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# Agricultural Experiment Station News December 1973

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UNIVERSITY OF NEBRASKA COLLEGE OF  
AGRICULTURE AND HOME ECONOMICS  
THE AGRICULTURAL EXPERIMENT STATION

E. F. FROLIK, DEAN  
H. W. OTTOSON, DIRECTOR

# Agricultural Experiment Station



Vol. 6, No. 6, December 1973

FROM THE DIRECTOR'S OFFICE

*Our Very Best Wishes to You  
and Your Families for the  
Holidays and for 1974*

Delores  
Mary Ann  
Mercedes

Howard  
Bob  
Warren

Good news for Christmas! We have just received word that the Federal Office of Management and Budget has released the Hatch appropriations for 1973-74 in the amounts indicated in the agricultural appropriations bill passed by Congress and signed by the President in October. This means that the proposed 5 percent reduction in Hatch payments to the states has been restored, translating to over \$260,000 to the Nebraska Station. Thus, the object of much effort during 1973 has been attained, and a cause of real concern relieved.

We will give you a more detailed report next month.

### Production of Agricultural Research and Extension

Several past research efforts have shown the high productivity of agricultural research and extension work in agriculture. For example, in our winter 1966 Quarterly, I reviewed work by Griliches of the University of Chicago which estimated a marginal return \$10 (\$10 for the last dollar applied!) or 1000 percent in 1959. Since private research and extension was omitted from the analysis, and represent as large an expenditure as public research, we should probably scale the above; for want of any better criterion, I scaled this index in 1966 to \$5 per marginal dollar spent for public research and extension, or 500 percent.

New work in 1973 by Pavelis\* of ERS, USDA, substantiates Griliches earlier work and indicates that the productivity of research and extension is still high. He estimates the marginal productivity of research and extension in 1972 at \$6 per dollar, a marginal return of 600 percent. This compares to his estimate of 8 percent return on capital investment in agriculture in 1972, a negative marginal return to energy expenditures, on a 10 percent return on a marginal dollar on national resource investment.

During the period 1929-72, real farm output increased at a net rate of 1 percent per year, while farm productivity (efficiency) increased at the rate of 1.75 percent per year. Pavelis concludes that research and extension activities explain about 80

\*George A. Pavelis. Energy, Material Resources and Research in Agriculture. Economic Research Service, USDA. August 1, 1973.

percent of the tendency for agricultural growth from 1929-72, and from 60 to 70 percent of the tendency for increased efficiency, out of all the factors which he analyzed, including labor, capital, land, energy, and investment in natural resources.

Obviously these data are of interest to research and extension staff members and administrators. They lend additional confidence to proposals for more resources for research and extension effort in agriculture, particularly in view of contemporary dynamics of agricultural trade, domestic demand for agricultural products, and energy.

Howard W. Ottoson

#### PERSONNEL ACTIONS

Dickason, Elvis A. - Director of International Programs (added appointment)  
Neild, Ralph E. - Associate Professor of Geography (courtesy appointment)  
Paul, Pauline C. - Prof. of F&N (resignation to head Home Econ. at Univ. of Ill.)

#### GRANTS AND CONTRACTS

Ellington, E. F. - Animal Science - Emergency Employment Act	\$8,627
Fischbach, Paul E. - Agricultural Engineering - Stauffer Chemical Co.	2,000
Fischbach, Paul E. - Agr'l Engineering - Upper Big Blue Nat. Resources Dist.	900
Kendrick, James G. - Agricultural Economics - Neb. Bankers Association, Inc.	1,100
Klopfenstein, Terry - Animal Science - U. S. Brewers Association	9,500
Peo, Ernest R. - Animal Science - Pfizer Incorporated	2,500
Salac, Sotero S. - Horticulture and Forestry - Nebraska Dept. of Roads	59,018
Vidaver, Anne K. - Plant Pathology - Eli Lilly and Company	5,000
Clanton, D. C. - Animal Science (NP Sta.) - Int. Minerals and Chemical Corp.	2,000

#### GENERAL NOTES

1. It is anticipated that the Panhandle Station will utilize the land and "science wing" of the Hiram Scott facility recently accepted by the Board of Regents. This will provide needed research land, greater proximity to town and headquarters expansion capacity. It is intended that new resources will permit this move without diluting already overstretched present budgets.
2. Congratulations to the following recently elected to the graduate faculty:

John Addink - Agricultural Engineering	Ronald Prior - Animal Science
Ronald Christenson - Animal Science	Jerry Riffle - Plant Pathology
Benjamin Doupnik - Plant Pathology	Bertrand Somerhalder - Agr'l Engineering
Ronald Kohlmeier - Animal Science	Norris Swanson - Agr'l Engineering
3. Congratulations also to Professor Warren, newly elected national president of Block and Bridle, Dr. Fox for Mortar Boards Distinguished Teaching Award and Dr. Edwards for the distinguished young engineering education award of ASAE.
4. Sahs Sez--that now is the time to order supplies for 1974 programs and to take your wife out to dinner.
5. Schnieder on Safety--Little things annoy us and annoyances can cause accidents. No such problem should be allowed to develop to risk injury to you or others.
6. It is easier to back world-betterment movements than to live unselfishly among a few people everyday.

