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THE AGRICULTURAL EXPERIMENT STATION
INSTITUTE OF AGRICULTURE
AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA-LINCOLN 68583-0704

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Agricultural Experiment Station News

FROM THE DIRECTOR'S DESK

NC Region Directors Meet

The North Central Region Directors of Agricultural Experiment Stations met in mid-March at Wooster, Ohio for their spring meeting (one of three meetings annually). Dr. Woodward joined me in representing the Nebraska Station.

There was much concern and strategy planning relating to the 2.4% increase in federal Hatch funding proposed in the President's 1982-83 budget. This distressingly modest increase is the target of concerted efforts to cause Congress to increase it. There is considerable optimism that this effort can have some success although this will not be a "real" increase year. Two factors should be kept in mind for appropriate perspective.

1. Agricultural research is being treated very favorably compared to other programs and agencies—except defense.

2. Hatch funds account for only 8.3% of the Nebraska Station budget.

In spite of budget stresses in all the NC Stations, the general climate of the meeting was positive and optimistic. At the same time it was agreed that hard decisions relative to priorities and stronger initiatives in grants and contracts are essential to maintaining our research productivity.

The Ohio Station (OARDC) at Wooster is an impressive operation in terms of appearance, morale and programs.

Chancellor Massengale to Testify for Agriculture

On March 31 the NASULGC Agricultural Division Budget Committee on which I serve is scheduled to testify for the 1982-83 federal budget for all divisions before the U.S. House Appropriations Committee. The Committee of Nine representatives of University agricultural programs, including AES Directors Miller, Williamson and Kleis will be providing statements and responding to questions following an opening general statement by Chancellor Massengale.

Nebraska AES Funding Sources

The records of the last completed fiscal year (1981) show relative support for NAES research programs as follows:

State General Fund Appropriations	47.4%
Federal Formula Funds (Hatch)	8.3%
Revolving Funds	23.4%
Grants, Contracts and Cooperative Agreement	20.9%
	<hr/> 100.0%

R. W. Kleis
Acting Dean & Director

SAHS SEZ

The completion of the Field Laboratory's 20 year development grant with the Department of Health and Human Services (formerly DHEW) takes place April 12, 1982. An observance of this event will take place at 3:00 p.m., Friday, April 16th, at Load Line 2, Mead Field Laboratory. Eight departments will have OPEN HOUSE from 1:00 to 5:00 p.m. Shuttle vans will be provided within the Field Lab. We promise short speeches, hot coffee and delicious rolls. Mark your calendar and please join us in commemoration of this notable achievement.

The restructured Gudmundsen Sandhills Research Center Management Committee plans to meet monthly, or by means of conference calls. Members are Lavon Sumption, Chairman, John Weihing, Robert Gast, Irv Omtvedt, Robert Oltjen and Warren Sahs with Don Clanton, GSRC Coordinator, as an ex-officio member. It is hoped that the Management Committee can meet once a year with the GSRC Planning Committee.

Warren Sahs
Assistant Director

TRAVEL OPPORTUNITY - SPAIN

The United States - Spain Joint Committee for Scientific and Technological Cooperation has announced the availability of post-doctoral research grants and short term travel grants to Spain. The grant will have a maximum term of three months and a minimum of one month. Grants are available in the following areas: agriculture and natural resources, oceanography, environ-

ment, urban and regional planning, industrial technology, energy, biomedical sciences and basic sciences.

