M.C. State has been authorized to begin planning for a national center for aseptic processing and packaging studies, according to B.F. Bateman, Director of the North Carolina Agricultural Research Service. The proposed center would conduct research and provide graduate student training in aseptic processing and packaging. Foods processed by the new method are subjected to high temperature for short periods and then packaged aseptically (without contamination) in pre-sterilized containers.

The Food Science department at NCSU is the acknowledged academic leader in continuous aseptic processing. Funds will be sought from both public and private sources to support the new Center. The Dix property has been mentioned as a possible future site for the Center. Involved in this operation would be faculty members from three schools: Agriculture and Life Sciences, Engineering, and Physical and Mathematical Sciences.

Specific objectives of the Center will include the following:

1. Support fundamental research in aseptic processing on which to lay the groundwork for new process development;
2. Develop and/or apply new technology to enhance product quality;
3. Develop and/or apply new technology to improve efficiency of processing;
4. Equip graduates with the knowledge and experience for continuation of product/processing research within industry, government and academic organizations;
5. Exchange scientific information by supporting workshops, conferences, and sabbatical leaves. The primary goal is to communicate the information gained from basic research to the industry for development and marketing of new and existing products and processing techniques.

The announcement that planning of a Center had begun was made during the week-long workshop on aseptic processing and packaging that NCSU faculty members conducted for food industry representatives from across the nation. This is the second year that the workshop has been conducted. This year the program was in cooperation with the National Food Processors Institute.
An "Aseptically Processed & Packaged Foods in Flexible and Semi-rigid Containers School" was held at McKinney Center, Nov. 18-22. Over 50 industry, regulatory, and academic personnel participated in the conference. The first three days were devoted to programs leading to certification for BRT operators while the last two days related more to continuous flow sterilization. Those participating in the program included Austin Cavlin and R.G. Stevenson, N.P.P.A., J.D. Guardine and M. Johnson, F.D.A., J.K. Marcy, Sanpet, Inc., D. Kruminer, Alfa-Laval Inc., G. Reingold, Consultant, RSI Ltd., D.V. Wernimont, Cherry-Burrell.

Key to Photos - Top left - Aseptic shortcourse participants, Top right - Tour of aseptic facilities, Univ. Dairy, Center - Oyster roast social, Lower left - classroom, McKinney Center, Lower right - Presentation of certificates.
A "first" for Food Science Extension! On Nov. 25, Extension program leaders, district leaders, Director C.D. Black, and Assoc. Director R.C. Wells joined Food Science Extension to assess the effectiveness of present programs and to suggest future program opportunities. Food Science Extension conducted a retreat in Sept. at Atlantic Beach to consider ways to coordinate programs to more effectively and efficiently serve the N.C. Food Industry.

New Aseptic Equipment Available

International Paper Company, with research facilities located at the Research Triangle Park, has entered into a cooperative agreement with the Dept. "I.P." is locating an aseptic filler, capper, and shrink-wrap equipment in the University Dairy Plant. The "lock-style" packaging machine is manufactured in Italy, and modified in the U.S.A. to meet local regulatory requirements. The unique feature of this equipment is that it has been modified to run at the rate of 25-30 gallons/hr., which provides for more economical research runs in respect to product loss. This equipment will be available to industry for contract runs, as well as for dept. research activities.

New Prototype Brining Tank for Cucumbers

A new prototype brining tank for cucumbers has been developed in cooperation with the United States pickle industry. The tank is designed for fermentation and storage of cucumbers under anaerobic conditions. Necessary equipment for washing, loading and unloading the cucumbers and a new brining procedure have been developed for use with the tanks. The new tanking system is intended to result in new and improved fermented cucumbers, reduced salt usage, reduced wastes, and improved sanitation. A pilot plant has been built by the industry in support of the project and is located at Mt. Olive Pickle Company, Inc.

Seven companies throughout the United States (including Mt. Olive Pickle Company, Inc., and C.P. Gates & Sons, Inc., in North Carolina) participated in a joint venture to test the new tank and the new brining system in 1985. Results are being evaluated and, thus far, appear very encouraging. Many questions have been raised by the project, some of which have opened new fundamental research projects at the U. S. Food Fermentation Laboratory. The research is being led by H.P. Fleming (Food Science) and R.G. Humphries (Biological and Agricultural Engineering).

Faculty Activities

R.E. Carawan and J.E. Rushing received recent industry funding in the area of pollution prevention through the "N.C. Pollution Prevention Pays Program" which includes $5,000 from Macon Milk and Ice Cream Co., New Bern; $5,000 from Harris-Teeter, Inc. Charlotte and $5,000 from the N.C. Dairy Foundation, Inc. R.E. Carawan received a $4,200 grant from the N.C. Ag. Foundation, Inc. to incorporate a microcomputer in Food Science Extension activities.

