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# Agricultural Experiment Station News December 1983

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

# Agricultural Experiment Station News

December 1983

VOL 17 NO 6

## ASSOCIATE DEAN AND ASSOCIATE DIRECTOR

**Dale H. Vanderholm** became Associate Dean and Associate Director of the Nebraska Agricultural Experiment Station on December 1, 1983. Vanderholm was raised on a farm near Villisca, Iowa and received his B.S. degree in Agricultural Engineering in 1962 from Iowa State University. He served as a watershed planning engineer for the Soil Conservation Service for one year before spending three years on active duty as a U.S. Navy Officer.

In 1967 he joined the faculty at Iowa State as an Instructor of Agricultural Engineering and earned his M.S. degree in Water Resources in 1969 working with land application of anaerobic swine lagoon effluent. He earned his Ph.D. degree in Agricultural Engineering in 1972 from Colorado State University where he worked on water quality surveillance system planning.

Vanderholm returned to Iowa State University in 1972 as an Assistant Professor of Agricultural Engineering on an extension appointment. In 1973 he joined the University of Illinois as Assistant Professor of Agricultural Engineering on a research-extension appointment. His extension responsibilities included the areas of livestock waste management, rural water supply and home

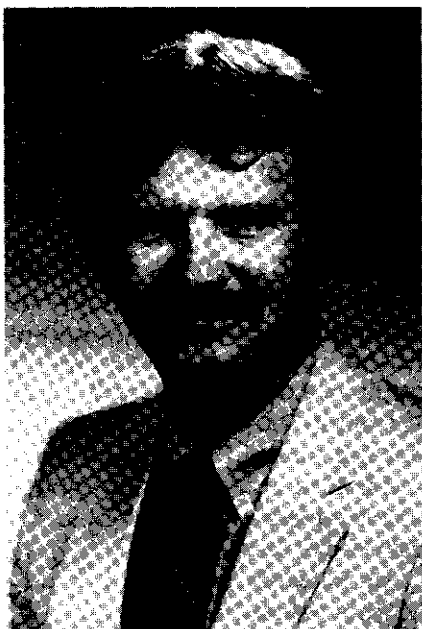
sewage treatment. His primary research thrusts included vegetative treatment systems for feedlot runoff, biogas production from livestock wastes, treatment of pesticide spray tank rinsewater and home sewage treatment systems.

The Vanderholms spent 1979-80 in New Zealand where he was a Visiting Research Fellow at the New Zealand Agricultural Engineering Institute. While on leave, he coordinated the development of uniform nationwide agricultural waste management standards and conducted research on the biological treatment of agricultural wastes.

In 1981, Vanderholm was appointed Assistant Director of the Illinois Agricultural Experiment Station on a half-time basis and given general responsibilities for research in the crops and soils areas. He also provided leadership for interdisciplinary research in IPM, biotechnology and soil and water conservation. He was promoted to the rank of Professor of Agricultural Engineering in 1983.

Dale and his wife, Margaret, have two daughters and have purchased a home near Hickman.

Vanderholm's office will be in Ag Hall 109, telephone - 472-2046.



**Vanderholm**

## INDIRECT COST RECOVERY

A significant portion of the funds received from overhead charges on grants is distributed back to the respective programs. The UNL General Budget takes \$700,000 off-the-top and the remaining amount is distributed as follows:

Administrative Unit	Percent of Total
Departments	35%
Chancellor's Discretionary	20%
Physical Plant (Facility Renovation)	25%
Research Initiation Fund (Vice Chancellor for Research & IANR)	10%
Dean/Director	5%
Library	5%
	<hr/> 100%

The indirect cost rate for Agricultural Experiment Station research grants is currently 36.2 percent. **Terry Klopfenstein and Orvin Burnside** are currently members of a UNL ad hoc committee studying the administration of UNL overhead charges.

