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UNIVERSITY OF NEBRASKA-LINCOLN
COLLEGE OF AGRICULTURE
THE AGRICULTURAL EXPERIMENT STATION
E. F. FROLIK, DEAN
H. W. OTTOSON, DIRECTOR

Agricultural Experiment Station



Vol. 5, No. 11, May 1973

FROM THE DIRECTOR'S DESK

Amid all of the bad news these days it is good to think some happy thoughts! Some of the facts presented by Mr. Krejci, President of the College Advisory Council, at its last meeting give one a basis for cheer. Here are some of them.

Between 1960 and 1972 corn yields increased in Nebraska by 104%; sorghum, 43%; wheat, 30%; soybeans, 18%. Production of corn rose 61%; sorghum, 40%; and soybeans, 436%. Wheat stayed at the same level. Cattle and calves increased by 34%, while hogs and pigs increased by 23%.

Cash receipts from farming in Nebraska, and value of home consumption in constant dollars, increased by 60%, or 5% per year. This is a measure of the physical volume of agricultural production. Net realized farm income, in constant dollars, increased by 56% during this 12-year period.

Certainly, research and extension work have contributed to the above growth indices. Recognizing the danger of crediting one measurable index with too much weight, I would suggest that we may take satisfaction in the fact that the number of technical publications by Station staff members has increased by 131% during the above 12-year period. (The FTE's of research staff increased by 15% during this time).

Howard W. Ottoson

GUIDELINES FOR QUARTERLY AUTHORS

The next issue of the Quarterly will have a new look in the cover title and inside layout. Subsequent issues will have more variety in story length. Along with the traditional one, two and three page articles, I'm encouraging authors to submit short items to appear as a single column or half a page in the magazine.

These short articles could deal with one segment of a research project, results of a survey, a new testing technique, a new course and so on. Articles about awards, scholarships, new staff and strictly local stories would not fit the Quarterly. Please call if you have an idea you'd like to discuss.

All articles--long or short--should be written sparingly and thoughtfully in popular style. Language should be as non-technical as possible and tables kept to a minimum.

Keep these guidelines where you can find them and plan on writing for the Quarterly soon, won't you?

Marcia Pearson, Editor

Publication credit for Quarterly articles will range from .2 to .4 depending upon the nature of the article. -HWO)

GRANTS AND CONTRACTS

Harold J. Ball - Entomology - Chevron Chemical Company	2,500
Brakke, M. K. - Plant Pathology - National Science Foundation	39,000
Burnside, Orvin C. - Agronomy - Rhodia Incorporated	500
Burnside, Orvin C. - Agronomy - U. S. Borax Research	500
Burnside, Orvin C. - Agronomy - Monsanto Company	1,000
Campbell, John B. - Entomology (NP Sta.) - American Cyanamid Company	1,000
Hagen, Arthur F. - Entomology (SB Sta.) - Chemagro Corporation	500
Kerr, Eric D. - Plant Pathology (SB Sta.) - Dow Chemical Company	500
Kindler, S. Dean - Entomology - Chemagro, Division of Baychem Corporation	500
Lucas, Leo - North Platte Station - Banks of Central Nebraska	5,000
Martin, Alex R. - Agronomy - Monsanto Company	500
Mayo, Z. B. - Entomology - Mobil Chemical Company	2,000
Mayo, Z. B. - Entomology - Chevron Chemical Company	1,000
Mayo, Z. B. - Entomology - Chemagro, Division of Baychem Corporation	500
Moomaw, R. S. - Agronomy (Northeast Sta.) - Monsanto Company	500
Rehm, George - Agronomy (Northeast Sta.) - United States Gypsum Company	3,000
Wicks, Gail A. - Agronomy (NP Sta.) - Shell Oil Company	2,000
Wicks, Gail A. - Agronomy (NP Sta.) - CIBA-Geigy	500
Wicks, Gail A. - Agronomy (NP Sta.) - Monsanto Company	1,000

