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## Agricultural Experiment Station News October 1981

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THE AGRICULTURAL EXPERIMENT STATION  
INSTITUTE OF AGRICULTURE  
AND NATURAL RESOURCES  
UNIVERSITY OF NEBRASKA-LINCOLN 68583



October 1981 Vol.15 No.3

# Agricultural Experiment Station News

## From the Director's Desk

### The Curiosity Factor

Obvious pride and enthusiasm characterize the research worker who is describing a recent discovery or major breakthrough. The researcher's own curiosity in pursuing a particular concept or idea is often the key element in these successes. The sense of accomplishment which researchers feel when their observations lead to a new idea or concept is surely one of the greatest rewards a research worker can receive.

The ability to pose questions from one's observations...the "curiosity factor"...is essential in research. When coupled with a willingness to work on answers to those questions, curiosity leads to realization of the products of research, namely creativity, discovery and invention.

How can curiosity be stimulated in a research organization? Or more specifically, how can it be stimulated in the Agricultural Experiment Station? Time management, which preserves time to think about research results and their implications, is one important factor. Interaction with other researchers in discussing, debating and exploring ideas and concepts is another.

What more can be done to develop greater curiosity within our research organization? Please help to answer this question by offering your thoughts and suggestions.

**Roy G. Arnold**  
Dean and Director

**Sahs Sez**

### Energy Farm Progress

Compliments to the Nebraska contract team! DOE representatives indicate that the development of the Nebraska project is far ahead of developments of other U.S. projects.

Field Laboratory resident crews brought in a new 6-inch water line and 2-inch natural gas line.

The alcohol building is up, the still is installed, and the feed mill and grain storage unit is essentially completed.

### North Platte Station

Representatives of the North Platte Station hosted the Technical Committee of W-151, "Optimization of the

Use of Range and Complimentary Forages for Red Meat Production". The second day the group reviewed projects and facilities at the Sandhills Agricultural Laboratory, Tryon and the Gudmundsen Sandhills Research Center, Whitman, Nebraska.

**Warren W. Sahs**  
Assistant Director

### IANR - 1982 Conference

Don't forget to mark January 5-7, 1982, on your calendar as dates for the Institute of Agriculture and Natural Resources 1982 Conference. Excellent speakers and lively discussion are anticipated for this event scheduled in the East Union. The theme is "Our Challenge: Making Things Happen". The Experiment Station program is scheduled for Wednesday afternoon, January 6. Further information will come from the Planning Committee at a later date. Hope to see you there.

### Grants and Contracts

Arnold, R. G. (Director's Office) - USDA/SEA/CR	735,555
Ball, E. M. (Plant Pathology) - University of Maine	90
Britton, R. A. (Animal Science) - USDA/SEA/AR	8,000
Brumm, M. C. (Northeast Station) - National Pork Producers Council	3,000
Brumm, M. C. (Northeast Station) - Nebraska Pork Producers Association	1,000
Burnside, O. C. (Agronomy) - Diamond Shamrock	500
Campbell, J. B. (North Platte Station) - Burrighs Wellcome Company	500
Clegg, M. D. (Agronomy) - Nebraska Agriculture Products Industrial Utilization Committee	2,200
Compton, W. A. (Agronomy) - Illinois Foundation Seed, Inc.	1,000
Froning, G. W. (Animal Science) - Monsanto Industrial Chemicals Company	9,989
Froning, G. W. (Animal Science) - Poultry Science Association	140
Gardner, C. O. (Agronomy) - USDA/SEA	40,000
Gardner, C. O. (Agronomy) - Pioneer Hi-Bred International, Inc.	9,000
Gilley, J. R. (Ag Engineering) - USDA/SEA/AR	55,000
Gustafson, W. A. (Southeast Extension & Research Center) - Donation/Gift Chapin Watermatics Inc.	280
Haderlie, L. C. (Agronomy) - PPG Industries	1,600
Haderlie, L. C. (Agronomy) - Monsanto	500
Haderlie, L. C. (Agronomy) - Velsicol Chemical	1,500
Hassler, J. B. (Ag Economics) - USDA/ESS	10,000
Hergert, G. W. (North Platte Station) - Georgia-Pacific Corporation	500