## FUNDS AVAILABLE FOR FY 1984 WATER RESOURCES RESEARCH

The Water Resources Center has received word that the President has signed the appropriations bill for the Annual Cooperative Program. On November 1, 1983 **William L. Powers**, Director of the Water Center, sent out requests for research proposals to be ready for submission by January 10, 1984. The deadline for submitting proposals will be announced as soon as the U.S. Geological Survey has established new rules and regulations for administering the program. The deadline is expected to be late January or early February of 1984. For further information contact Powers or **Karen Stork** at (402) 472-3305.

### 1984 FOUNDATION GRANT CYCLE

Regents Hall has announced that they need to receive the next grant cycle for requests from the University of Nebraska Foundation by August 1, 1984. Faculty are encouraged to keep this funding source in mind for proposals that may be particularly appealing to the Foundation Grant Review Committee.

### PROJECT REVIEW ACCOMPLISHMENTS

**Project 11-050**, "Remotely Sensed Temperature to Evaluate Crop Moisture and Heat Stress", **Blaine Blad**, Leader. Results indicate differences in mid-day plant canopy temperatures of fully-irrigated and water-stressed corn, soybean and sorghum crops measured with infrared thermometers can be used to quantify the degree of water stress that these crops experience. Models which incorporate canopy temperature data were developed to predict biomass production and grain yield. Procedures were developed to use crop temperature data to monitor phenological development and to predict the effects of elevated canopy temperatures caused by water stress on phenological development in a number of crops.

**Project 43-029**, "Development and Demonstration of Planting systems for Water, Soil and Energy Conservation", **N. L. Klocke**, Leader. Results indicate the "till-plant"-sweep and the overlapping disk-furrower tillage attachments were adapted to a conventional row-crop surface planter. The results demonstrated that conventional surface planters could operate in no-till conditions in conjunction with the proper tillage attachments.

Two experimental no-till grain drill units were developed in this project. When the row spacings are 12+2 inches, handling the crop residue remains as a problem. Some of the ideas generated through our-no-till experimental designs have been used in commercial industry designs.

Research has shown that crop residues used as surface mulches reduce soil evaporation. To better understand the mechanisms of how crops use water, a method for measuring the evaporation and transpiration components in the field was developed. These measurements should lead to more efficient use of water through irrigation management decisions and the use of crop residues.

## FIELD LAB TASK FORCE ACTIVITY

A revised role and mission statement for the Field Lab was a key agenda item at the 4th meeting of the UNL Field Laboratory Task Force December 9, 1983.

Results of a mini-survey (Task Force members and IANR Department Heads) presented at an earlier meeting put development of the Field Lab among the three top priority IANR proposals for capital construction. Following that indication of interest, the Task Force toured the lab to familiarize members with the existing facility and current problems. Task Force representatives from various program areas have briefed members on needs and additional information is being solicited from IANR faculty and unit heads.

Sub-committees are being appointed within the Task Force to focus on specific areas of concern. Appropriate administrative structure for coping with future development and function of the Field Lab, function and siting of the Field Lab headquarters, mass transit, funding alternatives, resident vs. non-resident staffing, and demolition priorities are some of the specific concerns under consideration.

Readers who have special interest in the future development of the Field Laboratory are encouraged to pass their ideas and concerns on to members of the Task Force or to unit administrators. We want to make sure that ideas and concerns about Field Lab development receive appropriate consideration.

### FY 1984 FEDERAL BUDGET

On November 14, 1983, the President signed legislation providing further continuing Federal appropriations through September 30, 1984. It is expected that the Continuing Resolution will remain in effect for the entire year unless Congress takes separate action at some future date to pass an Agriculture Appropriations Bill.