GENERAL NOTES

1. We approach the season of heavy professional improvement meetings and travel. Many try to combine such travel with personal vacation plans and time. This is fine but the extra time and costs (beyond common carrier timing and costs) should be indicated on travel authorization request as annual leave and personal cost. The specific dates of meeting attendance and the title of any paper to be presented should also be cited.
2. We regret very much the transfer from our cooperative programs of three USDA, ARS scientists: Hollis Shull and Dennis Kincaid from the Scotts Bluff Station and Darryl Smika from North Platte. They have each functioned very integrally on our program teams and will be missed both personally and professionally. Dr. Smika will continue to work as the Soil Scientist in the interdisciplinary program at the Sandhills Agricultural Laboratory from his new home base at Akron, Colorado.
3. Campus developments: Home Economics building is about to emerge from the hole; Forestry Science facilities are nearing completion; the Agricultural Annex removal to make way for Holdrege Avenue related improvements was completed just prior to the word that that project may be deferred until 1975; the stabilization of Dead Man's Run in the vicinity of the north entrance is in process; and the paving of parking lots east and west of the Horse Barn is contracted to be done soon (?).
4. Tractor Power and Safety Day--July 26; Theme--"Energy, use less and profit more".
5. "Words should be weighed and not counted".

R. W. Kleis

NEBRASKA AGRICULTURAL EXPERIMENT STATION PUBLICATIONS - April 1973

Journal Articles (contact authors for more information)

3599. Cost Implications of Diversified Distribution Outlets for Purchased Farm Inputs. Dale G. Anderson and Delmer L. Helgeson. Proceedings of International Association of Agricultural Economics.
3600. Isolation of Transmissible Gastroenteritis (TGE) Virus From Lungs of Market Weight Swine. N. R. Underdahl, C. A. Mebus, E. L. Stair, M. B. Rhodes, L. D. McGill, and M. J. Twiehaus. Canadian Veterinary Journal.
3601. Common Milkweed Seed Maturation. L. L. Evetts and O. C. Burnside. Weed Science.
3602. Significance of Residual Mineral N in Soils from Fertilizer Application. R. A. Olson, K. D. Frank, E. C. Seim, John Muir and A. F. Dreier. International Soil Science Society.
3603. The Residual Activity of TBZ or Benomyl Against *Cercospora Beticola* in Sugarbeets. J. H. Riesselman and J. L. Weihing. Journal of the American Society of Sugar Beet Technologists.
3604. Scheduling Irrigations Using A Programmable Calculator. Dennis C. Kincaid and Dale F. Heermann. ASAE Transactions.
3605. Irrigation of Perennial Forage Crops with Feedlot Runoff. N. P. Swanson, C. L. Linderman and J. R. Ellis. Trans. American Society of Agricultural Engineering.
3606. Dehydrated Corn Plant Pellets for Growing Calves. J. F. Karn, M. G. A. Rumery, D. C. Clanton and L. E. Jones. Journal of Animal Science.
3607. Effect of Low Dose Gamma Irradiation on Growth and Aflatoxin Production by Aspergillus Parasiticus. L. B. Bullerman and T. E. Hartung. Applied Microbiology.
3608. \$815 For Baby Supplies. Martha Lanus Adamson and Florence S. Walker. Journal of Home Economics.
3609. Registration of Maize Germplasm Inbreds. W. A. Compton, J. H. Lonquist, and N. E. Williams. Crop Science.
3610. Registration of Maize Germplasm Inbred Lines. W. A. Compton. Crop Science.
3611. Overwintering Capacity of Ramulispora Sorghi. Gary N. Odvody and Larry D. Dunkle. Phytopathology.
3612. Some Comparative Aspects of the Volatile Components of Fabricated and Conventional Potato Chips. Judith A. Kintner and Roy G. Arnold. Journal of Agricultural & Food Chemistry.
3613. Homemaking Unlimited: Does It Make A Difference? Lois O. Schwab and Charlotte Holm. Journal of Rehabilitation.
3614. Locations of Genes for Kernel Properties in the Wheat Variety "Cheyenne" Using Chromosome Substitution Lines. P. J. Mattern, Rosalind Morris, J. W. Schmidt and V. A. Johnson. Fourth International Wheat Symposium Proceedings.

3615. International Winter Wheat Performance Nursery: Agronomic, Disease, Grain Quality and Climatological Data Combined for Environmental Yield Levels. J. E. Stroike and V. A. Johnson. Fourth International Wheat Symposium Proceedings.
3616. Chromosomal Locations of Genes for High Protein in the Wheat Cultivar Atlas 66. Rosalind Morris, J. W. Schmidt, P. J. Mattern and V. A. Johnson. Fourth International Wheat Symposium Proceedings.
3617. Breeding for Adaptation in Winter Wheats for the Great Plains. J. W. Schmidt, V. A. Johnson, A. L. Diehl and A. F. Dreier. Fourth International Wheat Symposium Proceedings.
3618. Reflectant Induced Modification of Soybean (*Glycine Max L.*) Canopy Radiation Balance I: Preliminary Tests with a Kaolinite Reflectant. Paul C. Doraiswamy and Norman J. Rosenberg. *Agronomy Journal*.