John C. Woodward
Assistant Director

GRANTS AND CONTRACTS

Anderson, F. N. (Scottsbluff Station) - American Crystal Sugar Company	1,800
Brink, D. R. (Animal Science) - Eli Lilly and Company	2,500
Britton, R. (Animal Science) - Eli Lilly and Company	4,000
Brumm, M. C. (Northeast Station) - National Pork Producers Council	750
Clanton, D. C. (North Platte Station) - Hoffman-LaRoche, Inc.	3,000
Danielson, D. M. (North Platte Station) - TH Agriculture & Nutrition Company	8,000
Dickinson, E. O. (Veterinary Science) - Nebraska SPF Swine Accrediting Agency	964
Eldridge, F. (Animal Science) - American Breeders Service	105
Eldridge, F. (Animal Science) - American Breeders Service	315
Ferguson, D. I. (Veterinary Science) - Pfizer Ag Division, Pfizer, Inc.	400
Flowerday, A. D. (Agronomy) - Olin Corporation	6,000
Gold, R. E. (Environmental Programs) - Merck & Company, Inc.	1,000
Gustafson, W. A. (Southeast Extension & Research Center) - Nebraska Nut Growers Association	500
Hudson, D. B. (North Platte Station) - International Minerals & Chemical Corporation	2,000
Hudson, D. B. (North Platte Station) - American Cyanamid Company	14,440
Kelling, C. L. (Veterinary Science) - Animal Vaccine Laboratory	500
Kies, C. V. (Human Nutrition & Food Service Management) - Ross Laboratories	35,000
Kleis, R. W. (Dean and Director's Office) - USDA/SEA/CR	184,801
Kleis, R. W. (Dean and Director's Office) - USDA/CSRS	83,458
Klopfenstein, T. (Animal Science) - Ajinomoto USA	5,000
Klopfenstein, T. (Animal Science) - Corn Products	5,000
Klopfenstein, T. (Animal Science) - Eli Lilly and Company	2,000
Klopfenstein, T. (Animal Science) - Fats and Proteins Research Foundation	22,000
Mandigo, R. (Animal Science) - University of Nebraska Foundation	623
O'Keefe, R. B. (Panhandle Station) - Potato Chip Snack Food Association	845
O'Keefe, R. B. (Panhandle Station) - University of Arizona	570
Olson, R. A. (Agronomy) - Phillips Chemical Company	10,000
Rhodes, M. B. (Veterinary Science) - Dellen Laboratories	803
Shahani, K. M. (Food Science & Technology) - Casey Products, Inc.	125
Shearman, R. C. (Horticulture) - Nebraska Turfgrass Foundation	2,000
Shelton, D. P. (Northeast Station) - Nebraska Pork Producers Association, Inc.	1,600
Sullivan, T. W. (Animal Science) - International Minerals & Chemical Corporation	2,500
Wicks, G. A. (North Platte Station) - Shell Development Company	2,000
	404,599

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

6822. Genetic Variations and Gene Effects Controlling Prolificacy and Other Traits in Corn (*Zea mays* L.). C. O. Gardner, P. Z. Guo and M. Obaidi. Crop Science.
6823. Investigations of Host-plant Resistance to the European Corn Borer in Sorghum. R. E. Atkins, W. D. Guthrie, W. M. Ross and S. D. Kindler. Iowa State Journal of Research.
6824. Effects of 2,4-D on Growth and Yield of Corn Genotypes. R. S. Moomaw and F. W. Roeth. Agronomy Journal.
6825. Intra- and Interspecific Variation of *Juniperus virginiana* L. and *J. scopulorum* Sarg. Seedlings Based on Volatile Oil Composition. C. W. Comer, Robert P. Adams and David F. Van Haverbeke. Journal of Biosystematics & Ecology.
6826. Comparison of Seedbed Preparations & Planters for Proso Millet Following Wheat. L. A. Nelson and C. R. Fenster. Agronomy Journal.
6827. Characterization and Seasonal Distribution of Breeding Sites of Stable Flies and House Flies on Eastern Nebraska Feedlots and Dairies. Jeff A. Meyer and James J. Petersen. Journal of Economic Entomology.
6828. Effect of Type of Incomplete Factorial Treatment Arrangement on Agronomic Conclusions. R. C. Sorensen. Agronomy Journal.
6829. An Assessment of the Attitudes of School Superintendents, Agriculture Teachers, Advisory Council Chairpersons, Vocational Agriculture Graduates and their Employers, of the Nebraska Vocational Agriculture Core Curriculum. Roy D. Dillon. Journal of the American Association of Teacher Educators in Agriculture.
6830. Influence of Propagating Materials, Fertilizer Rates, and Other Factors on *Liatris pycnostachya* Michx. cv. Eureka. Sotero S. Salac and Jay B. Fitzgerald. Journal of American Society for Horticultural Science.
6831. Heritabilities, Genetic, Environmental and Phenotypic Correlations of Carcass Traits in a Population of Diverse Biological Types and Their Implications in Selection Programs. R. M. Koch, L. V. Cundiff and K. E. Gregory. Journal of Animal Science.
6832. Germination Responses of Sweetclover Seed to Infrared, Radiofrequency, and Gas-Plasma Electrical Treatments. S. O. Nelson, L. E. Stetson, D. W. Works and C. A. Pettibone. Seed Science and Technology.
6833. Formation and Control of Mycotoxins in Food. Lloyd B. Bullerman, Lisa L. Ray and Kun-Young Park. Journal of Food Protection.
6834. Genetic Aspects of Conservation in Farm Livestock. Charles Smith. European Association of Animal Production.
6835. Effect of Rate and Time of Gain After Weaning on the Development of Replacement Beef Heifers. D. C. Clanton, L. E. Jones and M. E. England. Journal of Animal Science.