Hogg, A. (Veterinary Science) - Merck, Sharp and Dohme Research Lab	1,000
Kerr, E. D. (Panhandle Station) - Union Carbide	1,500
Kerr, E. D. (Panhandle Station) - FMC Corporation	1,000
Kerr, E. D. (Panhandle Station) - Stauffer Chemical Company	500
Klopfenstein, T. (Animal Science) - Farmland Industries	10,000
Lane, L. C. (Plant Pathology) - Funk Seeds International	550
Lane, L. C. (Plant Pathology) - Northrup King Company	100
Mandigo, R. W. (Animal Science) - Nebraska Pork Producers	4,400
Mandigo, R. W. (Animal Science) - Denver Lamb Company	200
O'Keefe, R. B. (Panhandle Station) - Diamond Shamrock Corporation	1,000
Peters, L. L. (South Central Station) - American Cyanamid Company	500
Rush, J. G. (Panhandle Station) - Eli Lilly and Company	15,120
Sander, D. H. (Agronomy) - Potash and Phosphate Institute	5,000
Schnieder, R. D. (Ag Engineering) - Deere & Company	250
Shahani, K. M. (Food Science & Technology) - Casey Products Inc.	90
Shearman, R. C. (Horticulture) - Diamond Shamrock	2,250
Steadman, J. R. (Plant Pathology) - Diamond Shamrock	1,000
Watkins, J. E. (Plant Pathology) - Diamond Shamrock	750
Wilson, R. G. (Panhandle Station) - Stauffer Chemical Company	2,300
Witkowski, J. F. (Northeast Station) - Stauffer Chemical Company	500
Witkowski, J. F. (Northeast Station) - Otsuka Chemical Company	500
	928,864

#### Projects Approved

#### NEB 13-060 - PHYSIOLOGICAL AND MANAGEMENT ASPECTS OF PUBERTY AND THE OVULATION RATE IN SWINE

This is a new Hatch project with an effective date of July 17, 1981. D. R. Zimmerman and R. J. Kittok of the Animal Science department are the principal investigators. The reviewers of the project were J. Amend (Veterinary Science); R. Johnson (Animal Science); J. Kinder (Animal Science); D. Levis (South Central Station) and S. Lowry (Biometrics and Information Systems Center). The objectives of this project are to improve reproductive efficiency of swine by (a) developing a more complete understanding of the biology of sexual maturation in the gilt; (b) evaluating and developing management approaches for hastening puberty in confinement reared gilts; and (c) developing a more complete understanding of the physiological basis of genetic differences in ovulation rate.

#### NEB 17-038 - INTEGRATED PEST MANAGEMENT OF INSECTS ASSOCIATED WITH THE NEAR ENVIRONMENT OF MAN

This is a new Hatch project with an effective date of June 1, 1981. R. E. Gold (Entomology) is the principal investigator. The reviewers of the project were S. R. Lowry (Biometrics and Information Systems Center); L. B. Bullerman (Food Science and Technology); H. J. Ball (Entomology); and C. Kies (Human Nutrition and Food Management). The objectives of this project are (a) research basic biology, ecology and behavior of insects associated with domestic structures; (b) appraise importance of household insects and their impact upon man and his dwellings; (c) evaluate control strategies and technologies including chemical control; application techniques and equipment; attractants and repellents; biological and control agents; and sanitation; physical and mechanical control methodologies.

#### NEB 21-032 - GENETICS OF STALK ROT DISEASE COMPLEX IN CORN AND SORGHUM

This is a new Hatch project with an effective date of July 21, 1981. G. S. Sidhu (Plant Pathology) is the principal investigator. C. Gardner (Agronomy); S. Jensen (Plant Pathology); R. Mumm (Biometrics and Information Systems Center); J. Partridge (Plant Pathology); and W. Ross (Agronomy) were the project reviewers. The objectives of this project are (a) investigate genetics of resistance in corn and sor-

ghum hosts, and virulence in their stalk rot fungal organisms; (b) isolate important fungal organisms present in the stalk rot disease complex and investigate genetic variability and mode of interaction among them; and (c) develop resistant cultivars against stalk rot disease.