The Continuing Resolution includes the following:

Federal Formula Funds	2% increase
Animal Health and Disease Research	Same as FY 83
Alcohol Fuels Research Grants	Same as FY 83
Rangeland Research Grants	None
Competitive Research Grants:	
•Plant Science - \$15 million	Same as FY 83
•Human Nutrition - \$2 million	Same as FY 83
•Animal Science	None
Special Research Grants (PL89-106):	Same as FY 83
•Acid Precipitation	\$695,000
•Animal Health Research	7,156,000
•Food and Agriculture Policies	156,000
•Germplasm Resources Research	902,000
•IPM (consortium)	3,091,000
•Minor Use Animal Drugs	240,000
•Pesticide Clearance	1,440,000
•Pesticide Impact Assessment	2,069,000
•Rural Development Centers	311,000
•Soybean Research	518,000
•TCK Smut (Wheat)	361,000

## NEW OR REVISED PROJECTS

### **NEB 44-029 - Machinery Requirements and Water Management of Conservation Tillage for Irrigated Row Crops**

This new Hatch project is led by **J. A. Smith** and **C. D. Yonts** of the Panhandle Station. Objectives of the research are (a) develop machinery management practices for selected conservation tillage systems in Nebraska Panhandle irrigated row crops and (b) develop efficient surface irrigation practices for use with selected reduced tillage systems in Nebraska Panhandle irrigated row crops.

### **NEB 46-002 - Improvement of Beef Cattle Through Breeding Methods - Selection**

This revised Hatch project is led by **R. M. Koch**, **L. V. Cundiff** and **K. E. Gregory** of the Roman L. Hruska U.S. Meat Animal Research Center. The objectives of the research are to determine direct and correlated response of traits to various systems of selection and their application in improving economic traits of beef cattle.

### **NEB 92-026 - Communication Strategies to Improve Nutritional Practices of Adolescents**

This new Hatch project is led by **H. M. Fox** of the Department of Human Nutrition and Food Service Management. The objective of the project is to design and evaluate communication strategies to improve nutritional practices of adolescents.

### **NEB 12-080 - Chemical Aspects of Phosphorus Movement and Availability in Plants in Sandy Soils**

This revised Hatch project has **R. C. Sorensen** of the Agronomy Department as principal investigator. The objectives of this project are (a) to describe the chemistry of the movement and availability to plants of the nutrients phosphorus, calcium, magnesium, and potassium in sandy soils, and (b) to determine the nature of acidity in sandy soils and measure the effects of this acidity on the solubility of both plant nutrients and toxic elements such as aluminum and manganese.

### **NEB 12-101 - Environmental and Morphological Crop Physiology**

This revised Hatch project is led by **M. D. Clegg** of the Agronomy Department. The objectives of the research are (a) evaluate plant/type yield associations in cropping systems, (b) identify and evaluate genetic lines selected in a particular cropping system for increased expression of yield potential, and (c) relate physiological (desiccation tolerance, photosynthesis, respiration, etc.) and morphological (height, leaf type, etc.) changes of crops to environmental (temperature, water stress, light) factors. Emphasis is on sorghum and wheat.

### **NEB 13-052 - The Requirements for Utilization of Protein and Amino Acids by Swine**

This revised Hatch project has **A. J. Lewis** and **E. R. Peo** of the Animal Science Department as principal investigators. The objectives of the research are (a)

determine amino acid requirements of swine and the effects on economically productive traits of supplying suboptimal levels of amino acids, (b) evaluate non-traditional feedstuffs as protein sources for swine, and (c) examine other factors that may influence the utilization of protein and amino acids.

### **NEB 43-037 - Characteristics and Feed Value of Barley and Western Protein Supplements for Swine**

This new Hatch project has **D. M. Danielson** of the North Platte Station as the principal investigator. The objectives of the research are to determine the chemical characteristics and feeding value of western produced protein supplements for swine.

## TOO MANY MEETINGS

I recently read an article entitled "Is That Meeting Really Necessary?" by **Dr. William Lampton**, Director of Development and Institutional Relations at Georgia College. Since it contained considerations that may be useful to each of us, some highlights of the article are summarized here.

Dr. Lampton's definition of a meeting: "An event where one person keeps the minutes, but everybody waste hours."

Legitimate reasons for holding a meeting:

- \* Provides a broader variety of viewpoints.
- \* People are more apt to accept decisions they help to make.
- \* Group backing is beneficial for controversial changes.
- \* Face-to-face contact can improve motivation and morale.