6836. Influence of Leaf Pubescence on the Mass and Energy Exchange Between Soybean Canopies and the Atmosphere. D. D. Baldocchi, S. B. Verma, N. J. Rosenberg, B. L. Blad, A. Garay and J. E. Specht. *Agronomy Journal*.
6837. Combining Ability Effects for Forage Residue Traits in Grain Sorghum Hybrids. W. M. Ross, H. J. Gorz, F. A. Haskins, G. H. Hookstra, J. K. Rutto and R. Ritter. *Crop Science*.
6838. Estimation of True Moments from Truncated Data. Joseph M. Skopp. *American Institute of Chemical Engineers, Journal*.
6839. Role of Insulin in Regulating Amino Acid Metabolism in Normal and Alloxan Diabetic Cattle. R. L. Prior and S. B. Smith.
6840. Metabolic Responses to Alloxan Diabetes, Insulin and Glucose in the Bovine. R. L. Prior and S. B. Smith.
6841. Injury Responses of Grain Sorghum (*Sorghum bicolor*) to Chloroacetanilide Herbicides as Affected by Cyoxmetrinil Seed Treatment. Fred W. Roeth, Orvin C. Burnside and Gail A. Wicks. *Agronomy Journal*.
6842. Role of Insulin in the Regulation of Lipid Metabolism in Normal and Alloxan Diabetic Cattle. S. B. Smith, R. L. Prior and H. N. Mersmann.
6843. Fate of *Escherichia coli* and *Salmonella typhimurium* in a Food Film on Stainless Steel at 5 C. R. L. Dyer and R. B. Maxcy. *Journal of Food Protection*.
6844. *Kochia scoparia* Growth Response to Triazine Herbicides. Craig R. Salhoff and Alex R. Martin. *Weed Science*.
6845. Critical Analysis of Selection Methods and Experiments in Beef Cattle and Consequences Upon Selection Programs Applied. R. M. Koch, K. E. Gregory and L. V. Cundiff. *Proceedings, 2nd World Congress on Genetics Applied to Livestock Production*.
6846. Degradation of Thiocarbamate Herbicides in Soils Exhibiting Rapid EPTC. Tim Obrigawitch, Alex R. Martin and Fred W. Roeth. *Weed Science*.
6847. Simulating the Impact of Water Stress on Grain Yield. D. L. Martin, D. G. Watts, J. R. Gilley and R. J. Supalla. *Southwestern Review of Management and Economics*.
6848. Fee Hunting in Nebraska - An Alternative. T. O. Dill, J. Menghini, S. S. Waller and R. Case. *Rangelands*.
6849. Pubertal Development of the Boar: Testosterone, Estradiol-17 β , Cortisol and LH Concentrations Before and LH Concentrations After Castration at Various Ages. R. D. Allrich, R. K. Christenson, J. J. Ford and Dwane R. Zimmerman. *Journal of Animal Science*.
6850. Compatibility of Solar Home Heating Systems with Values, Felt Needs and Past Experiences. E. Raedene Combs and Charles S. Madden. *Home Economics Research Journal*.