#### NEB 43-007 - SORGHUM BREEDING AND CULTURAL RESEARCH UNDER REDUCED TILLAGE

This is a revised Hatch project with an effective date of April 7, 1981. The principal investigator is P. T. Nordquist of the North Platte Station. This project was reviewed by C. O. Gardner (Agronomy); O. Burnside (Agronomy); J. Partridge (Plant Pathology); R. Staples (Entomology) and W. Schutz (Biometrics and Information Systems Center). The objectives of this project are (a) to improve varieties and hybrids of sorghum by plant breeding; (b) to evaluate cultural practices and crop varieties under nonirrigated ecofallow and ecofallow systems with limited irrigation; and (c) interact with scientists from other Experimental Station locations in evaluating crop varieties under central Nebraska environmental conditions.

#### NEB 43-034 - WEED CONTROL IN REDUCED TILLAGE SYSTEMS IN WEST CENTRAL NEBRASKA

This is a new Hatch project with an effective date of July 21, 1981. The principal investigator is G. A. Wicks of the North Platte Station. The project reviewers were E. Dickey (Agricultural Engineering); A. R. Martin (Agronomy); R. Mumm (Biometrics and Information Systems Center); J. Schmidt (Agronomy); and R. Moomaw (Northeast Station). The objectives of this project are (a) improve weed control systems for corn, sorghum and winter wheat grown under ecofarming concepts in west central Nebraska; (b) develop methods of controlling weeds in crops grown using various reduced tillage systems; and (c) determine the efficacy and persistence of selected herbicides as they relate to reduced tillage in west central Nebraska.

#### NEB 43-035 - EVALUATION OF MANAGEMENT PRACTICES TO IMPROVE REPRODUCTIVE EFFICIENCY OF BEEF CATTLE

This is a new Hatch project with an effective date of September 1, 1981. The principal investigators are G. H. Deutscher and D. C. Clanton of the North Platte Station. This project was reviewed by W. Stroup (Biometrics and Information Systems Center); E. Clemens (Veterinary Science); R. Kittok (Animal Science); and M. Nielsen (Animal Science). The objectives of this project are (a) investigate the use of estrous synchronization with artificial insemination (AI) to improve reproductive efficiency of beef females and (b) evaluate the use of growth promotants on reproductive performance of beef heifers.

#### NEB 44-011 - DEVELOPMENT OF DRYLAND CROPPING SYSTEMS FOR WESTERN NEBRASKA

This is a revised Hatch project with an effective date of April 8, 1981. C. R. Fenster of the Panhandle Station is the principal investigator. The project reviewers were R. Wilson (Panhandle Station); O. Burnside (Agronomy); E. Dickey (Agricultural Engineering); J. Schmidt (Agronomy); and W. Schutz (Biometrics and Information Systems Center). The objectives of the project are (a) to develop crop management systems to maximize use of available water, (b) to investigate and develop methods and techniques for preventing soil erosion under dryland agriculture by reducing tillage and management practices and (c) to develop methods for achieving optimum production, weed control and economic production systems.

#### NEB 44-012 - IMPROVEMENT OF MILLET, CORN, AND SORGHUM PRODUCTION BY BREEDING AND CULTURAL STUDIES

This is a revised Hatch project with an effective date of May 20, 1981. L.A. Nelson of the Panhandle Station is the principal investigator. The project was reviewed by P. T. Nordquist (North Platte Station); C. O. Gardner (Agronomy); W. Ross (Agronomy); R. F. Mumm (Biometrics and Information Systems Center); and D. P. Coyne (Horticulture). The objectives of this project are (a) to collect lines, populations, varieties and hybrids of corn, sorghum, proso, and other millets for testing, recombining, and selecting superior germplasm to be used in new varieties, inbreds, and hybrids and to make them available to the growers; (b) to study techniques of production based on nutrition, rotation, and cultural practices which complement improved cultivars, then work through County Agents and innovative farmers to get these improved practices adopted, (c) to identify and study alternative methods of utilizing corn, sorghum, and millets other than as grain, then begin to develop cultivars which are more desirable in terms of forage production, nutritional content, and accumulation of harmful substances such as nitrates and tannins, (d) to relay the knowledge, technology, and information gained in this research effort to colleagues and producers through journal publication, popular press, radio, television and other means as appropriate.