Disadvantages of meetings:

- \* Become substitutes for action.
- \* Diverts time away from solitary thought and planning.
- \* Keeps you away from your students and support staff.

To reduce the number of meetings, Dr. Lampton suggests you ask the following questions:

1. Is the meeting worth the collective time and expense of the group's members?
2. Can I make a decision or take action without consulting the group?
3. Can I get the needed group opinion without a meeting?
4. How would I rate the need for a meeting if I were merely a member and not the presiding officer?

Irv Omtvedt

## USDA COMPETITIVE RESEARCH GRANTS PROGRAM

Grant applications for the following areas of research are due in the Agricultural Research Division as indicated:

- Genetic Mechanisms for Crop Improvement - January 3, 1984
- Biological Nitrogen Fixation - January 3, 1984
- Human Nutrient Requirements - February 1, 1984

## GRANTS AND CONTRACTS

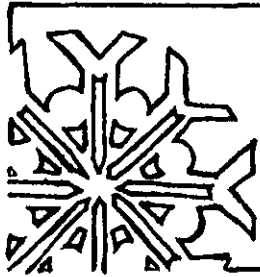
<b>Brumm, M. C.</b> (Notheast Station) - The Upjohn Company	3,750
<b>Danielson, M.</b> (North Platte Station) - SmithKline Animal Health Products	2,400
<b>Flowerday, A. D.</b> (Agronomy) - National Crop Insurance Assn.	3,100
<b>Gustafson, W. A.</b> (Southeast Extension & Research Center) - Donation/Gift - Monsanto Agriculture Products Company	240
<b>Gustafson, W. A.</b> (Southeast Extension & Research Center) - Northern Nut Growers Association	2,000
<b>Helmers, G.</b> (Ag Economics) - Center for Rural Affairs	4,000
<b>Kinder, J. E.</b> (Animal Science) - USDA/ARS	41,400
<b>Klopfenstein, T.</b> (Animal Science) - Distillers Feed Research Council	2,500
<b>Lane, L. C.</b> (Plant Pathology) - Garst Seed Company	200
<b>Mandigo, R. W.</b> (Animal Science) - Ralston Purina	2,116
<b>Riordan, T. P.</b> (Horticulture) - Pursley, Inc.	1,200
<b>Sander, D. H.</b> (Agronomy) - Chevron Chemical Company	1,200
<b>Stetson, L. E.</b> (Ag Engineering) - Northwest Public Power District	500
<b>Vidaver, A. K.</b> (Plant Pathology) - Pioneer Hi-Bred International, Inc.	50
<b>Vidaver, A. K.</b> (Plant Pathology) - Microlife Technics	2,000
Total	66,656

## RETIREMENT RECEPTION AND DINNER

A reception and a dinner will recognize the retirement of **Charles H. Adams**, Professor of Animal Science. Adams has been with the University of Nebraska-Lincoln for 36 years. Both the reception and the dinner will be held on January 20, 1984. The reception will be in the East Campus Union, from 2:00-4:00 p.m. The retirement dinner will be at the Legionnaire Club, 5730 "O" Street, Lincoln.

The dinner will start with a social hour at 6:30 p.m., followed by a prime rib dinner at 7:30 p.m. Cost of the dinner is \$9.00 per person payable before the dinner or at the door. Reservations may be made with Ernie Peo, Jr., Department of Animal Science, 472-6421. Reservations must be made by January 12, 1984.

The department plans to prepare a scrapbook of letters for "Charlie" and present him with an appropriate retirement gift. If you wish to participate in either or both of these recognition activities, you are to send your letters and contributions for the gift to Peo.



### SEASON'S BEST WISHES

The Agricultural Experiment Station office staff—**Irv Omtvedt, Dale Vanderholm, Warren Sahs, Bob Kleis, John Woodward, Diane Mohrhoff, Linda Arnold, Linda Sloup**—wishes each of you a Merry Christmas.