Journal Abstracts (contact authors for more information)

- 73-171. Method of Processing Alfalfa Meal for Baby Pigs. E. R. Peo, Jr., T. Stahly, B. D. Moser & P. J. Cunningham, University of Nebraska; and G. Kohler, A. L. Livingston & R. E. Knowles, USDA, ARS, WRR, Berkeley, Calif. *Journal of Animal Science*.
- 73-172. Synthesis of Bacteriophage $\phi 6$ Double-Stranded Ribonucleic Acid in vivo. David Coplin, J. L. Van Etten and A. K. Vidaver. *American Phytopathological Society*.
- 73-173. Bacteriocins of *Pseudomonas*. A. K. Vidaver and W. L. Haag. *Proceedings of 2nd International Congress of Plant Pathology*.
- 73-174. Characterization of Multicomponent Relicative Form Ribonucleic Acid of Barley Stripe Mosaic Virus. M. K. Palomar and A. O. Jackson. *Proceedings of 2nd International Congress of Plant Pathology*.
- 73-175. Porcine Fatty Acid Composition as Influenced by Sex and Diet. T. E. Socha, G. M. Weiss and P. J. Cunningham. *Journal of Animal Science*.
- 73-176. Studies on Vector Identification & Characterization of Haywire Disease of Potato. D. S. Magnuson, J. R. Steadman and J. S. Semancik. *2nd International Congress of Plant Pathology*.
- 73-177. Influence of Exercise on Growing-Finishing Swine. G. M. Weiss, E. R. Peo, Jr., T. Stahly, B. D. Moser, R. W. Mandigo and P. J. Cunningham. *Journal of Animal Science*.
- 73-178. Levels of Molasses and Urea in Roughage Rations. F. G. Owen, N. B. Tharani and P. J. Cunningham. *Journal of Animal Science*.
- 73-179. Amino Acid Supplementation and Pelleting of High-Lysine Corn for G-F Swine. B. D. Moser, E. R. Peo, Jr., T. Stahly and P. J. Cunningham. *Journal of Animal Science*.
- 73-180. Estimation of Copper Uptake in Swine by Jugular Catheterization. G. L. Zoubek, E. R. Peo, Jr., T. Stahly, B. D. Moser and P. J. Cunningham. *Journal of Animal Science*.
- 73-181. Dehydrated Alfalfa as a Protein Source for Ruminants. Vernon Krause and Terry Klopfenstein. *Journal of Animal Science*.

- 73-182. Metabolism Studies with Hydrolyzed Sawdust. Larry Erlinger and Terry Klopfenstein. Journal of Animal Science.
- 73-183. Sulfite Liquor in Beef Cattle Rations. Terry Klopfenstein, Walter Koers and Stan Farlin. Journal of Animal Science.
- 73-184. The Effect of Temperature, Flake Size, and Blending on Flaked, Formed and Sectioned Pork Products. G. R. Popenhagen, R. W. Mandigo, K. R. Hansen, M. S. Chesney, and L. C. Mahoney. Journal of Animal Science.
- 73-185. In Vitro Estimation of the Effects of Heat on Alfalfa Proteins. R. A. Britton, Chul Lee, Vernon Krause and A. L. Livingston. Journal of Animal Science.
- 73-186. Protein Supplementation of Dehydrated Corn Plant and Silage. Kern Hendrix and Terry Klopfenstein. Journal of Animal Science.
- 73-187. Appraisal of Yield Loss of Dry Beans Due to Fusarium Root Rot. J. R. Steadman and E. D. Kerr. 2nd International Congress of Plant Pathology.
- 73-188. Effect of Hormonal Implants on Weight Gain and Pelvic Size in Beef Calves. J. L. Lesmeister and E. F. Ellington. Journal of Animal Science.
- 73-189. Changes in Bovine Vaginal Mucus After Breeding. J. J. Noonan, A. B. Schultz and E. F. Ellington. Journal of Animal Science.
- 73-190. Ultrastructure of Oviductal Lymphatic Capillaries. R. K. Nayak, E. F. Ellington and D. R. Zimmerman. Journal of Animal Science.
- 73-191. Estrous Cycle Control with Progestogen Impregnated Implants. J. E. Kinder and E. F. Ellington. Journal of Animal Science.
- 73-192. A Venous Cannulation Technique for Obtaining Blood from Unstressed Swine. Dwane R. Zimmerman, B. Lantz, C. Naber, P. Koonsman, and T. Stahly. Journal of Animal Science.
- 73-193. Selection for Ovulation Rate in Swine I. Population & Procedures. Dwane R. Zimmerman and P. J. Cunningham. Journal of Animal Science.
- 73-194. Estrogen Induced Oviductal Ciliogenesis in Swine. R. K. Nayak and Dwane R. Zimmerman. Journal of Animal Science.
- 73-195. A Possible Carrier State of the Bacteriophage $\phi 6$ by Strains of Pseudomonas Phaseolicola. B. J. Cole and A. K. Vidaver. 2nd International Congress of Plant Pathology.
- 73-196. Effect of Flavomycin on Performance of Starting-Growing Turkeys. T. W. Sullivan and J. J. Kubicek. Poultry Science Association Annual Meeting, South Dakota University.
- 73-197. Heat Loss of Chickens as Affected by Egg Formation. F. B. Mather, E. W. Gleaves and J. A. DeShazer. Poultry Science Association Annual Meeting, South Dakota University.
- 73-198. Response of Starting Turkeys to Supplemental Methionine and Sulfate in Corn-Soybean Meal Diets. H. J. Kuhl, Jr., and T. W. Sullivan. Poultry Science Association Annual Meeting, South Dakota University.

