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ARD News August 1992

Agricultural Research Division News

The Institute of Agriculture and Natural Resources

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COMMENTS FROM THE DEAN

Dear Colleagues:

During the past three years, ARD has been assembling data regarding resources provided to units, grants obtained by units and performance characteristics of units. This information has been summarized to provide a historical perspective on the progress units are making toward achieving both ARD and unit goals. The data also assists units in establishing goals and in identifying those areas where emphasis should be placed to increase overall unit productivity.

All data are summarized on a "per FTE" basis so that an overall ARD average can be calculated and some comparisons of units can be made. All units are provided with the indicators for their units and the ARD averages. The unit administrators are free to use the information in any manner that they deem appropriate for improving the unit's research program. None of the data refer to individual performance and the unit averages should not be considered as the "standard" for all faculty members in the unit. For example, if the average grant income for a unit was $50,000 per research FTE, we would not expect that all faculty members in the unit would feel obligated to obtain the average level of grant income each year. We realize that opportunities for grant income vary greatly between disciplines and within subject areas in a given discipline.

Unit or ARD averages should not necessarily become goals for faculty members in a unit. Individual output goals should be jointly agreed to by the unit administrator and the faculty member and should reflect the individual's assignment, program area, rank, availability of resources, and other intangible factors. By summarizing unit performance data, ARD does not want to establish output standards for faculty members or to become excessively bureaucratic.

Darrell W. Nelson
Dean and Director

FY1993 CSRS BUDGET OUTLOOK

The Agriculture Subcommittees of the House and Senate Appropriations Committees have "marked up" the USDA budget for FY 1993. Listed below are FY 1992 appropriations and House and Senate proposed FY 1993 funding levels for CSRS research programs. Any differences between the House and Senate versions will be rationalized in the conference committee process. We are disappointed that Congress will appropriate funds for FY 1993 that are similar to those provided in FY 1992.

Program	*FY92 Actual*	*FY93 House*	*FY93 Senate*
	- - - - - thousands of dollars - - - - -		
Base Funds:			
Hatch Act	168,785	168,758	168,758
McIntire-Stennis	18,533	18,533	18,533
Animal Health	5,551	5,551	5,551
National Research Init.	97,500	97,500	97,500
Special Grants	73,979	57,151	61,612
Other Programs:			
Critical Ag Mat.	400	400	400
Rangeland Research	475	475	475
Aquaculture Center	4,000	4,000	4,000
Sustainable Ag	6,725	6,725	6,725
Alternative Crops	1,168	1,168	500
Ag Weather Inform.	400	0	400

UNIVERSITY OF NEBRASKA FOUNDATION AWARDS

Each year the University of Nebraska Foundation provides about $400,000 to the University of Nebraska System for support of "cutting edge" programs of special interest to Nebraskans. Traditionally most of the funding has been used to purchase research equipment. This year the great bulk of funding was provided for innovative teaching programs. The only research grant provided to UNL was awarded to Dr. Raul Barletta of the Department of Veterinary Science in support of a proposal entitled **"Improved Biological Detection by Luminometry".**

Congratulations to Dr. Barletta and other faculty in the Veterinary Science Department who contributed to development of the proposal. ARD also thanks all faculty who submitted proposals to the UN Foundation grant program.

ARD ADVISORY COUNCIL ELECTION RESULTS

As a result of recent elections, the following individuals were selected to serve on the Agricultural Research Division Advisory Council for a three-year period:

District 3: **David Mortensen (Agronomy)** - Representing faculty in the Department of Agronomy.

District 4: **Ken Hubbard (Agricultural Meteorology)** - Representing faculty in the Departments of Agricultural Meteorology, Environmental Programs, Entomology, and Horticulture.

District 9: **David Baltensperger (Panhandle R & E Center)** - Representing the faculty in the Panhandle and West Central R & E Centers.

Returning ARD Advisory Council Members are:

District 1: **John Rupnow (Food Science and Technology)** - Representing faculty in the Departments of Agricultural Economics and Food Science and Technology.

District 2: **Dean Eisenhauer (Biological Systems Engineering)** - Representing faculty in the Department of Biological Systems Engineering and the Northeast and South Central R & E Centers.

District 5: **Chris Calkins (Animal Science)** - Representing faculty in the Department of Animal Science.

District 6: **Edward Peters (Forestry, Fisheries and Wildlife)** - Representing faculty in the Departments of Biometry; Forestry, Fisheries and Wildlife; and Veterinary Science.