NEBRASKA AGRICULTURAL EXPERIMENT STATION PUBLICATIONS - September 1981

Journal Articles - Submitted for Publication (contact authors for more information)

6666. Metabolic Responses of the Rooster after Exogenous Thyroid Hormones. R. J. Kittock, T. J. Greninger, J. A. DeShazer, S. R. Lowry and F. B. Mather. Poultry Science.
6667. The Effect of Selected Baits on the Efficacy of a Sticky Trap in the Evaluation of German Cockroach Populations. James B. Ballard and Roger E. Gold. Journal of the Kansas Entomological Society.
6668. Addition of R-33865 to EPTC for Extended Herbicide Activity. T. Obrigawitch, F. W. Roeth, A. R. Martin and R. G. Wilson, Jr. Weed Science.
6669. A Selection Index Applied to Four Cycles of Full-Sib Recurrent Selection in Maize. W. A. Compton and J. H. Lonquist. Crop Science.
6670. Expression of Oil from Oilseeds - A Review. L. M. Khan and M. A. Hanna. Transactions of the ASAE.
6671. Effects of Chopping Temperature on the Ultrastructure of Meat Emulsions as Viewed Through the Scanning Electron Microscope. K. W. Jones and R. W. Mandigo. Journal of Food Science.
6672. Flow of Water Suspensions in Sand and Sand-Silt: II. Hydraulic Conductivity Reduction. D. Swartzendruber and R. L. Uehler. Soil Science Society of America Journal.
6673. Selection for Growth and Muscle Score in Beef Cattle: I. Selection Applied. D. S. Buchanan, M. K. Nielsen, R. M. Koch and L. V. Cundiff. Journal of Animal Science.
6674. Selection for Growth and Muscle Score in Beef Cattle: II. Genetic Parameters and Predicted Response. D. S. Buchanan, M. K. Nielsen, R. M. Koch and L. V. Cundiff. Journal of Animal Science.
6675. Animal Production from Pastures Seeded to Cool-Season Grasses, Alfalfa and Cicer Milkvetch. Alan M. Gray, James T. Nichols and Donald C. Clanton. Journal of Animal Science.
6676. Screening for Sorghum Genotype Differences to Iron Deficiency. R. B. Clark, Y. Yusuf, W. M. Ross and J. W. Maranville. Proceedings of Iron Nutrition and Interaction in Plants.
6677. Lateral Growth and Stem Rust Reaction of Kentucky Bluegrass (*Poa pratensis* L.) Cultivars Exposed to Compaction Stress. R. C. Shearman, J. E. Watkins, E. J. Kinbacher and T. P. Riordan. Agronomy Journal.
6678. Variability for Quality and Agronomic Traits in Forage Sorghum Hybrids. J. F. Pedersen, H. J. Gorz, F. A. Haskins and W. M. Ross. Crop Science.
6679. Coping with Accidentally Killing Another Person: A Case Study Approach. Barbara Jo Chesser. Family Relations.

6680. A Chloroform-HCL Procedure for Estimating Tannins in Sorghum Forage. M. F. Walton, F. A. Haskins and H. J. Gorz. Crop Science.
6681. Genotype by Ecosystem Interactions in Maize (*Zea mays* L.) Grown in a Short Season Environment. J. P. Brakke, C. A. Francis, L. A. Nelson and C. O. Gardner. Crop Science.
6682. Opportunity Costs of Obtaining Energy Efficient Homes. E. Raedene Combs. Housing and Society.
6683. Inactivation and Injury of a Hemolytic Radiation-Resistant Micrococcus Isolated from Chicken Meat. Shieh-Te Tan and R. B. Maxcy. Journal of Food Science.
6684. Bacteriocin Production by *Pseudomonas syringae* PsW-1 in Plant Tissue. Mary L. Smidt and Anne K. Vidaver. Canadian Journal of Microbiology.
6685. Nutritional Value of Textured Protein for Humans. C. Kies. American Chemical Society Fall National Meeting, 1981, New York City, New York.
6686. Immune Response of Pigs Inoculated with Virulent Pseudorabies Virus and Pigs Inoculated with Attenuated or Inactivated Pseudorabies Virus Vaccine Before and After Challenge Exposure. C. L. Kelling, W. L. Staudinger and M. B. Rhodes. American Journal of Veterinary Research.
6687. A Cytological Conspectus and Its Taxonomic Significance of the Genus *Cirsium* Mill. Nebraska. Simon Dabydeen and M. K. McCarty. Nebraska Academy of Sciences.
6688. Preservation of Ascospores of *Sclerotinia sclerotiorum* on Membrane Filters. J. E. Hunter, J. R. Steadman and J. A. Cigna. Phytopathology.
6689. Testosterone Feedback on FSH Secretion in Male Sheep: Evidence for Both Positive and Negative Feedback. M. K. D'Occhio, B. D. Schanbacher and J. E. Kinder. Journal of Reproduction and Fertility.
6690. Enzyme-Linked Immunosorbent Assay for Barley Yellow Dwarf Virus Using Antiserum Produced to Virus from Field-Infected Plants. B. Doupnik, R. E. Stuckey, G. R. Bryant and T. P. Pirone. Plant Disease.
6691. Relationship Between Blood Testosterone Concentration and Patterns of LH Secretion in Male Sheep. M. J. D'Occhio, B. D. Schanbacher and J. E. Kinder. Journal of Endocrinology.

