacted for advice and counsel in numerous individual situations and are involved with other sister agencies in farm consultations. The majority of these farm operations either exited or improved their operations and financial positions during the late 1980's. Nevertheless, there always will be some dairy farmers, so called marginal farmers who need assistance.

Recommendation No. 56:

Multiperson operations, which are better able to apply specialized management and greater management efficiency, should be encouraged. All Wisconsin dairy operations, regardless of size, should make greater use of management assistance from UW-Extension - and from VTAE, industry representatives and private consultants where appropriate -- to maintain and improve profitability, learn about new technology and adopt technology that it economically feasible. (PA, R)

The number of multi-person/multifamily dairy farm business units continues to increase. Extension education programs have provided focus on some of the critical issues facing these increasingly specialized dairy operations, including: labor and personnel management, time management, evaluating the economic feasibility of expansion alternatives, etc.

The average age of Wisconsin dairy facilities is near 45 years old. Many of these facilities are in need of replacement to be efficient and competitive milk producing operations for the future. Wisconsin lags the neighboring state of Michigan and Northeastern states in building more modern and efficient multi-family dairy facilities. There is, however, increased interest in Wisconsin for replacing obsolete dairy facilities with larger dairy units that will accommodate two or more family units. The potential benefits to improved milk production efficiency and profitability are more specialized management, opportunities for more leisure time for family members, and lower capital investment per milk cow unit.

Recommendation No. 57:

Single-family farms should consider the following strategies for reducing machinery and equipment costs (in turn reducing cost per hundredweight), and to free up labor and management: hire custom operators to do field operations where feasible; buy reliable used machinery and equipment; share expensive or infrequently used equipment with neighboring farms; raise their own forages and buy all grain (or even rent or purchase just the dairy facilities and buy both forages and grain).
(NP, R)

A number of decision-aides have been developed to: evaluate machinery costs and returns, compare crop- mix alternatives and evaluate feedstuff alternatives from a nutrition and economics standpoint. However, almost no progress has been made in this area. Dairy farmers wish to remain independent and have their own machinery and equipment and to produce all or most all of their forages and grain. But it will become increasingly difficult for relatively small single-family dairy farms to produce milk competitively and profitably. The capital cost per cow is too high for each individual dairy farmer to own all crop planting and harvesting machinery. However, relatively small dairy operations can remain profitable through custom hire of some or all cropping operations and/or purchasing all or a majority of feed.

Recommendation No. 58:

Farm families should acquire the skills they need to do short- and long-term planning, readily adopt new, cost-justified technology, and to improve their overall efficiency and profitability. To this end the University of Wisconsin should expand programs which offer economic outlook and information on effective use of records systems, business and enterprise analysts, profitable production and management practices and new technology. (PA, R)

A computerized record keeping system (AIMS) has been developed and pilot-tested in several counties throughout the state with an emphasis on improving farm financial record keeping including enterprise analysis. A computerized dairy farm management analysis program (Wisconsin Dairy Farm Management Analysis Program) has been implemented in several counties to provide a comprehensive dairy enterprise analysis and to serve as a statewide database of dairy farm financial performance in the future. A number of computerized decision-aides have been developed to assist farmers in evaluating the potential impact of new dairy technologies and management practices on the performance of their businesses.

A monthly dairy outlook report is provided by state extension specialists. Annually, the Department of Agricultural Economics, UW-Madison publishes, "Status of Wisconsin Farming."

Through state legislative action an Agricultural Technology and Family Farm Institute was recently created on the UW-Madison campus. The focus of the institute will be on technology transfer to Wisconsin family farms and impact of new technology on these farms.

Recommendation No. 59:

Since the success of dairy operations, and particularly multiperson dairy operations, depends heavily on human resource management, UW-Extension and VTAE should expand their educational programs on stress management, decision making, goal setting, and time and personnel management. (PA, R)

UW-Extension has identified a team of specialists and agents with both interest and expertise in labor and personnel management. Several recent Extension programs and in-service training opportunities for agents have focused on improving human resource management skills on the dairy farm. Nevertheless, increased educational efforts are needed in these areas. As more multi-family dairy operations come about human resource, stress management and time management skills become more crucial.

