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



May, 1981 Vol.14 No.10

Agricultural Experiment Station News

From the Director's Desk

A recently published book, has come to my attention, "Advice To A Young Scientist,"¹ by Sir Peter Medawar, a distinguished scientist, Nobel Prize recipient (1960) and member of the Royal Society of London. Some relevant examples from the book include the following.

On selection of a research area:

"It can be said with complete confidence that any scientist of any age who wants to make important discoveries must study important problems."....."the problem must be such that it matters what the answer is — whether to science generally or to mankind." (p. 13).

On commitment to a hypothesis:

"I cannot give any scientist of any age better advice than this: the intensity of the conviction that a hypothesis is true has no bearing on whether it is true or not. The importance of the strength of our conviction is only to provide a proportionately strong incentive to find out if the hypothesis will stand up to critical evaluation." (p. 39).

On collaboration:

"Scientific collaboration..... is, in the planning stage, anyway, more like a session of gag writers, for although each one knows, as all scientists know, that having an idea — a brainwave — can be only a personal event, each also knows that an atmosphere can be created in which one member of the team sparks off the others so that they all build upon and develop each other's ideas. In the outcome, nobody is quite sure who thought of what. The main thing is that something was thought of.

"Synergism is the key word in collaboration — it connotes that the joint effort is greater than the sum of the several contributions to it — but collaboration is not obligatory, no matter how many pompous pronouncements may be made on the supersession of the individual by the team. Collaboration is a joy when it works, but many scientists can and many do get on very well as loners." (p. 34-35).

I have a copy of this book in my office for any who might wish to borrow it.

Roy Arnold
Dean and Director

¹ Medawar, P. B., 1979. Advice to a Young Scientist, Harper & Row, Publishers, New York.

Projects Approved

The following projects are approved by the Nebraska Corn Development, Utilization and Marketing Board for FY 81-82 funding:

1. Improving Nitrogen Fertilizer Recommendations on Corn—\$7,000

Investigators: E. J. Penas, G.W. Rehm, K. D. Frank, G.W. Hergert, R. A. Wiese

2. Increasing Effectiveness of Breeding for Insect and Disease Resistance in Nebraska—\$15,250

Investigator: W. A. Compton

3. Study the Biology and Control of Second Generation European Corn Borer—\$16,665

Investigator: J. F. Witkowski

4. Increasing the Nutritional Quality of Corn Gluten Meal—\$13,325

Investigators: C. E. Walker, L. D. Satterlee, J. G. Kendrick

5. Corn Utilization Research Laboratory: Equipment Request—\$12,090

Investigator: C. E. Walker

6. The Identification and Characterization of Heat Stable Starch Degrading Enzymes—\$12,800

Investigator: J. H. Rupnow

The Nebraska Soybean Development, Utilization and Marketing Board approved the following projects for FY 81-82 funding:

1. Efficient Nitrogen Use Following Soybeans in Rotation—\$7,500

Investigators: M. D. Clegg, E. J. Penas

2. Investigation of Row Spacings, Weed Control Practices & Soybean Varieties for Expansion of Soybean Production Onto Coarse Textured Soil of Northeast Nebraska—\$3,800

Investigator: R. Moomaw

3. Time of Irrigation and N Application for Optimum Soybean Production—\$8,800

Investigators: R.A. Olson, M. P. Russelle, A. D. Flowerday

4. Evaluation of Rate & Placement of Plant Nutrients for Irrigated Soybean Production in Northeast & Eastern Nebraska—\$3,000