District 7: **James Partridge (Plant Pathology)** - Representing the faculty in the Departments of Biochemistry and Plant Pathology.

District 8: **Julie Albrecht (Nutritional Science and Hospitality Management)** - Representing faculty in the Departments of Agricultural Leadership, Education and Communications; Consumer Science and Education; Human Development and the Family; Nutritional Science and Hospitality Management; and Textiles, Clothing and Design.

The Agricultural Research Division appreciates the dedicated service and contributions to the Council by the outgoing members - **Pat Shea, Shashi Verma, and Jack Campbell.**

HARDIN DISTINGUISHED GRADUATE FELLOWSHIP FOR 1992-1993

The recipient of the Hardin Distinguished Graduate Fellowship for 1992-1993 is **Robert K. D. Peterson** from the Entomology Department. This particular fellowship is made possible by an endowment established at the University of Nebraska Foundation by former University of Nebraska Chancellor Clifford Hardin to support outstanding graduate students doing research in plant physiology.

Robert Peterson is completing his Ph.D. in plant stress physiology associated with biotic stressors. His research project focuses specifically on physiological responses of plants to arthropod-induced leaf injury. Dr. Leon Higley in the Department of Entomology is his advisor.

WIDAMAN TRUST DISTINGUISHED GRADUATE ASSISTANT AWARD

The Widaman Trust was established in 1975 through a generous gift provided to the University of Nebraska Foundation by Ms. Blanch Widaman. Ms. Widaman asked that the income from the trust be used by UNL for basic research in agriculture and the funds support people rather than purchase supplies and/or equipment. She suggested that the money be used for scholarships or fellowships for graduate students conducting basic research in agriculture.

The criteria established for the Widaman Trust Distinguished Graduate Assistant Award specifies that only 5% of the graduate students in a department can receive the recognition and that the awardees must demonstrate outstanding scholarship and excellence in research. We congratulate the following graduate students for receiving the Widaman Trust Distinguished Graduate Student Award for 1992-1993:

Name:	Hee Seong Kim
Thesis area:	Risk Management
Department:	Agricultural Economics
Advisor:	D. Conley
Name:	Patricia Mielnick
Thesis area:	Ag Meteorology
Department:	Agricultural Meteorology
Advisor:	S. Verma & T. Arkebauer
Name:	Steven Lonergan
Thesis area:	Meat Science
Department:	Animal Science
Advisor:	C. Calkins & M. Koohmaraie
Name:	Nestor J. Gonzalez
Thesis area:	Poultry Nutrition
Department:	Animal Science
Advisor:	T. Sullivan
Name:	Timothy Wester
Thesis area:	Ruminant Nutrition
Department:	Animal Science
Advisor:	Robert Britton
Name:	Naoto Kojima
Thesis area:	Reproductive Physiology
Department:	Animal Science
Advisor:	James Kinder

Name: Elizabeth A. Smith
Thesis area: Soil Science/Weed Science
Department: Agronomy
Advisor: P. Shea & W. Powers

Name: Vicki A. Gustafson
Thesis area: Plant Breeding & Genetics
Department: Agronomy
Advisor: P. S. Baenziger

Name: Gandoul I. Gandoul
Thesis area: Crop Physiology
Department: Agronomy
Advisor: J. Eastin

Name: Laura E. Oberthur
Thesis area: Plant Breeding
Department: Agronomy
Advisor: P. S. Baenziger

Name: Mirghani Mohamed
Thesis area: Crop Physiology/Production
Department: Agronomy
Advisor: M. Clegg

Name: Paul W. Stoker
Thesis area: Enzymology
Department: Biochemistry
Advisor: Marion O'Leary

Name: Martin Norton
Thesis area: Soil and Water Engineering
Department: Biological Systems Engineering
Advisor: Dean Eisenhauer

Name: Kevin Holtorf
Thesis area: Systems Modeling
Department: Biological Systems Engineering
Advisor: D. Jones

Name: Clifford A. Hall III
Thesis area: Antioxidants
Department: Food Science & Technology
Advisor: Susan Cuppett

Name: Laura A. Uhlman
Thesis area: Food Microbiology
Department: Food Science & Technology
Advisor: John Rupnow

Name: Hehui Zhang
Thesis area: Physiology
Department: Forestry, Fisheries & Wildlife
Advisor: James Brandle