Recommendation No. 60:

Dairy farmers should get better before getting bigger. Before making any major or minor capital investments in feed storage or manure handling facilities or equipment, farmers should thoroughly analyze their current production efficiency. The amount farmers can afford to invest in buildings and equipment varies widely according to pounds of milk sold per cow per year. (PA, R)

Most extension education programs have incorporated this as an underlying assumption with a focus on improving dairy profitability. This remains a very valid recommendation. Responding to lower milk prices or tight profit margins by expanding the size of the dairy herd is not the most profitable decision if existing milk production per cow is relatively low.

Recommendation Nos. 61 and 62:

The best type of dairy, feed and manure-handling facilities and equipment differs widely from one dairy enterprise to the next. Hence, no general recommendations can be made. Each dairy enterprise must carefully evaluate its management ability, labor supply, debt, capital and land resources to determine facility and equipment requirements. The feasibility of different types of facilities and equipment also

depends on the adequacy of existing facilities, and current and contemplated herd size. Farm families should take advantage of public information resources in making financial decisions. In particular, UW-Extension others have useful decision aids. (A, R)

Every effort must be made to minimize capital investment costs in facilities and equipment without sacrificing reasonable production efficiency. (A, R)

UW-Extension has developed a number of decision- aides designed to provide dairy farm families with the opportunity to evaluate the impact of making changes in facilities, size, etc. on the profitability of the business. A growing number of professional consultants are using these tools as they work with farm families.

Educational programs have been expanded to increase the dairy farmers and agribusiness professionals serving farmers in farm business analysis, enterprise analysis, farm business arrangements, use of computer technology, farm records, time management and investment strategies. The Center for Dairy Profitability funded a .75 FTE in Dairy Systems Engineering/Farm Electrification which includes milking systems design and automation and related dairy systems engineering and farm electrification issues. This new faculty position was funded in part by the Wisconsin Electric Research Council. A new Farm Financial Management position (.8 FTE Extension, UW-River Falls) added partial funding through the Center for Dairy Profitability. This person will focus on dairy farm business and financial management issues.

These objectives have been accomplished as far as additional extension faculty with responsibilities in this area and the development of computer technology and educational programs to assist dairy farmers with investment decisions with facilities and equipment. Nevertheless, most Wisconsin dairy operations will make some type of dairy feed, manure handling and milking equipment decisions within the next decade. Appropriate decision making assistance and decision making tools will remain highly relevant.

Recommendation No. 63:

Farm families wishing to rent or purchase a dairy farm in Wisconsin should consider those farms where land is best-suited to forages and where ancillary services are readily available. (A, R)

This recommendation is simply solid advice. It remains a valid recommendation. Nevertheless, there are those who make land rental or purchase decisions without taking into consideration forage production capability, or the availability of ancillary services.

Consulting the agricultural agent could avoid inappropriate land rental or purchase decisions for profitable dairy operations.

Recommendations Directed at Exit, Entry, Financing, Alternative Business Arrangements:

Recommendation No. 64:

Research, teaching and extension programs should be aimed at innovative alternative agricultural financing and business arrangements. Concerns about how farmers can enter, improve, expand and exit Wisconsin's dairy industry should all be included. (PA, R)

Special funding, received in 1990, for work in the area of farm financial management, is being used to conduct analyses which will increase our understanding of the financial management practices of Wisconsin farmers. This research is being performed using a data base which contains financial information on nearly 2,000 Wisconsin farms. The results gained from this research project will be useful in teaching farmers and others who work with farmers how various financial management practices can affect the profitability and financial stability of farm businesses.

The Center for Dairy Farm Profitability implemented a special financial management program for dairy farmers in the spring of 1990. Approximately 100 dairy farmers are supplying their farm financial records to county extension agents who are forwarding these records to the Center for processing. These farm level records will be summarized so that participating farmers can compare their financial performance to the performance of other dairy farms in the group.

