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THE AGRICULTURAL EXPERIMENT STATION
INSTITUTE OF AGRICULTURE
AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA-LINCOLN
H. W. OTTOSON, DIRECTOR

Agricultural Experiment Station



Vol. 9, No. 10, April 1977

FROM THE DIRECTOR'S DESK

At no time during the past 15 years has there been more discussion at national levels about agricultural research. There are several reasons for this; international conferences on world population, and on world food, have raised questions about the ability of the world's food producers to meet future food needs and demands of this population. The convergence of factors which led to the food supply-price situation of 1973-74 threw an additional scare into the minds of policy makers concerned with these issues. Admittedly, the apparent "crisis" has eased off for the moment with higher levels of stocks and lower prices, but the basic long-run concern about food production continues.

There seems to be a consensus in these discussions that the most important factor contributing to long-term growth in agricultural productivity has been technological change. In turn, the development and application of new and improved technologies depends upon investment in scientific research and extension programs. For example, the National Research Council says that U. S. agricultural productivity increased approximately 1.75% per year between 1930 and 1972. That report attributes 80% of this increase to research and extension activities. Professor Willis Peterson, of the University of Minnesota, indicates that the returns to investment to agricultural research and extension in recent years falls in the range of 36% to 46% per year, more than double the before-tax rate of returns to investments in the private U. S. economy.

Despite all this, agricultural research at the national level has not had a priority position during recent years. The Agricultural Research Service had fewer scientists in 1975 than it had 10 years previously. Hatch fund allocations to the states have not, until the last two or three years, kept up with inflation. The reservoir of unused technology and basic knowledge relative to agriculture has been pulled down.

Because of these concerns, several bills have been introduced in Congress to provide for large increases in agricultural research funding. For example, Congressman Wampler of Virginia has sponsored a bill which would provide for significant increases in agricultural research funding. Senator Talmadge of Georgia has introduced a bill in the Senate which would also provide for increased funding for agricultural research as part of an omnibus agricultural bill. Congressman Thornton has introduced a third bill addressed to the same objective. These proposals would provide: (1) For large increases in the base funding under the Hatch Act to the agricultural experiment stations, as well as to the Agricultural Research Service; (2) A greatly enhanced competitive grant program for basic research of relevance to food production; (3) For advisory input on agricultural research programs from various types of users. It is too early to predict the result of these efforts, but it is heartening to note congressional awareness of the importance of agricultural research.

As a footnote, Nebraska can take a measure of satisfaction in that the state legislature and the governor have through their interest and financial support been more supportive to agricultural research in the state in recent years than has the national government.

Howard W. Ottoson

PERSONNEL ACTIONS

Cannon, Kenneth L. - Visiting Prof. Human Development & the Family - Appt.
Gast, Robert G. - Prof. of Agronomy & Chairman of the Department - Appt.
Grace, Oliver D. - Prof. of Veterinary Science - Completion of term as Interim Chairman
Stinnett, Nick - Prof. of Human Dev. & the Family and Chairman of Department - Appt.
Van Steenberg, Jerre - Visiting Assoc. Prof. in Interior Design - Appt.

GRANTS AND CONTRACTS

Farlin, S. D. - An. Science - University of Pennsylvania	\$2,000
Farlin, S. D. - An. Science - IMC Chemical Group, Inc.	8,000
Grabouski, P. H. - Agronomy (NP Sta) - Colorado-Nebraska Compost Co.	1,500
Haderlie, L. C. - Agronomy - Velsicol Chemical	1,250
Kelling, C. L. - Veterinary Science - National Pork Producers Council	5,000
Martin, A. R. - Agronomy - Farmland Industries Inc.	500
Nichols, J. T. - Agronomy (NP Sta) - Allied Chemical Co.	2,342
Olson, R. A. & D. H. Sander - Agronomy - Phillips Petroleum Co.	1,000
Rehm, G. W. - Agronomy (NE Sta) - National Fertilizer Solutions Association	2,000
Splinter, W. E. - Ag. Engineering - Miscellaneous Donors	840
Weihing, J. L. - Plant Path. (PH Sta) - Western Tech. Community College Area	2,956
Wicks, G. A. - Agronomy (NP Sta) - Shell Oil Company	500

GENERAL NOTES

1. Dr. Earl Dickinson, the new Chairman of Veterinary Science, is now on deck. His family (wife Majorie and children Richard, 17, David, 14, and Wendy, 11) is yet in Oregon for the school year. They will join him early in the summer in their new home at 1600 Twin Ridge Road. We are most pleased to have them join us.
2. Two other new chairmen July 1: Dr. Robert Gast of Minnesota has accepted the leadership position of our Department of Agronomy. Dr. Nick Stinnett will head the Department of Human Development and the Family.
3. Schneider on Safety--Urge irrigators to make sure that center pivot systems are hooked up properly. They can constitute a serious electrical hazard. If they are electric powered, the power supplier, manufacturer, or state electrical inspector should check them over.
4. New Budget and Data forms (2000-2) are to be used henceforth for all foundation, federal agency or state agency grants and contracts. The somewhat simpler (?) old forms (2000-1) may still be used for private or industry grants for which formal application is not made, or for grants handled through the University of Nebraska Foundation.
5. The Current Research Information Service (CRIS), which contains information on all AES and USDA research, is now available through the Lockheed DIALOG retrieval system to anyone (industry, institutions, agencies and individuals) having the service of computer systems. This access does not include financial and personnel data. CSRS will continue to handle in-house prepared searches upon request to AES personnel.
6. When you believe you have found the key to success, you had better check to be sure the lock hasn't been changed.