Journal Abstracts - Submitted for Publication (contact authors for more information);

- 81-1604. Alfalfa Insecticides Evaluation, 1981. Miles A. Karner, G. R. Manglitz and W. R. Kehr.
- 81-1605. Economic and Agronomic Impacts of Varied Philosophies of Soil Testing. R. A. Olson, K. D. Frank, P. H. Grabouski, G. W. Rehm and Delno Knudsen. American Society of Agronomy Meetings.

- 81-1606. Accelerated Degradation of Thiocarbamate Herbicides in Soils with Prior Thiocarbamate Exposure. R. G. Wilson, A. R. Martin, F. W. Roeth and T. Obrigawitch. Proceedings of the Weed Science Society of America.
- 81-1607. Translocation of  $^{14}\text{C}$ -glyphosate and  $^{14}\text{CO}_2$ -labelled Photosynthate in Canada Thistle [*Cirsium arvense* (L.) Scop.]. R. S. McAllister and L. C. Haderlie. Weed Science Society of America Meetings.
- 81-1608. Windrow Composting Municipal Sewage Wastes for Land Application. Leon Chesnin. Journal of Environmental Professional.
- 81-1609. Correlation Between Anatomical and Physiological Features of Field Bindweed (*Convolvulus arvensis* L.) under Moisture Stress. M. H. Rashed and Lloyd C. Haderlie. Weed Science Society of America Meeting, Feb. 7-11, 1982.
- 81-1610. Seed Germination of *Ostrya virginiana* (mill.) K. Koch Using Combinations of Scarification, Stratification, and  $\text{GA}_3$  Treatments to Overcome Dormancy. Steven E. Newman, Richard K. Sutton and Stephen R. Lowry. HortScience.
- 81-1611. Impacts of Drought in the North American Great Plains. Norman J. Rosenberg. American Association for Advancement of Science Annual Meeting, January 1982 (invitational paper).
- 81-1612. Agricultural Drought Strategies in the Great Plains: Past, Present and Future. Donald A. Wilhite. AAAS Meeting, January, 1982.
- 81-1613. Government Response to Drought in the U. S. Donald A. Wilhite. AAAS Meeting, January 1982.
- 81-1614. Post-Establishment Application of Nitrogen and Phosphorus to Forages Seeded with Reduced Tillage Techniques. G. W. Rehm and B. E. Anderson. Agronomy Abstracts.
- 81-1615.  $\text{NO}_3$  Accumulation in Soils. Robert A. Olson. American Society of Agronomy Meetings.
- 81-1616. Rates of Nitrogen Accumulation in Irrigated Maize. M. P. Russelle, R. A. Olson and R. D. Hauck. American Society of Agronomy Meetings.
- 81-1617. Crop Yield and Plant Differences as Effected by Cropping Sequence. R. M. McClure, A. D. Flowerday, C. A. Shapiro and W. M. Sullivan. American Society of Agronomy Meetings.
- 81-1618. Topical Toxicity of Soil Insecticides to Western Corn Rootworm Adults in Nebraska, 1981. Harold J. Ball. Insecticide and Acaricide Tests.
- 81-1619. Honeylocust - A Potential Farm Crop. W. T. Bagley. Proceedings Northern Nutgrowers/Walnut Council.
- 81-1620. Iron Utilization from AACC Hard Red Spring Wheat Bran by Human Adults. C. Kies and H. M. Fox. American Association of Cereal Chemists Meeting (Oct., 1981).