6851. Effect of Water Quality, Carrier Volume, and Added Acid on Glyphosate Phytotoxicity. Douglas D. Buhler and Orvin C. Burnside. *Weed Science*.
6852. Physiological Aspects of High Temperature and Water Stress. J. D. Eastin, R. M. Castleberry, T. J. Gerik, J. H. Hultquist, V. Mahalakshmi, V. B. Ogunlela and J. R. Rice. The National Science Foundation Problems Analysis Group.
6853. Comparative Antimycotic Effects of Selected Herbs, Spices, Food Components and Commercial Antifungal Agents. Muftah A. Azzouz and Lloyd B. Bullerman. *Journal of Food Protection*.
6854. Coping Behaviors of Parents of Mentally Retarded Individuals. L. Schwab and J. Claybaugh. *American Journal of Mental Deficiency*.
6855. *Kochia scoparia* Biotypes: Atrazine Uptake, Translocation, Metabolism, and Chloroplast Thylakoid Responses. Craig R. Salhoff, Alex R. Martin, Lloyd C. Haderlie and Duane Tupy. *Weed Science*.

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

- 82-1702. Age at Puberty in Swine as Influenced by Photoperiod and Light Intensity. C. R. Kelly, M. E. Wise and Dwane R. Zimmerman. *Journal of Animal Science*.
- 82-1703. Oats and Corn Cobs as Fiber Sources in Early Lactation Dairy Rations. J. E. Meader, F. G. Owen, L. L. Larson and S. R. Lowry. *Journal of Dairy Science*.
- 82-1704. Genetic Components of Reproduction in Sheep. N. M. Fogarty, G. E. Dickerson and L. D. Young. *Journal of Animal Science*.
- 82-1705. Effect of Aluminum: Fluorine Ratios on the Bioavailability of Phosphorus from Raw Rock Phosphate for G-F Swine. E. R. Peo, Jr., A. J. Lewis and J. D. Crenshaw. *Journal of Animal Science*.
- 82-1706. Influence of Energy Intake During Lactation on Subsequent Gestation, Lactation and Postweaning Performance of Sows. D. E. Reese, B. D. Moser, E. R. Peo, Jr., A. J. Lewis, Dwane R. Zimmerman, J. E. Kinder and W. W. Stroup. *Journal of Animal Science*.
- 82-1707. Effect of Dietary Arginine: Lysine Ratios on Performance and Carcass Composition of Growing-Finishing Swine. L. C. Anderson, A. J. Lewis, E. R. Peo, Jr. and J. D. Crenshaw. *Journal of Animal Science*.
- 82-1708. Sorbic Acid as a Mold Inhibitor in High Moisture Sorghum Grain Diets Fed to Weanling Pigs. J. D. Crenshaw, E. R. Peo, Jr. and A. J. Lewis. *Journal of Animal Science*.
- 82-1709. Chelated Zinc for Baby Pigs. D. A. Hill, E. R. Peo, Jr. and A. J. Lewis. *Journal of Animal Science*.
- 82-1710. Weaning Weight Response of Pigs Fed Simple and Complex Diets. L. V. Himmelberg, E. R. Peo, Jr. and A. J. Lewis. *Journal of Animal Science*.