Work in the area of farm financial management will likely increase given the recent hire of Mark Stephenson, UW-River Fall. Stephenson, who has an 80 percent extension appointment, was hired with some funds from the Center for Dairy Farm Profitability.

Work in the area of farm business arrangements continues to be low. John Ambrosius, UW-Platteville, has shifted a portion of his extension program into this area but little research or instruction is being done in farm business arrangements. A faculty position will need to be added to the Department of Agricultural Economics if work is to be done in this area.

Recommendation No. 65:

Further research should address the psychological and sociological problems that arise as dairy farmers enter retirement. (PA, R)

No new efforts have been initiated to conduct research which addresses the psychological and sociological problems that arise as dairy farmers enter retirement. However, these problems are being addressed in some on-going research programs that are being performed by William Saupe of the Department of Agricultural Economics, UW-Madison. Saupe has monitored the financial performance of a group of farms over time in part to learn more about financial situations of retiring farmers. With the exception of this work little else is being done to learn about the problems that are confronting retiring farmers.

Recommendation No. 66:

Wisconsin dairy farmers should receive adequate information on availability, adequacy and cost/value benefit from available sources to help them make a sound decision on reducing risk through the development of an insurance program. (NA, R)

No new resources have been committed to developing a program which provide dairy farmers adequate information on the availability, adequacy, cost/value benefits, and risk reducing effects of an insurance program. Implementing this program would require the hiring of a half-time academic staff specialist with training in accounting and actuarial science who would make comparisons of alternative policies for controlling specific risks. CALS might be able to provide support for this program but it cannot take the lead. The Wisconsin Agri-Business Council, the Wisconsin Federation of Cooperatives, or some similar trade association would be better suited to take the lead in implementing this insurance program.

CALS faculty have been involved in an insurance related issue. Bruce Jones of the Department of Agricultural Economics served as an ex officio member of the ad hoc Dairy Plant Security Task Force which made recommendations as to how the state could reduce the chances of dairy farmers losing money when dairy plants go out of business. This task force, with the help of Jones and DATCP personnel, evaluated the potential costs and benefits of an insurance program which could be used to insure against this source of risk for Wisconsin dairy farmers.

Recommendations Directed at Farm Management Practices and Profitability:

Recommendation No. 67:

Wisconsin dairy farmers must apply economically sound and efficient management practices and be leaders in adopting profitable new technology. The following management goals for 1995 should be adopted. To achieve them, farmers should increase their use of UW-Extension, VTAE and private consultants. (PA, R)

The various goals are listed below. A "+" indicates progress towards achieving the goal and a "-" indicates no progress. For some goals a "?" appears indicating uncertainty as to progress.

	<u>Needed</u>	
<u>Goals for Improving Forages and Feeding</u>	<u>by 1995</u>	<u>Progress</u>
1. Increase the percentage of acres planted to recommended varieties of alfalfa.	60%	?
2. Increase alfalfa yield. tons/acre	6.5	+
3. Triple the percent of forage harvested by first flower.	45%	+
4. Increase the percentage of alfalfa fed as low-moisture haylage.	75%	++
5. Triple the number of forage samples tested.	450,000 annually	+
6. Increase the percentage of farmers using well-balanced rations.	75%	++
7. Triple the number of farmers who segregate herds by level of production and feed protein and grain accordingly.	45%	++
 <u>Goals for Improving Dairy Management</u>		
1. Enroll more herds on DHI record programs.	60%	+
2. Enroll one million cows on DHI records.	1,000,000 cows	+
3. Maintain adequate cows on Official DHI records for genetic improvement and educational programs.	400,000 cows	+

4.	Increase average yield of milk for DHI cows.	19,000 lbs.	+
5.	Increase average yield of milk of all cows by 200 to 300 pounds per year.	16,000 lbs.	-
6.	Reduce the average calving interval.	13 mo.	-
7.	Decrease the average age of heifers at first calving.	26 mo.	-