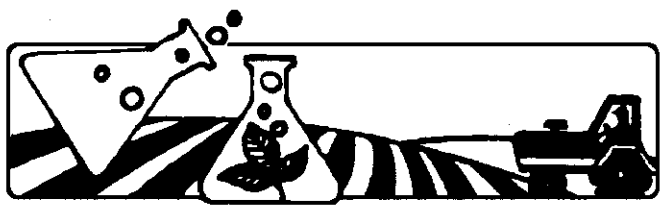
Name: Jennifer Johnson-Cicalese
Thesis area: Turfgrass Breeding
Department: Horticulture
Advisor: T. Riordan &, F. Baxendale

Name: Nataraj Chandrasekraran
Thesis area: Immunology
Department: Veterinary Science
Advisor: S. Srikumaran

Name: Luis Schang
Thesis area: Virology
Department: Veterinary Science
Advisor: F. Osorio

SUSTAINABLE AGRICULTURE GRANTS AVAILABLE

The North Central Region of the Sustainable Agriculture Research and Education Program will award approximately $900,000 in competitive grants for FY-93 in the Low-input Sustainable Agriculture (LISA) research and education program. This year approximately 25% of the funds have been allocated to special areas of interest: 1) implication and utilization of the sustainable agriculture provisions of the 1990 Farm Bill, and 2) community development focused on sustainable agriculture. There will be an additional $440,000 allocated under the Agriculture in Concert with the Environment (ACE) grant program focusing on preventing agricultural pollution and enhancing diverse and abundant fish and wildlife. A third competitive grant program, which is unique to the North Central Region and offered for the first time, is available for producers to identify obstacles to their conversion from conventional to a more sustainable agricultural system and develop strategies to address the problems. This program has $100,000 available for approximately 20 mini grants. All of these grant programs have a September 4, 1992 deadline.



GRANTS AND CONTRACTS RECEIVED JUNE & JULY, 1992

Agricultural Meteorology	
Wilhite, D. A. - U.N. Environment Programs	30,000
Agronomy	
Andrews, D. J. - AID	113,400
Clegg, M. D. - AID	8,100
Eastin, J. D. - AID	40,500
Maranville, J. W. - AID	45,360
Mason, S. C. - AID	58,725
Mortensen, D. A. - USDA/ARS	30,000
Shearman, R. C. - USDA/ARS	40,000
Sullivan, C. Y. - AID	14,838
Miscellaneous grants under $5,000 each	62,775
Animal Science	
Grotjan, H. E. - NSF	76,000
Keown, J. F. - Nat'l Ass'n of Animal Breeders	10,000
Klopfenstein, T. J. - Nebraska Ethanol Authority	16,375
Klopfenstein, T. J. - Syntex Animal Health	16,500
Lewis, A. J. - Lilly Research Laboratories	28,400
Miscellaneous grants under $5,000 each	22,514
Biochemistry	
O'Leary, M. H. - NIH	133,846
Biological Systems Engineering	
Miscellaneous grants under $5,000 each	1,651
Entomology	
Miscellaneous grants under $5,000 each	20,080

Environmental Programs	
Miscellaneous grants under $5,000 each	3,000
Food Science & Technology	
Miscellaneous grants under $5,000 each	1,434
Forestry, Fisheries & Wildlife	
Hoagland, K. D. - Nebr. Dept. of Environmental Control	8,340
Hoagland, K. D., Peters, E. J., Savidge, J. A., Seibert, T. F., Brandle, J. R., Case, R. M., Holland, R. S., & Hygnstrom, S. E. - U.S. Fish & Wildlife Service	194,000
Miscellaneous grants under $5,000 each	22,156
Horticulture	
Riordan, T. P. - Nat'l Turfgrass Evaluation Program	6,000
Miscellaneous grants under $5,000 each	13,980
Industrial Ag Products Center	
Hanna, M. A. - NEOS System	24,900
Miscellaneous grants under $5,000 each	7,375
Northeast Research & Extension Center	
Miscellaneous grants under $5,000 each	15,500
Panhandle Research & Extension Center	
Smith, J. A. - John Deere Company	8,000
Miscellaneous grants under $5,000 each	46,041
Plant Pathology	
Mitra, A. & Dickman, M. - Midwest Plant Biotechnology Consortium - Purdue University	83,750
Yuen, G. - UN Foundation - Sampson Endowment	9,000
Miscellaneous grants under $5,000 each	500
South Central Research & Extension Center	
Miscellaneous grants under $5,000 each	24,750
Veterinary Science	
Chen, Swey-Shen Alex - Nebr. Dept. of Health	28,800
Jones, C. - National Cancer Institute	77,330
Miscellaneous grants under $5,000 each	23,549
West Central Research & Extension Center	
Adams, D. C. - UN Foundation - Sampson Endowment	7,500
Miscellaneous grants under $5,000 each	22,161
Grand Total	**1,397,130**