5. Development of Improved Soybean Varieties for Nebraska—\$10,000

Investigators: J. H. Williams, J. E. Specht

6. Seasonal Histories and Population Dynamics of Insects Common to Nebraska Soybeans—\$9,500

Investigator: J. F. Witkowski

7. Assessment of Races of Phytophthora Root Rot of Soybean Present in Nebraska—\$15,500

Investigator: J. E. Partridge

8. Soybean Oil as an Alternative Energy Source—\$6,200

Investigator: M. A. Hanna

Grants and Contracts

Arnold, R. G. (Director's Office) - USDA/CSRS	69,461	Mandigo, R. W. (Animal Science) - Denver Lamb Company	200
Ball, E. M. (Plant Pathology) - Potato Association of America	2,000	Martin, A. R. (Agronomy) - Dow Chemical Company	600
Ball, H. J. (Entomology) - Insect Control & Research, Inc.	1,000	Moomaw, R. (Northeast Station) - Ciba-Geigy Corporation	500
Bodman, G. (Ag Engineering) - UN Foundation	283	Moomaw, R. (Northeast Station) - E. I. DuPont deNemours & Company	750
Burnside, O. C. (Agronomy) - Ciba-Geigy	1,000	Moomaw, R. (Northeast Station) - Chevron Chemical Company	850
Burnside, O. C. (Agronomy) - E. I. DuPont deNemours Co., Inc.	800	O'Keefe, R. B. (Panhandle Station) - Nebr. Dept. of Ag. - Potato Division	5,000
Campbell, J. B. (North Platte Station) - ICI Americas, Inc.	500	Peo, E. R. (Animal Science) - A. O. Smith Harvestore Products, Inc.	8,000
Clanton, D. C. (North Platte Station) - A. E. Staley Manufacturing Company	6,600	Rehm, G. (Northeast Station) - Allied Chemical	1,325
Compton, W. A. (Agronomy) - (International Multifoods) Lynks Seeds	200	Rehm, G. (Northeast Station) - Potash & Phosphate Institute	1,100
Compton, W. A. (Agronomy) - Stewart Hybrids, Inc.	50	Rehm, G. (Northeast Station) - Potash & Phosphate Institute	2,000
Compton, W. A. (Agronomy) - Callahan Enterprises, Inc.	40	Rhodes, M. B. (Veterinary Science) - AM Bio-Techniques, Inc.	152
Compton, W. A. (Agronomy) - Prairie Valley, Inc.	160	Roeth, F. W. (South Central Station) - Ciba-Geigy Corporation	500
Compton, W. A. (Agronomy) - Holden's Seeds	40	Roeth, F. W. (South Central Station) - E. I. DuPont deNemours Co., Inc.	750
Compton, W. A. (Agronomy) - Sokota Hybrids	40	Schnieder, R. D. (Ag Engineering) - International Harvester	500
Dickason, E. A. (Entomology) - Chevron Chemical Company	800	Shearman, R. C. (Horticulture) - O. J. Noer Research Foundation	2,000
Dickinson, E. O. (Veterinary Science) - Nebraska SPF Swine Accrediting Agency	1,381	Shearman, R. C. (Horticulture) - Rhone-Poulenc Inc.	750
Fenster, C. R. (Panhandle Station) - Shell Chemical Company	2,000	Underdahl, N. R. (Veterinary Science) - Philips Roxane Laboratories, Inc.	7,104
Fox, H. (Human Nutrition & Food Service Management) - Nebr. Dept. of Health	9,012	Van Etten, J. L. (Plant Pathology) - National Institutes of Health/DHHS	32,633
Gardner, C. O. (Agronomy) - Stauffer Chemical Company	2,000	Vidaver, A. K. (Plant Pathology) - Foundation for Agronomic Research	3,500
Gast, R. G. (Agronomy) - Hoegemeyer Enterprises, Inc.	12,600	Waller, S. S. (Agronomy) - Little Blue Natural Resources District	1,318
Gustafson, W. A. (Southeast Extension and Research) - Donation/Gift - Dean Foster Nurseries	32	Waller, S. S. (Agronomy) - Lower Republican Natural Resources District	675
Gustafson, W. A. (Southeast Extension and Research) - Donation/Gift - W. F. Allen Company	250	Waller, S. S. (Agronomy) - Middle Republican Natural Resources District	1,250
Hudson, D. (North Platte Station) - American Cyanamid Company	13,500	Waller, S. S. (Agronomy) - Lower Republican Natural Resources District	2,500
Johnson, R. J. and Timm, R. M. (Forestry, Fisheries & Wildlife) - North Central Regional Pesticide Impact Assessment Program	7,526	Ward, J. (Animal Science) - International Minerals & Chemical Corporation	787
Kamble, S. T. and Gold, R. E. (Environmental Programs) - North Central Regional Pesticide Impact Assessment Program	7,910	Watkins, J. E. (Plant Pathology) - Merck & Company	500
Kerr, E. D. (Panhandle Station) - Ciba-Geigy	800	Weiss, A. (Panhandle Station) - National Science Foundation	38,300
Klopfenstein, T. (Animal Science) - American Dehydrators Association	5,000	Wilson, R. G. (Panhandle Station) - Shell Chemical Company	1,000
		Wilson, R. G. (Panhandle Station) - Ciba-Geigy Corporation	500