- 81-1621. Purified Psyllium Seed Fiber, Human Gastro-Intestinal Tract Function, and Nutritional Status. C. Kies. American Chemical Society Meeting, March, 1982.
- 81-1622. Zinc Bioavailability from Vegetarian Diets: Influence of Dietary Fiber and Ascorbic Acid. C. Kies. American Chemical Society Meeting, March, 1982.
- 81-1623. Antigens in Perienteric Fluid of *Ascaris suum* Which Stimulate Antibodies in Swine. M. B. Rhodes and L. A. Staudinger.
- 81-1624. Solid-Phase Indirect Radioimmunoassay using Pseudorabies Virus-Infected Cell Culture Fluid Antigen. C. L. Kelling, J. D. Neill and M. B. Rhodes.
- 81-1625. Testosterone and Patterns of LH Secretion in Male Sheep. M. J. D'Occhio, B. D. Schanbacher and J. E. Kinder. Journal of Andrology.

BULLETINS PRINTED

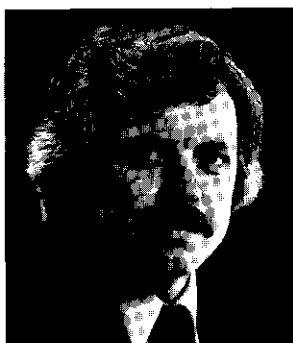
- RB 299. A Forecasting-Programming Method for Swine Production--Marketing Decisions. Larry Janssen and James B. Hassler.

# New Experiment Station Personnel

**Nancy M. Betts**, Assistant Professor, Human Nutrition and Food Service Management. Dr. Betts received her B.A. in 1974 from Penn State and her M.S. in 1980 at Ohio State. From August, 1977 until June, 1980, she was a Research and Teaching Assistant. Before coming to Nebraska, she was a Research Consultant for Ohio Women, Infants and Children Program and an Academic Advisor for Ohio State. A recent recipient of her Ph.D., she joined the Human Nutrition and Food Service Management staff in August.



**A. Larry Branen**, Department Head, Food Science and Technology. Dr. Branen earned his B.S., 1967, University of Idaho; his Ph.D., 1970, Purdue University. From 1970-73, he was an Assistant Professor at the University of Wisconsin. He was a Professor and Chairman of the Food Science department at Washington State. He is a member of the Institute of Food Technology; International and Washington State Association of Milk and Food Sanitarians; American Oil Chemists Society; Nutrition Today Society. He joined IANR on September 1.



**Chris R. Calkins**, Assistant Professor, Animal Science with Courtesy Appointment in Food Science and Technology. Dr. Calkins earned his B.S., 1976, from Texas A&M; his M.S., 1978, from the University of Tennessee; his Ph.D., 1981, Texas A&M. He has two years experience as a Graduate Teaching Assistant and four years experience in research. He is a member of the American Meat Science Association; American Society of Animal Science; and the Institute of Food Technologists. He has written several publications. He joined IANR in August.



**Stephen J. Danko**, Research Associate, Agricultural Biochemistry. Dr. Danko earned his B.S., 1977, SUNY College of Environmental Science and Forestry; Ph.D., 1981, Oregon State. From September, 1977 to June, 1981, he was a Graduate Teaching Assistant at Oregon State. His Ph.D. Thesis was on "Production and Characterization of Antifungal Compounds Produced by Tomato Plants Inoculated with *Fusarium oxysporum* f. sp. *lycopersici*". He is a member of American Chemical Society; Phytochemical Society of North America; and American Phytopathological Society. He began July 1.



**Roger W. Elmore**, Assistant Professor, Agronomy, South Central Station. Dr. Elmore earned his B.S., 1972, from Illinois State; M.S., 1978, and Ph.D., 1981, from the University of Illinois. From January, 1976 to May, 1981, he was a Graduate Research Assistant and has performed some teaching duties at the University of Illinois. Dr. Elmore has written several publications and his thesis was titled "Importance of Morphological and Physiological Traits in Competition Between Inter-cropped Plants". He is a member of the American Society of Agronomy and Crop Science Society of America. He began his position on July 1.