Goals for Improving Dairy Breeding Practices

1.	Breed more cows to AI sires.	75%	-
2.	Increase average PD Milk of service sires.	750 lbs.	-
3.	Increase percent of heifers bred to AI sires.	50%	-
4.	Increase the average milk yield of first-lactation cows in DHI herds.	16,000 lbs.	-

Goals for Improving Dairy Cattle Health

1.	Increase the percent of DHI herds using the SCC Option.	90%	++
2.	Reduce the Somatic Cell Count (SCC) of milk sold.	400,000	+
3.	Reduce death losses of calves (birth to 6 wks).	10%	+
4.	Double percentage of dairy calves vaccinated for Brucellosis.	30%	?
5.	Increase the number of DHI herds using the Herd Management Option to improve efficiency of reproduction.	75%	-

Educational programs have been expanded in several critical areas with particular attention to the integrated systems management approach which recognizes that excellence in all areas of an enterprise is required to achieve and maximize profitability. Additional campus faculty positions with Extension responsibilities were added in the following areas:

<u>Emphasis Area</u>	<u>FTE</u>	<u>Campus(es)</u>
Dairy herd/animal health	1.35	MSN/PVL/RVF
Dairy systems engineering	.75	MSN
Farm financial/management	.80	RVF
Dairy beef/veal prod./mgt.	.30	PVL
Forage/field crops management	.33	RVF
Dairy cattle breeding/genetics	.75	MSN
<u>Remaining Needs:</u>		
Ruminant reproductive phys.	.75	MSN
Forage/field crops pathology	.33	MSN

Recommendations Directed at Adjustments in the Dairy Farm Input and Service Industry:

Recommendation No. 68:

Cooperatives and other firms that provide farm services, and marketing should consider additional mergers, consolidations, joint ventures, and other innovative business arrangements at the national, regional, state and local levels, both to ensure their own economic viability and to be able to offer farmers competitive prices. (PA, R)

Progress report included with similar recommendations No. 12 for marketing cooperatives.

Recommendation No. 69:

UW-Extension should expand educational programs that help Wisconsin input suppliers with management, long range planning, mergers, joint ventures and other innovations that will enable them to supply inputs and services to dairy farmers more efficiently. (PA, R)

The University Center For Cooperatives continues to offer and is expanding its Cooperative Leadership and Management Workshops. Financial and long range planning, management, and organizational changes including mergers, consolidations and joint ventures are topics covered in these workshops. Through the Extension Center for Dairy Profitability a new .30 FTE cooperative extension appointment in agribusiness management was created. Dr. Robert Acton at University of Wisconsin-Platteville is assigned to this position. Position responsibilities include providing educational programs for and working with investor oriented firms and cooperatives on planning, management, organizational and related management decisions.

The competitiveness of Wisconsin dairy farmers is dependent on prices for inputs and services that are competitive with other major dairy states. Efficient management and proper organizational structure of Wisconsin suppliers of inputs and services is crucial to this competitiveness.

This recommendation remains appropriate for the decade ahead. Input and service suppliers will face new economic and environmental challenges in the decade ahead that will demand sound management and structural changes for survival.

Recommendations Directed at Production and Marketing of Veal, Dairy Beef and Dairy Replacements:

Recommendation No. 70:

The Wisconsin dairy industry should develop accelerated programs to reduce calf mortality, to improve quality, quantity, uniformity and marketing conditions of calves utilized by veal and dairy beef industries. To achieve this goal, the following should be considered.

- A statewide educational program supported by research should be initiated to reduce the death loss of baby calves estimated to exceed 15 percent or 300,000 calves.
- Eliminate the discrimination against fed Holstein beef and veal because of color quality, texture, tenderness and conformation, perceived or actual that results in price differential to producers and packers.
- Increased emphasis must be provided to improve the managerial techniques for starting, growing and backgrounding calves.
- Statewide research based educational programs should develop management systems and demonstrations to increase the availability of uniform started calves.
- Research should be conducted on uniform nutritional ingredient guidelines, labeling, standards and certification required to produce high-quality veal.