NEW OR REVISED PROJECTS

The following station projects were approved recently by the USDA Cooperative State Research Service:

10-117 (Ag Economics) Factors Affecting the Evolution of World Agricultural Markets: Implications for U.S. Policy
Investigator: E. W. F. Peterson
Status: New Hatch project effective November 12, 1991

12-218 (Agronomy) Soil and Crop Management Practices for Erosion Control and Sustained Productivity
Investigator(s): J. W. Doran, L. N. Mielke, W. W. Wilhelm, J. R. Ellis, J. F. Power, and J. E. Gilley
Status: New State project effective March 1, 1992

12-219 (Agronomy) Management of Soil, Water, and Nitrogen Resources to Protect Ground Water Quality
Investigator(s): J. S. Schepers, W. W. Wilhelm, L. E. Stetson, G. E. Varvel, J. W. Doran and J. F. Power
Status: New State project effective March 1, 1992

12-221 (Agronomy) Physiology, Growth, and Development of Selected Perennial Forage Grasses
Investigator: L. E. Moser
Status: New Hatch project effective May 6, 1992

12-222 (Agronomy) Physiological Eval. of Cultural & Genetic Factors Influencing Seasonal & Instantaneous WUE
Investigator: J. E. Eastin
Status: New Hatch project effective June 30, 1992

13-087 (Animal Science) Uterine Function in the Bovine with Luteal Phase Deficiency
Investigator: J. E. Kinder
Status: Revised Animal Health project effective October 1, 1992

13-114 (Animal Science) Feed Quality Improvement of Sorghum Grain
Investigator(s): R. A. Britton, R. A. Stock, J. F. Pedersen, K. J. Moore, and D. J. Andrews
Status: New State project effective July 1, 1992

14-066 (Veterinary Science) Functional Analysis of the BHV-1 Latency Related Gene
Investigator: C. Jones
Status: New Hatch project effective May 13, 1992

14-067 (Veterinary Science) Evaluation and Modulation of Bovine Immune Function
Investigator: L. J. Perino
Status: New State project effective June 1, 1992

15-063 (Biochemistry) Enzymology of Anaerobic CO2 Fixation and Bioremediation
Investigator: S. W. Ragsdale
Status: New Hatch project effective June 1, 1992

16-061 (Food Science and Technology) Utilization of Poultry Skin
Investigator(s): G. W. Froning, R. W. Mandigo, S. S. Sumner, C. L. Weller and S. L. Cuppett
Status: New State project effective July 1, 1992

19-002 (Food Processing Center) Development and Quality/Safety Enhancement of Specialty Food Products
Investigator(s): S. L. Taylor and D. A. Neumeister
Status: New Special Grant effective May 1, 1992

19-003 (Food Processing Center) Development and Evaluation of Food Products, Processes and Markets
Investigator: S. L. Taylor
Status: New State project effective June 1, 1992

20-053 (Horticulture) Breeding & Development of Buffalograss & Other Low Maintenance Species for the Central Great Plains
Investigator: T. P. Riordan
Status: New Hatch project effective July 1, 1992

26-020 (Forestry, Fisheries & Wildlife) Evaluation of Environmental Factors and Fish Species for Aquaculture Development in Nebraska
Investigator: T. B. Kayes
Status: New Hatch project effective May 8, 1992

29-002 (Industrial Ag Products Center) Investigating Milkweed as an Alternative Source of Fiber
Investigator: M. A. Hanna
Status: New Special Grant effective July 1, 1992

42-019 (Northeast Research & Extension Center) Increasing Fertilizer Efficiency in Northeast Nebraska
Investigator: C. A. Shapiro
Status: New Hatch project effective May 1, 1992

43-054 (West Central Research & Extension Center) Evaluation of Management Practices to Improve Reproductive Efficiency of Beef Heifers
Investigator(s): G. H. Deutscher and D. C. Adams
Status: New Hatch project effective May 1, 1992

44-035 (Panhandle Research & Extension Center) Feed Resources and Beef Production Systems in Western Nebraska to Optimize Total Efficiency
Investigator(s): I. G. Rush and B. Weichenthal
Status: Revised Hatch project effective May 1, 1992

44-045 (Panhandle Research & Extension Center) Resource Efficient Dryland Cropping Systems for Western Nebraska
Investigator: D. J. Lyon
Status: New Hatch project effective February 1, 1992

PROPOSALS SUBMITTED FOR FEDERAL GRANTS

The following is a listing of proposals that were submitted after June 1, 1992 by faculty for federal grant programs. While not all grants will be funded, we applaud the faculty member's effort in submitting proposals to the various agencies.