**Kenneth Hubbard**, Assistant Professor, Climate Resources Specialist Center for Agriculture Meteorology and Climatology. A native of Nebraska, Dr. Hubbard earned his M.S. in 1973, South Dakota School of Mines and Technology; his Ph.D. 1981, Utah State. From 1977-81, he was an Assistant State Climatologist at Utah Department of Agriculture and a Research Scientist/Meteorologist at Utah Water Research Lab. From 1976-81, he taught courses in Soil Science and Biometeorology at Utah State. He has authored many publications; developed and has overseen several projects in Climatology. He joined IANR in August.



**Bharathi, J. Joshi**, Research Associate, Plant Pathology. A native of India, Dr. Joshi earned her B.Sc., University of Delhi, 1967; worked in Diagnostic Regents Department at Hasskine Institute, Bombay, 1967-69; joined the Cancer Research Institute, Bombay, working towards her Master's, which she received in 1972. She obtained her Ph.D., University of Bombay, 1980; thesis on "Immunobiological Studies on Murine Leukemia and Mammary Tumor Viruses". She started in July to study the mechanism of infection of cowpea mosaic virus in plants and beetles.



**Connie Ley, Assistant Professor, Education and Family Resources.** Dr. Ley earned her B.S., 1966, Indiana University of Pennsylvania; M.S., 1975 and Ph.D., 1977 from Penn State. She has eight years of experience as a Home Economics Teacher for Pittsburgh Public Schools; four years as Instructor of Home Economics Education from Penn State. Her thesis was on "An Exploratory Study of the Political Socialization of Politically Active Home Economists". Memberships include: American Home Economics Association; American Vocational Association; Association for Curriculum and Supervision. She started in August, 1979.



**Richard O. Pierce, Assistant Professor, Agricultural Engineering.** Dr. Pierce earned his B.S., 1974, his M.S. in 1976, and his Ph.D. in 1981 from the University of Nebraska, majoring in Agricultural Engineering. He has authored many publications dealing with methods of energy, performance, utilization and efficiency of grain drying. His thesis was entitled, "Drying Scheduling - A Management for Low Temperature Drying Systems". Dr. Pierce started his present extension and research position on July 1.



**Patrick J. Shea, Assistant Professor, Agronomy.** In 1975, Dr. Shea earned his B.S. in Biology from Fordham University in his home state of New York. He obtained his M.S. in Agronomy and Weed Science at the University of Connecticut. He completed graduate work at North Carolina State, where he concentrated his studies and research in the soil-plant behavior of herbicides and organic contaminants in waste water, and received his Ph.D. in 1981. He joined the staff on July 1 and will conduct research in pesticide-soil interactions.



**Neil W. Sullivan, Teaching-Research Position in Farm Power Systems, Agricultural Engineering.** Mr. Sullivan received his B.Sc., 1976, from Cornell University; his M.Sc., 1979, and is expecting his Ph.D. in 1983 from the University of Nebraska. He has more than two years experience as a Research Assistant at Cornell University and the University of Nebraska; and more than three years experience as a Research Associate. He authored many publications and the title of his Ph.D. thesis will be "Energy Management for Agricultural Applications". He started on July 1.



**Kathryn J. Tegtmeier, Research Associate, Agricultural Biochemistry.** Dr. Tegtmeier received her B.S., 1968, Muhlenberg College; her M.S., 1971, Pennsylvania State University; and her Ph.D., 1981, from Cornell University. From 1976-80 she was at Cornell University involved with Plant Pathology research. She is a member of American Association for the Advancement of Science; and American Phytopath Society. Her experience is in the area of fungi which is a valuable asset in understanding the role of toxins in plant diseases. She started in January of this year.



**Kenneth R. Tremblay, Jr., Assistant Professor, Education and Family Resources.** Dr. Tremblay earned his B.A., 1974, University of Alaska; M.A., 1977 and Ph.D., 1980, Washington State. Previous experience; Graduate Research Assistant and Graduate Teaching Assistant at Washington State; Assistant Professor, University of South Dakota. He has written several publications. He is a member of the American Sociological Association; Rural and Midwest Sociological Societies; Policy Studies Organization; American Association of Housing Educators. He began his position in August, 1980.