- **Emphasis should be given to the development of safe, effective and approved medication for calves.**
- **Efforts should be expanded to provide additional financial support, incentives, market coordination and risk reduction to improve the profitability of the veal and dairy steer feeding industry in the state.**
- **That the State of Wisconsin continue to encourage the maintenance and expansion of an effective competitive marketing and processing system for dairy calves, replacements, special veal, dairy steers, and cull cows and access to national and international markets for dairy herd replacements.**
- **The Wisconsin dairy industry should develop an accelerated program to reduce dairy calf mortality and improve the quality, uniformity and market condition of Wisconsin calves. (PA, R)**

Educational programs focusing on the production, management and marketing of dairy animals for meat purposes has been expanded. The addition of campus faculty commitment in this area (.30 FTE - Dr. Nusbaum at UW-Platteville) has helped meet this important need. Animal care and welfare issues are also receiving increased program focus.

The Food Animal Production Medicine Program in the School of Veterinary Medicine has just begun to implement its program, with emphasis on the lactating dairy cow. Calfhood mortality has not been specifically addressed yet.

Limitation of personnel and operating budget impede research and outreach activities for veal and dairy beef calf health.

Dairy beef and veal is a vital segment of Wisconsin's dairy industry. Yet its full economic potential to the state is far from being reached. Further research and educational programs are required.

Recommendations Directed at Farm Taxes -- Property, Income and Death:

Recommendations No. 71, 72 and 73:

Wisconsin property tax puts Wisconsin dairy farmers at a competitive disadvantage compared to other dairy states. Therefore, the state legislature should reduce this tax burden on Wisconsin farmers. Since the largest share of the property tax goes to finance public schools, and since Wisconsin relies more heavily on the property tax to fund public elementary and secondary education than most other states,

Wisconsin should find other means of funding public education. The Wisconsin Dairy Task Force supports in principle the tax reform approach of the Wisconsin Coalition For Property Tax Reform. (PA, R)

Wisconsin should simplify its income tax by more closely following the federal regulations or taking a percent of the federal tax. In addition, Wisconsin should use the income tax as a revenue-raising device and not to attempt to direct social and economic change. (NA, R)

To gain a competitive edge and to retain capital and human resources, Wisconsin should adopt a "pickup tax" or "gap tax" designed to capture the state death tax credit against the federal estate tax. (NA, R)

Taxes remain a major issue with Wisconsin dairy farmers, particularly property taxes at the state level and capital gains taxes at the federal level. Little progress has been made since these recommendations were made in 1987. The state legislature and Governor's office have not been able to agree upon a rural property tax package. Efforts will continue in up coming legislative sessions.

Recommendations Directed at Establishing a Consensus For Wisconsin's Dairy Industry:

Recommendation No. 74:

Wisconsin's educational, research, and extension programs should place a high priority on marketing and policy issues. Additional marketing and policy should be incorporated into the curriculum of high school vocational agriculture, VTAE, and four-year collegiate educational programs. (PA, R)

Major progress toward achieving this objective as it applies to high school and vocational school training was made with the development of a dairy marketing curriculum package at UW-Platteville. This effort was funded through a Wisconsin Milk Marketing Board grant administered through the National FFA Foundation.

Dairy marketing is a separate course in UW-Madison's Farm and Industry Short Course program. Dairy marketing and agriculture policy courses are part of the undergraduate curriculum at UW-Platteville and UW-River Falls. CALS does not currently offer a course in dairy marketing but does in agricultural policy.

Dairy marketing and policy research, extension, and teaching resources in CALS were substantially augmented with the addition of Bill Dobson to the Ag. Econ. faculty as a UW Distinguished Professor. Bob Cropp, Dobson, and Ed Jesse comprise the core dairy marketing team. They are expected to expand milk pricing research and educational efforts well-beyond current levels.

At the secondary level, additional classroom ready activities and efforts still need to be developed, and the marketing effort needs to be accepted by all of our teachers. Retraining is a major issue. Instructors lack confidence and knowledge about the subject matter. The comfort level is low, and little real support is has been available for retraining.