James Van Etten - National Institute of Health - DNA Replication and Gene Expression of *Chlorella* Viruses - $1,409,955

John H. Golbeck - National Science Foundation - Resolution and Reconstitution of Photosystem I in Cyanobacteria and Higher Plants; Molecular Biological and Physiochemical Studies - $513,000

Robert J. Spreitzer - National Institute of Health - Chloroplast Heteroplasmic Suppression - $409,065

Marion O'Leary - U.S. Department of Energy - Dynamics of Photorespiration in Plants - $316,936

Stephen G. Ernst - Midwest Plant Biotechnology Consortium - Isolation and Characterization of the Bark Storage Gene Family of Poplar - $192,274

Shashi B. Verma and Frank G. Ullman - National Science Foundation - Measurement and Analysis of Methane Fluxes in a Northern Peatland Ecosystem - $164,600

Elizabeth A. Walter-Shea and Timothy Arkebauer - National Oceanic and Atmospheric Administration - Radiation and Gas Exchange of Canopy Elements in a Boreal Forest - $398,469

James S. Schepers, Darrell G. Watts and Todd A. Peterson - USDA Special Grant - Soil and Tissue Testing Strategies to Reduce Nitrate Leaching Under Irrigation - $57,855

Daniel T. Walters and Donald H. Sander - USDA Special Grant - Analysis of Soil Nitrate Depth Distribution Effects on Fertilizer N Use by Corn - $55,176

Richard B. Ferguson and Gary W. Hergert - USDA Special Grant - Variable Rate Nitrogen Application for Corn Based on Spatially Variable Grain Yield and Soil Nitrate - $59,525

Donald H. Sander, Kenneth D. Frank and Edwin J. Penas - USDA Special Grant - Calibration of Residual Soil Nitrate for Predicting Supplemental N for Sorghum - $59,970

George E. Meyer and James Schepers - USDA Special Grant - Improvement of Water Quality by Use of an Optical Plant Nitrogen Sensor - $48,584

The following projects were approved by the Nebraska Corn Development, Utilization and Marketing Board for July 1, 1992 - June 30, 1993 Funding:

David Jackson Blaine Johnson	Nebraska Corn Quality Evaluation and Improvement	16,760
Michael Meagher Rangan Chinnaswamy Milford Hanna David Jackson	Liquefaction of Starch by Extrusion for Direct Utilization of High Starch Concentrations in Fermentors	20,611
Robert Hutkins Michael Meagher Tyrrell Conway	Genetic Construction of Ethanol-Producing Lactobacilli	43,582
Robert Hutkins Michael Meagher	Recovery of Corn-Derived, Value Added Chemicals Using Pervaporation	20,284
David Jackson	Economic Improvement of Corn Wet Milling by Optimizing Steep Conditions	11,832
Terry Klopfenstein Rick Stock	Drying Effects on Distillers Grains	16,375
Ben Doupnik, Jr. Robert Wright	Investigations on the Epidemiology and Control of Maize Chlorotic Mottle Virus	10,000
Milford Hanna	Commercialization Evaluation System for Industrial Corn Utilization Research	35,140
Rangan Chinnaswamy Milford Hanna	Continuous Production of Glucosides from Corn Starch	21,260
Rangan Chinnaswamy Milford Hanna	Starch-Vinylic Polymer Grafts for Chemical Intermediates and Biodegradables	45,900
Rangan Chinnaswamy Milford Hanna	Preparation and Characterization of Starch-Xanthan Block Copolymer	19,530

The following projects were approved by the Nebraska Grain Sorghum Development, Utilization and Marketing Board for July 1, 1992 - June 30, 1993 Funding:

