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Guest Column

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Food Technology



A RENEWED NEED FOR UTILIZATION RESEARCH

Research on utilization of agricultural commodities both in food and non-food application has been conducted for many years in universities, industry and federal laboratories. A National Conference on Wheat Utilization Research was held regularly up until 1977 with the first one taking place in 1962 in Lincoln, Nebraska. It is interesting to note in the published reports of some of the early conferences topics presented that are being discussed today. I would like to quote a statement from the report published on the first Wheat Utilization Conference:

"This broad concept of utilization research and development in agriculture is new and virile and promises continuous reduction of the major problems in this largest of all American agricultural industries."

From 1962 to 1977 this National Conference on Wheat Utilization Research was held on 10 different occasions.

In the last few years considerable renewed interest has been expressed and resulted in research initiatives in the area of agricultural processing, utilization and value added products. Plans are underway for another Wheat Utilization Conference to be held in San Diego, Calif., in October of 1988. The first National Corn Utilization Conference was held in June 1987, and in February of this year a meeting entitled Soybean Utilization Alternatives was held in Minneapolis.

These are just a few examples of the past and present interest in this entire area. In 1986, the Experiment Station Committee on Policy (ESCOP) formed a committee to develop a research-needs statement on "Enhanced Technologies for Food and Non-food Uses of Raw Agricultural Products." In this report, the problems and issues which indicate the need for increased U.S. emphasis on research are discussed. Numerous examples including loss of U.S. technological leadership, loss of international competitiveness, surpluses and lack of demand for agricultural products are a few of the reasons cited for the current need to conduct research. In the report the nature of fundamental or basic research needs are discussed. Included among an impressive research listing is the need for investigations on the physical, chemical and biological properties and structures of agricultural commodities, foods and non-food products. Applied research includes the development of new food and non-food uses for agricultural commodities.

Despite the indicated need, a 1983 Office of Technology Assessment report shows an actual reduction of federal money for research in the post-harvest area over the last 10

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On the Cover: John Jansky and Randy Ness, chemists in cereal science and food technology, conduct research in microbrewing. In this issue, department chairman Bert D' Appolonia discusses research in processing and utilization of agricultural products. Photo by Harold Caldwell.

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Table 5. Return on Investment for Feasibility Studies Completed by the Department of Agricultural Economics, North Dakota State University, 1970-1987.

Item	Ratio
Investment in research to capital investment	478:1
Investment in research to additional business activity	133:1
Direct jobs to investment in research	1.09:\$1,000
Total jobs to investment in research	2.76:\$1,000

that include raw product supply; processing technology, if involved; market demand factors; plant size, cost, and profitability; distribution systems (transportation costs); and an assessment of overall competitive factors. An integrated study of technical and economic feasibility leads to an accurate analysis and assessment of overall economic feasibility of a given economic development project.

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years. There is a vital need for increased federal funding to support primarily fundamental research programs in a number of areas of post-harvest technology of agricultural products.

The structure of an expanded research program with \$130 million in new funds should take the following form according to the 1986 ESCOP report:

- Competitive research grants to individual researchers.
- Centers of excellence grants to interdisciplinary groups.
- Increase in basic Hatch funds.
- Graduate fellowships.
- Post-doctoral fellowships.
- Equipment grants.

A report issued in June 1987 by the New Farm and Forest Products Task Force to the Secretary of Agriculture emphasizes that diversification of agriculture and forestry must become a national priority. The report goes on to say that significant opportunities exist for the development of new farm and forest products to meet real market needs - particularly in industrial, non-food application areas.

At a more local level, at the initiative of the Governor's office and the Economic Development Commission in North Dakota, a committee has been given the charge to study the feasibility of establishing a Center for Alternative Agricultural Production and a Center for Agricultural Commodities Processing and Utilization at North Dakota State University.

I would like to comment briefly on centers of excellence. An article in the December 1987 issue of Food Technology reports that nationwide activity to establish centers for industry/university cooperative research is at an all time high. There are now more than 28 "centers" of food science in the United States. I believe this number reflects the importance

North Dakota State University has a wide array of resident areas of expertise. This expertise resides within 11 departments in the College of Agriculture and associated departments within other colleges, e.g., engineering and business. These departments maintain secondary information bases and associated analytical systems that make it possible to conduct a wide range of economic feasibility studies.

Economic feasibility study results presented earlier illustrate that this type of research is a viable public activity that can increase both agricultural and nonagricultural business activity and contribute to economic development in the state.

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of such centers and why North Dakota should become involved in a similar undertaking. The process for establishing each of the 28 centers was somewhat different and the goals for one are not exactly the same as for another. Nonetheless, nearly all these programs have some key common goals:

- Enhance utilization research.
- Transfer information to industry.
- Aid development of new businesses.
- Provide technical and marketing assistance.
- Become stronger in chosen areas of specialization.
- Attract food processing to the state.

If a Center for Agricultural Commodities Processing and Utilization were to be developed at North Dakota State University, the goals should be similar to those just enumerated. Most food-type centers have developed as a direct result of strong food science, dairy science or food related departments. In fact, the basic impetus for the Northern Crops Institute (NCI) came as a direct result of the need to expand the work that was being done by the faculty and staff of the Cereal Science and Food Technology Department. The growing need for the department to make presentations to trade team delegations, conduct applied quality research, and disseminate quality and technical information and travel overseas to provide technical and quality data to buyers all indicated a need for improved and expanded facilities. Creation of a Center for Agricultural Commodities Processing and Utilization needs as its backbone a strong department committed to research in cereals and foods.

I look forward to the future with excitement and optimism, but I also recognize that such a center is very dependent upon adequate funding to provide the necessary faculty, facilities and equipment to make it a success. An equally important prerequisite for such a center to be a success is for it to be interdisciplinary in nature.

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