R. W. Kleis

NEBRASKA AGRICULTURAL EXPERIMENT STATION PUBLICATIONS - March 1977

Journal Articles (contact authors for more information)

5284. Transient Changes During Soybean Imbibition. David J. Parrish and A. Carl Leopold. Plant Physiology.
5285. A Simplified Model for Corn Growth Under Moisture Stress. S. W. Childs, J. R. Gilley and W. E. Splinter. Transactions of the ASAE.
5286. Characterization of the Periconia Circinata Population in a Milo Disease Nursery. G. N. Odvody, L. D. Dunkle and L. K. Edmunds. Phytopathology.
5287. Minimum Tillage Systems for Reducing Wind Erosion. C. R. Fenster and G. A. Wicks. ASAE Transactions.
5288. Registration of RP1R and RP2B Sorghum Germplasm. W. M. Ross, S. D. Kindler, H. L. Hackerott, T. L. Harvey, A. Sotomayor, O. J. Webster and K. D. Kofoid. Crop Science.
5289. L-Methionine/Choline/Inorganic Sulfur Interrelationships in Soy Based Diets Fed to Human Adults. Merlyn K. D. Vemury, Constance Kies and Hazel M. Fox. Journal of Nutrition.
5290. Influence of Feeding Regime and Biological Type on Growth, Composition and Palatability of Steers. Gerald M. Smith, J. D. Crouse, R. W. Mandigo and Keith L. Neer. Journal of Animal Science.
5291. Blood Serum Fatty Acid Patterns of Adolescent Boys as Influenced by Source of Dietary Fat: Corn Oil/Butter Oil, Safflower Oil/Beef Tallow. Constance Kies, Li-Shine Lin, Hazel M. Fox and Mary Korslund. Journal of Food Science.
5292. Measuring and Defining Rheological Properties of Meat from Engineering Concepts. Val Bartek and Leonard L. Bashford. ASAE.
5293. Rapid, Accurate Calculations of Moist Air Properties. Albert Weiss. Transactions of the ASAE.
5294. Predicting Protein Quality in Foods. H. W. Hsu, J. G. Kendrick and L. D. Satterlee. Journal of Food Biochemistry.
5295. Polyamine Content of Several RNA Plant Viruses. Kenneth W. Nickerson and Leslie C. Lane. Virology.
5296. Physiological and Biochemical Studies on Senescing Tap Root Nodules of Soybeans. Robert V. Klucas and Daniel Arp. Plant Physiology.
5297. Protein-Calcium Binding and Its Effect on Several Food Protein Sources-Molecular Weights and Isoelectric Points. G. W. Wallace and L. D. Satterlee. Journal of Food Biochemistry.
5298. The Relationship of Selected Beef Carcass Traits with Meat Palatability. J. D. Crouse, Gerald M. Smith and R. W. Mandigo. Journal of Food Science.

Journal Abstracts (contact authors for more information)

- 77-850. Selected B Vitamin Utilization from Elemental and Nonelemental Formula Diets by Human Adults. Rebecca Greenfield, Constance Kies and Hazel Fox. Nebraska Academy of Sciences - Proceedings.
- 77-851. Epiphytic Populations of Xanthomonas phaseoli on Tolerant and Susceptible Leaves and Pods of Phaseolus vulgaris L. D. P. Coyne, M. L. Schuster and Betty Hoff.
- 77-852. Dietary Fiber/Zinc Interactions Affecting Zinc Nutritional Status of Humans. Donna Beshgetoor, Constance Kies and Hazel Fox. Nebr. Academy of Sciences - Proceedings.
- 77-853. Temperature Responses of Grass and Agricultural Crops Measured With Leaf Thermocouples and Infrared Thermometer Techniques. S. Steinmetz, B. L. Blad and N. J. Rosenberg. 13th American Meteorological Society Conference on Agriculture & Forest Meteorology, Purdue University, April 4-6, 1977.
- 77-854. Turbulent Transport Under Advective Conditions. Raymond P. Motha, S. B. Verma and N. J. Rosenberg. 13th American Meteorological Society Conf. on Agriculture & Forest Meteorology, Purdue Univ., April 4-6, 1977.
- 77-855. Sensible Heat Advection and Evapotranspiration in the Subhumid to Semiarid Climate of the Central Great Plains. Tom W. Brakke, S. B. Verma and N. J. Rosenberg. 13th American Meteorological Society Conf. on Agriculture & Forest Meteorology, Purdue Univ., April 4-6, 1977.
- 77-856. Microclimate of Dry Edible Beans as Influenced by Irrigation. Larry Hipps, Blaine L. Blad, Albert Weiss and James R. Steadman. 13th American Meteorological Society Conf. on Agriculture & Forest Meteorology, Purdue Univ., April 4-6, 1977.
- 77-857. The Blue Aphid, A New Pest of Alfalfa in the United States. George R. Manglitz. 32nd Annual Meeting, North Central Branch, Entomological Society of America.

BULLETINS PRINTED

- OTC 178. Performance of Soybean Varieties in Nebraska 1976. A. F. Dreier, J. H. Williams, R. S. Moomaw, P. H. Grabouski, J. E. Specht and L. B. Svec.
- OTC 179. Nebraska Grain Sorghum Performance Tests 1976. A. F. Dreier, P. T. Nordquist, L. V. Svec, P. H. Grabouski and L. A. Nelson.
- OTC 180. Millet Variety Tests 1976. L. A. Nelson.
- RB 280. Growing Degree Days Predictions for Corn and Sorghum Development and Some Applications to Crop Production in Nebraska. R. E. Neild and M. W. Seeley.
- Publications of the Nebraska Agricultural Experiment Station 1946-1976 (Inclusive).