NEBRASKA AGRICULTURAL EXPERIMENT STATION PUBLICATIONS - April 1981

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

6028. An Agronomic and Quantitative Genetic Study of European Corn Borer Resistance in Half-Sib Families from a Sorghum Random-Mating Population. W. M. Ross, S. D. Kindler, K. D. Kofoid, G. H. Hookstra, W. D. Guthrie and R. E. Atkins. *Crop Science*.
6029. Correction for Heat and Moisture Exchange in Computation of CO₂ Flux. D. D. Baldocchi, S. B. Verma and N. J. Rosenberg. *Agricultural Meteorology*.
6030. Characterization of Exudate Proteins Involved in Binding Meat Pieces into a Sectioned and Formed Beef Steak. A. M. Booren, R. W. Mandigo and D. G. Olson. *Journal of Food Science*.
6031. Effect of Muscle Type and Mixing Time on Sectioned and Formed Beef Steaks. A. M. Booren, R. W. Mandigo, D. G. Olson and K. W. Jones. *Journal of Food Science*.
6032. Vacuum Mixing Influence on Characteristics of Sectioned and Formed Beef Steak. A. M. Booren, R. W. Mandigo, D. G. Olson and K. W. Jones. *Journal of Food Science*.
6033. How Effective are Marriage Courses? Over 220 Former Students Tell Us What They Think. Dianne M. Gless and Barbara Chesser. *Journal of Home Economics*.
6034. Loneliness Among Low-Income, Single Adolescent Mothers. Barbara Chesser, John C. Woodward, Maxine Bauermeister and Anne M. Parkhurst. *Home Economics Research Journal*.
6035. Crisis Theory: A Case Study Approach. Barbara Jo Chesser and Nilufer P. Medora. *Family Perspective*.
6036. An Index for Field Evaluation or Selection of Cool Tolerance in Grain Sorghum (*Sorghum bicolor* (L.) Moench). M. D. Clegg, J. D. Eastin and L. A. Nelson. *Crop Science*.
6037. Effect of Range Condition on the Diet and Performance of Grazing Steers. David J. Powell, D. C. Clanton and J. T. Nichols. *Journal of Range Management*.
6038. Effect of Continuous Grazing on the Diet of Steers. David A. Yates, D. C. Clanton and J. T. Nichols. *Journal of Range Management*.
6039. Intraspecific Genetic Variation of *Quercus rubra* L. S. E. Schlarbaum and W. T. Bagley. *Silvae Genetica*.
6040. *In vitro* Enzymatic Methylation of TMV RNA. James L. White. *Federation of European Biochemical Societies Letters*. v119 (2):219-223, October, 1980.
6041. Selection for Lean Growth in Swine. Erik R. Cleveland, P. J. Cunningham and E. R. Peo, Jr. *Journal of Animal Science*.
6042. Herbage Yield of Fertilized Cool Season Grass-Legume Mixtures. R. D. Schultz and J. Stubbendieck. *Journal of Range Management*.

(over)

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

- 81-1487. Effect of Feeding Various Levels of "Dried" Fat and Protein in Growing-Finishing Swine. K. E. Keaschall, B. D. Moser, E. R. Peo, Jr. and A. J. Lewis. Journal of Animal Science.
- 81-1488. Effect of β -Carotene on Ovarian Activity and Conception Rates of Holstein Heifers Synchronized with Prostaglandin. J. Y. Wang, L. L. Larson and F. G. Owen. Journal of Animal Science.
- 81-1489. Factors Related to Placental Retention in Dairy Cattle. M. A. Ishak, L. L. Larson, F. G. Owen and S. R. Lowry. Journal of Animal Science.
- 81-1490. Influence of Feed Intake and Lean Growth Selection on Efficiency of Growth and Energy Digestibility in Swine. E. R. Cleveland, R. A. Pumfrey and E. R. Peo, Jr. Journal of Animal Science.
- 81-1491. Embryo and Fetal Loss in Gilts Differing in Ovulation Rate. R. K. Johnson, R. A. Pumfrey, A. P. K. Jones and Dwane R. Zimmerman. Journal of Animal Science.
- 81-1492. Effect of Monensin on the Performance of Heifers in a Growing-Finishing Program. D. B. Faulkner, J. K. Ward, M. S. Aseltine and T. J. Klopfenstein.
- 81-1493. Maximizing Forage Utilization in Beef Growing-Finishing Systems. D. B. Faulkner, J. K. Ward and T. J. Klopfenstein.
- 81-1494. Effect of Protein Sources on Performance of Mature Beef Cows in Early Lactation. G. Llamas-Lamas, J. K. Ward, J. E. Kinder and T. J. Klopfenstein.
- 81-1495. Techniques for Ammonia Treatment of Straw. J. K. Ward, G. Llamas-Lamas, D. B. Faulkner, T. J. Klopfenstein and I. G. Rush.
- 81-1496. Effect of Ammonia Level and Moisture Content on Treatment of Wheat Straw. G. Llamas-Lamas, J. K. Ward, T. J. Klopfenstein, R. Britton and I. G. Rush.
- 81-1497. Effects of Chopping Temperature on the Ultrastructure of Meat Emulsion as Viewed Through the Scanning Electron Microscope (SEM). K. W. Jones and R. W. Mandigo. Journal of Food Science.
- 81-1498. A Direct Double Antibody Radioimmunoassay Procedure for Serum Testosterone: Concentrations of Testosterone and LH in Testosterone-Infused Steers. M. J. D'Occhio, B. D. Schanbacher and J. E. Kinder. Journal of Animal Science.
- 81-1499. Endocrine Mechanisms Involved in the Regulation of the Pubertal Phase in the Beef Heifer. M. L. Day, J. E. Kinder, K. Imakawa, R. J. Kittok and B. D. Schanbacher. Journal of Animal Science.

BULLETINS PRINTED

- RB 287. Simulation Studies of Corn Hybrid-Climate Response. R. E. Nield and H. N. Richman.