The number of students enrolled in agriculture education classrooms around the state have risen the past two years. However, the state continues to lose programs, mostly because of lack of funds, and commitment on the part of districts and teachers. Lack of significant funding is the greatest obstacle to making change. Until people view agriculture and education as a priority, it is difficult to make significant gains.

Recommendation No. 75:

The Wisconsin Secretary of Agriculture, Trade and Consumer Protection should establish a dairy council composed of producers, processors and marketers, suppliers of inputs and services, representation from University of Wisconsin's colleges of agriculture and other dairy-related interests. The purpose of the council would be to improve the communication and create a useful dialogue between those who have a major interest in and directly depend upon the economic well-being of Wisconsin's dairy industry. The council should establish a common agenda of important dairy issues at the state and national level with the objective of establishing a more harmonious voice for Wisconsin's dairy industry. (A, R)

Former Wisconsin Secretary of Agriculture, Trade and Consumer Protection, Howard Richards, appointed the Wisconsin Dairy Coordinating Committee in 1987 to implement this recommendation. The Committee has met several times to discuss major dairy issues confronting the state's dairy industry. General consensus were developed on positions regarding federal dairy policy and milk pricing issues including alternatives to the Minnesota-Wisconsin Price Series, calculative government purchases of surplus dairy products on a total solids milk equivalent basis, and modifications of federal milk marketing orders.

The need to develop a common agenda of important dairy issues at the state and national level with the objective of establishing a more harmonious voice for Wisconsin's dairy industry, remains crucial. This harmonious voice needs to expand beyond Wisconsin to the entire Upper Midwest and ideally nationally. There remains several important dairy pricing and policy issues that are not yet settled.

APPENDIX A: Wisconsin Dairy Task Force 1995

PHIL PETERSON, chair
DON STORHOFF, vice-chair
ROBERT CROPP, executive director

DAIRY FARMERS: Larry Bjork, Kenneth Clement, Gary Frank, Dowaine Giraud, Donald Haldeman, Stewart Huber, Charles Knigge, Len Landwehr, Ken Leick, Dennis Noble, Leonard Peck, Philip Peterson, John Randall, Eugene Runde, Audrey Sickinger, Darrell Voie, Jim Zanton

MILK PROCESSING AND MARKETING: Robert Bush, Daniel Carter, Laurie Kull, Neal Rosinsky, Don Storhoff, Dallas Wuettrich, Werner Zimmerman

ALLIED ORGANIZATIONS: Norval Dvorak, John Jenks, Tom Lyon, Mike Lomperski, Brian Oetjen, Robert Walton, Arnold Weisenback

EX-OFFICIO: Robert Bartlett (Governors' representative, 8/1/85-12/31/86), Pat Osborne (Governor's representative, 1/1/87-6/30/87), Senator James Harsdorf, Senator Rodney Moen, Assemblyman Larry Swoboda, Assemblyman Joseph Tregoning, Assemblyman Barbara Gronemus.

STEERING COMMITTEE: Phil Peterson, Don Storhoff, Robert Cropp, Richard Vilstrup, John Cottingham, Al Beaver, Howard Richards, Jim Crowley, Don Peterson

TECHNICAL STEERING COMMITTEE: Co-chairs: Richard Vilstrup, (UW-Wisconsin); John Cottingham, (UW-Platteville); Joan Arnoldi, Norm Kirschbaum, Donald Soberg, Donald Konsoer, Carol Spencer, Bob Thayer, Will Hughes, Howard Richards (Wisconsin Department of Agriculture, Trade and Consumer Protection); Albert Beaver (UW-System); Al Bringe, James Crowley, Dave Dickson, Brian Holmes, Terry Howard, Ed Jesse, Neal Jorgenson, Rick Klemme, Jack Kloppenburg, Bob Luening, Daryl Lund, Clarence Olson, Norm Olson, Don Peterson, Dwayne Rohweder, Tony Sendelbach, Jane Voichick, Thomas Yuill (UW-Madison). Wayne Gillis (UW-Platteville); Gary Rhode (UW-River Falls); Cletus Fontaine (Vocational, Technical and Adult Education).