M.A. Deschel gave an invitational paper to Pickle Packers International in Dallas. H.P. Fleming gave invitational papers at Nat. Kraft Packers Assoc. in Raleigh; to N.C. Pickle Producers Assoc. in Raleigh; to Pickle Packers International in Dallas. P.M. Hoogerding received $102,800 (three years) funding from the Dairy Research Foundation in Chicago on the "Role of Lipid Structural Components in Germination and Influence of Sporulation Conditions on Structure, Resistance and Germination". A.P. Hansen returned from a sabbatical at Cornell Univ. where he studied flavor binding of milk protein and protease and lipase activity in milk and dairy products; gave invitational papers at "International Symposium on Aseptic Processing and Packaging" in Sweden, and Denmark; two invitational presentations on aseptic processing at Cornell; and industry presentations to Bordens, Syracuse N.Y., and Beatrice Foods, Chicago.
H.A. Hassan gave invitational papers at the "International Meeting on Superoxide and Superoxide Dismutase" in Rome Italy; to Dept. of Micro. Ga. St. Univ., Atlanta; to Burroughs-Wellcome Res. Labs. at Res. Triangle Park. T.R. Klaasenhammer participated in the Latin America Postdoc Program, sponsored by the ASMT. Soc. for Micro. where he conducted two weeks of lecture and lab on "Advances of Molecular Biology of Lactic Acid Bacteria" in Argentina from Sept. 23 to Oct., 7; gave invitational seminar at Univ. of Alberta, Edmonton, Canada; received $184,000 USDA cooperative grant in Biotechnology on "Transfer, Expression and Cloning of Phage Resistant Genes in Lactic Streptococci;" received a $77,000 grant from Miles Labs, on "Localization and Cloning of Genetic Determinants Encoding Bacteriophage Resistance in Lactic Streptococci; Transfer, Expression and Characterization of Defense Mechanisms", T.C. Lear gave invitational papers on seafood ingredient technology and surimi in Alaska, Louisiana, Texas, Boston, and Washington. D.R. Lineback was presented a plaque in appreciation for service as president (1983-1984) and chairman of board of the Amer. Assoc. of Cereal Chemists in Orlando, FL; received a special "Award of Merit" in October by the Japanese Society of Starch Science in Osaka, Japan and gave an award address, "Current Concepts of Starch Structure and its Impact on Properties;" presented a seminar on starch characteristics and applications to Western Japanese Society of Cereal Science; participated as a member of four instructors and course organizer in a short course on starch for the AACC in Chicago. R.F. Reehorst gave an invitational presentation to the 13th International Congress of Nutrition in Brighton, England and a paper to the Pickle Packers International in Dallas. 

N.C. Miller, Jr., was elected a Fellow in IFT, received the Jefferson Cup Award from the U.S.I. IFT. D.L. Larick's meats research program will emphasize factors which influence flavor of muscle foods. His new station project is entitled "Flavor Constituents and Carcass Characteristics of Beef as Influenced by Forage and Grain Feeding" D.H. Pilkinson has been certified as Meat Nutri-Facts Specialist by the Nat. Livestock and Meat Board for training of retail meat counter. S.J. Schwartz gave an invitational paper at the Starch Science and Technology Conference in Orlando. R.W. Shelden attended the "International Conference on the Role of Ozone in Water and Wastewater Treatment", in London, England. F.T. Tavera, Jr., received funding from Conoco Coop to investigate the yield of different brands of duckling by weight classification. R.W. Miller Jr. gave an invitational paper entitled "The Protein of Sweet Potato" at the Fall meeting of the Amer. Chem. Soc. in Chicago.

P.G. Warren, Prof. Emer., Food Science was honored in Oct. Food received the "Personal Achievement Award", the highest award given by the N. C. Cereal Seal Society. The award recognizes one's personal commitment for overcoming adversity, as well as his contribution to helping others deal with their misfortunes.

Academic Affairs - (V.A. Jones)

Seventeen undergraduates have been awarded scholarships to study Food Science for 1985-86. The recipients include: Anna Coffin (Yachum), Jennifer Paris (Chapel Hill), Lisa Hansen (Cary), Pale Hunt (High Point), Stanley Leslie (Cary), Elizabeth Martin (Cary), Sara McCauley (Durham), Chisa Morris (Lansdale, PA) Billie Moes (Shelby), Marilyn Perry (Tarboro), Teresa Phillips (Princeton Jct., NJ), Annette Howell (Monroe), Shoshanah Shorr (Greensboro), Emily Smith (Lexington), Anne Tiedeman (Kiner, VA), Frances Ultrasound (Rocky Mount) and Patricia Butcher (South Africa). The scholarships were made possible by organizations such as IFT, N.C. Dairy Products Association, Tarheel Supplymen's Association & Stouffer Foods and by endowments in the name of Harvey L. and Kathleen Barron, Benjamin Wesley Kilgore, Moses and Helen Kiser, and J. Frank and Margaret Neely.

In the two year Food Processing Distribution and Service Curriculum, six received scholarships. They were Martha Davis (Henderson), Kathy Hill Henson (Oakboro), Tony Medlin (Wake Forest), James Farham (Franklinton), C. Wayne Reavis (Ellenboro) and Billy Smith (Charlotte). Those scholarships come from Philip Morris, N. C. Dairy Products Association, and the Moses H. and Lena Hale Smith and Cameron H. Easton endowments.

Eight students graduated in December upon the completion of B.S., M.S., Ph.D. or two-year degrees in Food Science. The B.S. candidates were Billie Moes and Frances Ultrasound. M.S. degrees were awarded to Melissa Joergen (Tigard, OR), Philip Allen Reden (Raleigh) and Wesley David King (Indianapolis, IN). Jie Yoon Park (Pusan, Korea) and Gary Wayne Wallace (Loretta, TX) received Ph.D. degrees. Gary Ellis (Raleigh) finished the two-year program.