- 73-199. The Effects of Egg Production Level, Dietary Protein and Energy Upon Consumption of Protein and Energy in Laying Hens. Richard E. Ivy and Earl W. Gleaves. Poultry Science Association Annual Meeting, South Dakota University.
- 73-200. Influence of Level and Particle Size of Calcium Supplement on Performance of Laying Chickens. D. P. Holder and T. W. Sullivan. Poultry Science Association Annual Meeting, South Dakota University.
- 73-201. Influence of Folic Acid, Vitamin B₁₂ and Pantothenic Acid on the Biotin Requirement of Starting Turkeys. D. P. Holder and T. W. Sullivan. Poultry Science Association Annual Meeting, South Dakota University.
- 73-202. The UNL Broiler Corporation As A Teaching Tool. D. P. Holder, G. W. Froning, E. W. Gleaves, F. B. Mather and T. W. Sullivan. Poultry Science Association Annual Meeting, South Dakota University.
- 73-203. Effect of Temperature and Moisture on Egg Shell Breaking Strength. G. W. Froning and D. P. Holder. Poultry Science Association Annual Meeting, South Dakota University.
- 73-204. Genetic Superiority of Commercial Layers Under Increasing Density of Housing. G. E. Dickerson and F. B. Mather. Poultry Science Association Annual Meeting, South Dakota University.
- 73-205. Isolation and Purification of Turkey Hemeprotein. D. G. Cornish and G. W. Froning. Poultry Science Association Annual Meeting, South Dakota University.
- 73-206. Feed Intake Response to Changes in Environmental Temperature and Dietary Energy in Roosters. Malik M. Ahmad, F. B. Mather and Earl W. Gleaves. Poultry Science Association Annual Meeting, South Dakota University.
- 73-207. Comparative Evaluation of Phosphoric Acid-Process Poultry By-Product Meal and Meat and Bone Meal in Turkey Diets. T. W. Sullivan, H. J. Kuhl, D. P. Holder and J. J. Kubicek. Poultry Science Association Annual Meeting, South Dakota University.
- 73-208. Evaluation of Mass Selection and of Seed Irradiation With Mass Selection for Population Improvement in Maize. C. O. Gardner. Vol. I, Proceedings of the XIII International Congress of Genetics.
- 73-209. Diet Composition of Steers Grazing Irrigated Pasture. H. L. Peterson, Robert P. Lake, J. F. Karn and D. C. Clanton. Journal of Animal Science.
- 73-210. Dehydrated Corn Plant Pellets for Growing Calves. J. F. Karn, M. G. A. Rumery and D. C. Clanton. Journal of Animal Science.
- 73-211. Urinary Creatinine/Nitrogen and Blood Urea Nitrogen as Nutritional Indicators in Cows. L. E. Jones and D. C. Clanton. Journal of Animal Science.
- 73-212. Influence of Egg Production by Pullets in Controlled Environments on Their Energy Intake. W. O. Wilson, T. D. Siopes, D. C. Lowry, C. F. Petersen, B. L. Reid and F. B. Mather. Poultry Science Association Annual Meeting, South Dakota University.
- 73-213. Microclimate Modification for Agriculture in Arid and Semi Arid Regions. Norman J. Rosenberg. Proceedings of Deserts and Arid Lands Symposium.