- 82-1711. Subsequent Performance of Varying Weight Weanling Pigs Fed Complex Diets During the Starter Phase of the Life Cycle. L. V. Himmelberg, E. R. Peo, Jr. and A. J. Lewis. Journal of Animal Science.
- 82-1712. Evaluation of Threonin and Isoleucine as the Third and Fourth Limiting Amino Acids in Corn for Young Pigs. A. J. Lewis, D. A. Grosbach and E. R. Peo, Jr. Journal of Animal Science.
- 82-1713. Effects of Restriction and Source of Energy Intake During Lactation on Sow and Litter Performance. J. L. Nelssen, A. J. Lewis, B. D. Moser, E. R. Peo, Jr. and J. D. Crenshaw. Journal of Animal Science.
- 82-1714. Effect of Aluminum on the Bioavailability of Phosphorus from Raw Rock Phosphate for G-F Swine. E. R. Peo, Jr., A. J. Lewis, J. D. Crenshaw and L. V. Himmelberg. Journal of Animal Science.
- 82-1715. Corn Cobs as a Fiber Source in Dairy Rations. E. E. Hawkins, F. G. Owen, L. L. Larson and J. E. Meader. Journal of Dairy Science.
- 82-1716. Rheological and Textural Properties of Meat Emulsions Prepared with Collagen. K. W. Jones, W. D. Snyder, R. W. Mandigo and C. R. Calkins. Journal of Animal Science.
- 82-1717. Effects of Varying Collagen Levels on the Emulsion Properties of Sausage Batters. K. W. Jones, W. D. Snyder, R. W. Mandigo and C. R. Calkins. Journal of Animal Science.
- 82-1718. Protein Extraction from Coarse Pre- and Post-rigor Beef and Pork. F. P. Coon, C. R. Calkins and R. W. Mandigo. Journal of Animal Science.
- 82-1719. Effects of Processing Temperature and Storage on the Shelf Stability of Spreadable Liver Pate'. W. D. Snyder, R. W. Mandigo and C. R. Calkins. Journal of Animal Science.
- 82-1720. Predicting Total Ether Extracted Fat in the Pork Carcass Using X-ray Analysis and Selected Carcass Traits. J. W. Lamkey, C. R. Calkins and R. W. Mandigo. Journal of Animal Science.
- 82-1721. The Effect of Buffers on Fiber Digestion *in vivo*. K. A. DeHaan, T. J. Klopfenstein, O. A. Turgeon, R. A. Britton and D. R. Brink. Journal of Animal Science.
- 82-1722. Effect of Suckling and Ovariectomy on LH Concentrations During the Postpartum Period in the Beef Cow. M. Garcia-Winder, R. J. Kittok, M. L. Day, K. Imakawa, B. D. Schanbacher and J. E. Kinder. Journal of Animal Science.
- 82-1723. Endocrine Mechanisms Regulating the Pubertal Phase of the Beef Heifer. Michael L. Day, K. Imakawa, M. Garcia-Winder, R. J. Kittok, B. D. Schanbacher and J. E. Kinder. Journal of Animal Science.
- 82-1724. Response of Beef Cattle to Lasalocid on High Fiber and Finishing Rations. W. F. Brown, T. J. Klopfenstein, J. K. Merrill and D. R. Brink. Journal of Animal Science.

- 82-1725. Level and Source of Calcium for Ruminants Being Adjusted to High Energy Diets. R. Britton, R. Young, D. Brink, D. Harmon and J. Amend. Journal of Animal Science.
- 82-1726. Effect of Monensin in Steers Fed a High Concentrate Diet in Initial 28 Adaptation and Overall Finishing Performance. D. G. Burrin, R. A. Britton and D. R. Brink. Journal of Animal Science.
- 82-1727. Effect of Monensin Level on Ruminal Fiber and Nitrogen Utilization. D. B. Faulkner, T. J. Klopfenstein and R. A. Britton. Journal of Animal Science.
- 82-1728. Development of Negative and Positive Feedback Regulation of LH and FSH Release in the Prepubertal Gilt. M. E. Wise and Dwane R. Zimmerman. Journal of Animal Science.
- 82-1729. Levels of Soybean Hulls and Corn on Steer Performance. M. L. McDonnell, T. J. Klopfenstein and J. K. Merrill. Journal of Animal Science.
- 82-1730. Protein Supplementation and Ammoniation of Wheat Straw for Growing Steers. M. L. Nelson, I. G. Rush and T. J. Klopfenstein. Journal of Animal Science.
- 82-1731. Rate of Winter Gain and Time on Pasture on Subsequent Feedlot Gain and Carcass Characteristics of Steers and Heifers. O. A. Turgeon, Jr., D. R. Brink, T. J. Klopfenstein, J. K. Ward, H. D. Loveday, C. R. Calkins and M. K. Nielsen. Journal of Animal Science.
- 82-1732. Whey as a Source of Rumen Degradable Protein for Growing Ruminants. R. Stock, T. Klopfenstein and D. Brink. Journal of Animal Science.
- 82-1733. Feeding of Whey to Stimulate Microbial Protein Production. R. Stock, T. Klopfenstein and R. Britton. Journal of Animal Science.
- 82-1734. Treatment of Wheat Straw with Different Alkalise. E. Owen, T. J. Klopfenstein, R. A. Britton, K. Rump and M. McDonnell. Journal of Animal Science.
- 82-1735. Ammoniation and Protein Supplementation of Corn Cobs. M. L. Nelson, T. J. Klopfenstein, R. A. Britton and S. R. Lowry. Journal of Animal Science.
- 82-1736. Potential Tolerance of *Penicillium digitatum* and *Penicillium italicum* After Repeated Exposure to Potassium Sorbate. L. L. Ray and L. B. Bullerman. Annual Meeting of the American Society for Microbiology, 1982.
- 82-1737. Kentucky Bluegrass Billbug (*Sphenophorus parvulus*) Larval Density and Turfgrass Injury in Response to Mowing Height and Nitrogen Nutrition. D. M. Bishop, R. C. Shearman, A. H. Bruneau and J. A. Jones. Agronomy Abstracts.
- 82-1738. Seeding Depth Effects on Seedling Emergence of Kentucky Bluegrass Cultivars. T. P. Riordan, R. C. Shearman, A. H. Bruneau and E. J. Kinbacher. Agronomy Abstracts.
- 82-1739. Salt Tolerance of Turfgrass Species and Cultivars. E. J. Kinbacher, R. C. Shearman, T. P. Riordan and D. E. Vanderkolk. Agronomy Abstracts.