R. W. Kleis

NEBRASKA AGRICULTURAL EXPERIMENT STATION PUBLICATIONS - November 1973

Journal Articles (contact authors for more information)

3696. Zonate Leaf Spot in the Northern Sorghum Belt. Gary N. Odvody, Larry D. Dunkle and L. K. Edmunds. Plant Disease Reporter.
3697. Development of a Regional Laboratory and Use of Para-Medical Personnel. Clair M. Hibbs. Proceedings of 77th Annual meeting of United States Animal Health Association & 16th Annual Conference of American Association of Veterinary Laboratory Diagnosticians.
3698. Loneliness and the Elderly as Related to Housing. Harriette Woodward, Ruby Gingles, and John C. Woodward. The Gerontologist.
3699. Research On Climate and Agricultural Production in the Context of On-Farm Water Management. Norman J. Rosenberg. Proceedings, USAID Symposium on On-Farm Water Management.
3700. A Theoretical Basis for Ground Water Management. Donald L. Peterson. Journal of Land Economics.
3701. Watershed Management Without Surface Runoff. D. M. Manbeck. Water Resources Bulletin.
3702. A Critical Review of Light Models for Estimating the Shortwave Radiation Regime of Plant Canopies. Raoul Lemeur and Blaine Blad. Presented at the Symposium on Plant Modification for More Efficient Water Use.
3703. Standards Development and Processing--A Typical Example. LaVerne E. Stetson. Agricultural Engineering.
3704. Use of Population Breeding in Sorghum--Problems and Progress. W. M. Ross. Proceedings, ASTA Corn-Sorghum Research Conference.
3705. Effect of Antibiotics and High Grain Starting Rations on Rumen Fermentation. Terry Gompert, John Ward and Walter Woods. Journal of Animal Science.
3706. The Influence of a Measured Amount of Exercise During the Growing Finishing Period on Several Performance and Carcass Parameters in Confinement Reared Swine. G. M. Weiss, E. R. Peo, Jr., R. W. Mandigo and B. D. Moser. Journal of Animal Science.
3707. Ribonucleic Acid of Barley Yellow Dwarf Virus. M. K. Brakke and W. F. Rochow. Virology.
3708. Sprinkler Irrigation Design Criteria for Sugar Beets. David W. Fonken, John C. Steele and Paul E. Fischbach. Transactions of the American Society of Agricultural Engineers.
3709. Vitamin/protein Interrelationships Influencing the Protein Nutritive Value of a Soy TVP Product for Humans. Constance Kies and Hazel M. Fox. Cereal Chemistry.
3710. Effect of Plant Age and Inoculum Concentration on Leaf Freckles and Wilt of Corn. A. G. Calub, M. L. Schuster, C. O. Gardner and W. A. Compton. Crop Science.

Journal Abstracts (contact authors for more information)

- 73-270. Response of Nebraska Sandhills Forage Production to Green Sagewort Control. Larry A. Morrow and M. K. McCarty. Society of Range Management.
- 73-271. Relationship of Bone-Breaking Strength to Performance of G-F Pigs. W. T. Ahlschwede and E. R. Peo, Jr. Journal of Animal Science.
- 73-272. Breeding and Genetic Studies of Tolerance to Several Bean (Phaseolus vulgaris L. Bacterial Pathogens. D. P. Coyne and M. L. Schuster. Proceedings of the Bean Improvement Cooperative and National Dry Bean Research Conference - 1973.

BULLETINS PRINTED

- RB 258. Results of Systematic Analyses for Protein and Lysine Composition of Common Wheats (Triticum Aestivum L.) in the USDA World Collection. K. P. Vogel, V. A. Johnson and P. J. Mattern.
- RB 256. Results of the Third International Winter Wheat Performance Nursery. J. E. Stroike, V. A. Johnson, J. W. Schmidt, P. J. Mattern and K. D. Wilhelmi.
- RB 257. Polyperiod Analyses of Investment Strategy for Nebraska Grain-Livestock Farms. Glenn A. Helmers and Gary W. Lentz.