Lynn Lutgen	Sorghum Marketing Program	3,500
Robert Klein Paul Nordquist Fred Roeth Charles Francis	Nebraska Hybrid Grain Sorghum Seed Growout	7,500
Steve Danielson Robert J. Wright	Biology and Behavior of Chinch Bugs in Nebraska: Factors Leading to Crop Loss and Development of Improved Management Practices	6,480
Robert Britton Rick Stock	Enhancing Sorghum Starch Digestion by Genetic Selection	18,300
Leslie Lane Stanley Jensen	Development of an Efficient and Accurate Method of Identifying Sorghum Viruses Based on Polymerase Chain Reaction	14,800
Paul Nordquist David Andrews	Breeding and Evaluation of Improved Sorghum Germplasm	9,840
Jerry D. Eastin	Development of Stress-Resistant Water-Responsive Sorghum Germplasm	26,920

The following projects were approved by the Nebraska Dry Bean Commission for July 1, 1992 - June 30, 1993 Funding:

Gary Yuen Eric D. Kerr James R. Steadman	Biological Control of White Mold and Other Diseases of Dry Bean	8,500
James R. Steadman Eric D. Kerr	Identification of the Rust Strains Infecting Beans in Western Nebraska and Implications for Resistance Strategies 1991-92	5,800
David Nuland Dale Lindgren James R. Steadman Dermot Coyne	Evaluation of Dry Bean Cultivars for Adaptive Characteristics, Performance, and Disease Reduction in Western Nebraska	5,140
Daryl E. Ellis John A. Smith C. Dean Yonts	Economic Evaluation of Reduced Tillage Practices for Dry Beans, Sugar Beets and Corn	500
Durward Smith Larry Williams	Processing Beans to Provide Ingredients for Non-Conventional Foods	7,900
Dermot Coyne James R. Steadman Anne K. Vidaver David Nuland Dale Lindgren	Breeding Dry Beans with Multiple Disease Resistance Combined with Improved Seed Quality, Yield and Plant Type	12,400
David Nuland	Commercial Evaluation of Pinto Breeding Line WM2-89-5	1,000

The following projects were approved by the Nebraska Wheat Board for July 1, 1992 - June 30, 1993 Funding:

David R. Shelton P. Stephen Baenziger C. James Peterson Robert A. Graybosch	Selecting Nebraska Wheats for Processing Needs of Domestic and Foreign Markets	29,000
Rangan Chinnaswamy Milford A. Hanna	Gluten Graft Copolymer Plastic Resins: Production and Characterization	18,030
David R. Shelton P. Stephen Baenziger	Utilization of High-Quality Nebraska Wheats in the United Kingdom	5,700
David S. Jackson	Development of a Wheat Starch Based Bread Staling Inhibitor	13,800
P. Stephen Baenziger David R. Shelton	Improving Wheat Varieties for Nebraska	32,000
John A. Smith Drew J. Lyon David D. Jones	Grade and Jointed Goatgrass Content of Winter Wheat Produced by Nebraska Growers	4,730
Drew J. Lyon David D. Baltensperger	Control of Winter Annual Grasses in a Reduced Tillage Wheat System	11,840
Robert D. Fritschen	Wheat Production and Marketing Resource Collection for the D. A. Murphy Library	585
John E. Watkins P. Stephen Baenziger	Virulence Pattern and Distribution of the Natural Wheat Leaf Rust Populations in Nebraska	18,000
P. Stephen Baenziger	Renovating Wheat Greenhouses	10,000
P. Stephen Baenziger Y. Yen	Electrophoretic Equipment for the Study of Wheat RNA-Degrading Enzymes	5,000
Robert C. Shearman C. James Peterson	Support for a Small Grains Planter for Use in USDA-ARS Wheat Germplasm and Genetics Research	15,000
Lenis A. Nelson	Variety Testing of Public Winter Wheat Varieties Developed Outside of Nebraska	10,000

The following projects were approved by the Nebraska Soybean Development, Utilization and Marketing Board for July 1, 1992 - June 30, 1993 Funding:

Gail A. Wicks Alex R. Martin	Control of Triazine Resistant Kochia in Soybeans	15,930
Rangan Chinnaswamy Milford Hanna	Soy Graft Copolymer Plastic Resins: Production and Characterization	18,030
Alex R. Martin	Low Rate Herbicide Application for Weed Management In Soybeans	17,600
George Graef James Specht	Development of Improved Soybean Varieties for Nebraska	76,650
Donald Lee George Graef	Compositional Analysis of Seed Protein Fractions in Soybeans with High and Low Protein Content	14,180
Roger Elmore Fred Roeth	Soybean Variety Competition with Weeds	15,955
David Shelton	Crop Residue Management Educational Activities Development of a Home Course	18,705
Milford Hanna Louis Leviticus	Emissions and Power Characteristics of Soybean Oil Ester Fuels	20,670