- 82-1740. Lateral Growth and Disease Susceptibility of Kentucky Bluegrass (*Poa pratensis*) Cultivars Exposed to Compaction Stress. R. C. Shearman, J. E. Watkins, E. J. Kinbacher and T. P. Riordan. Agronomy Abstracts.
- 82-1741. Nitrogen Carrier, Rate & Placement Influence on Sod Transplant Rooting. A. H. Bruneau, R. C. Shearman, E. J. Kinbacher and W. M. Knoop. Agronomy Abstracts.
- 82-1742. Water Relations of Mycorrhizal Cottonwood. M. D. Coleman, J. R. Brandle and W. R. Lovett. Proceedings, 7th North American Forest Biology Workshop.
- 82-1743. Relationships Among Estimates of Pork Carcass Measurements. W. T. Ahlschwede, R. K. Johnson and R. W. Mandigo. Journal of Animal Science.
- 82-1744. Effect of Dietary Protein on Growth Rate, Carcass Merit and Reproduction of Lines Selected for Lean Growth Rate Under Two Nutritional Regimes. S. R. Williams, P. J. Cunningham, E. R. Peo, Jr., and R. K. Johnson. Journal of Animal Science.
- 82-1745. Analysis of Nebraska Swine Field Records: Selection Practices and Genetic Trends. P. J. David and R. K. Johnson. Journal of Animal Science.
- 82-1746. Pubertal Development of the Boar: Age-related Changes in Testicular in vitro Estradiol-17 β Production. R. D. Allrich, R. K. Christenson and Dwane R. Zimmerman. Biology of Reproduction.
- 82-1747. Pre- and Post-rigor Sectioned and Formed Beef Steaks Manufactured with Different Salt Levels, Mixing Times and Tempering Times. F. P. Coon, C. R. Calkins and R. W. Mandigo. Proceedings of the Reciprocal Meat Conf.
- 82-1748. Effects of Storage and Processing Temperature on the Rheological Properties of Liver Pate'. W. D. Snyder, K. W. Jones, R. W. Mandigo and C. R. Calkins. Proceedings of the Reciprocal Meat Conference.
- 82-1749. Individual Differences in LH Responses to Castration and Testosterone Replacement Therapy in Male Sheep. M. J. D'Occhio, B. D. Schanbacher and J. E. Kinder. Journal of Animal Science.
- 82-1750. Differential Effects of Photoperiod on LH and Testosterone Responses to LHRH in Rams. M. J. D'Occhio, B. D. Schanbacher and J. E. Kinder. Endocrinology.
- 82-1751. Breed Differences in Serum LH Profiles of Rams Exposed to Contrasting Short and Long Photoperiods. Michael J. D'Occhio, B. D. Schanbacher and J. E. Kinder. Biology of Reproduction.
- 82-1752. Clinical Manifestations and Laboratory Findings Associated with Long Term Feeding of Sudan Grass to Cattle. Norman R. Schneider. Proceedings of the AVMA Annual Meeting.
- 82-1753. Effects of Seeding Dates of Field Establishment of 12 Species of Wildflowers. Sotero S. Salac. HortScience.