



AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

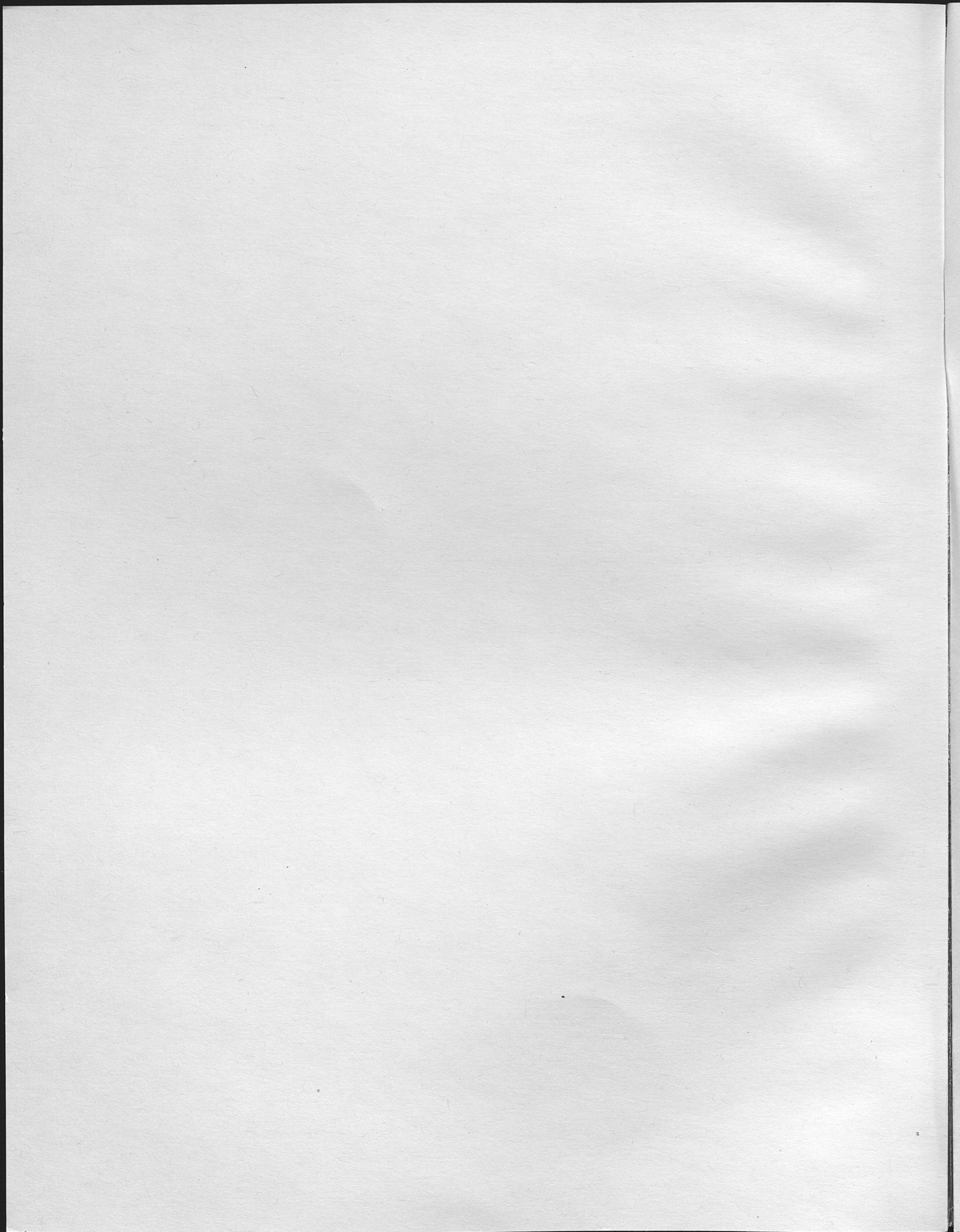
*The Kentucky
Agricultural Experiment Station*

113th

**Annual Report
2000**



College of Agriculture
University of Kentucky • Lexington, Kentucky 40546



Contents

To His Excellency,
The Honorable Paul Patton
Governor of Kentucky

I herewith submit the one hundred and thirteenth annual report of the Kentucky Agricultural Experiment Station for the period ending December 31, 2000. This is done in accordance with an act of Congress, approved March 2, 1887, entitled, "An act to establish Agricultural Experiment Stations, in connection with the Agricultural Colleges established in the several states under the provisions of an act approved July 2, 1862, and under the acts supplementary thereto," and also the act of Kentucky State Legislature, approved February 20, 1888, accepting the provisions of the act of Congress.

Very respectfully,


M. Scott Smith

M. Scott Smith, Director
Lexington, Kentucky
June 30, 2001

To His Excellency
The Honorable Paul Patton
Governor of Kentucky

I herewith submit the one hundred and nineteenth annual report of the Kentucky Agricultural Experiment Station for the period ending December 31, 2001. This is done in accordance with an act of Congress, approved March 3, 1887, entitled, "An act to establish Agricultural Experiment Stations, in connection with the Agricultural Colleges established in the several States under the provision of an act approved July 2, 1862, and under the act supplementary thereto," and also the act of Kentucky State Legislature, approved February 20, 1885, accepting the provisions of the act of Congress.

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M. Scott Smith, Director
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June 26, 2001

Purpose of the Kentucky Agricultural Experiment Station

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As a Land Grant institution, the University of Kentucky is responsible for serving the needs of the people of Kentucky and for providing the means for the development of a structure and organization to provide the necessary educational and research services in agriculture and related areas.																			
The Kentucky Agricultural Experiment Station is the primary agency providing research and extension services to the people of Kentucky.																			
more than 100 years of Kentucky agricultural knowledge and increased quality of life for the people of the Commonwealth.																			
College research in the field of agriculture processing, marketing resources, and																			
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Statewide Research

Research activities of the Kentucky Agricultural Experiment Station were conducted at Lexington, Princeton, Quicksand, and Cowden and in counties throughout the state in 2000.

Efforts are constantly made to ensure that the research studies have application to the problems of all Kentucky farmers and other clientele groups. Locations of the experimental facilities provide conditions representative of most sections of the state.

Campus—Laboratories and specialized equipment for all research program areas.

Collegians—Meigs County—Spunktop Farms—Deer and dairy cattle, poultry, horses, sheep and swine, forages and grain crops, tobacco and turf.

South Farm—Fruit and vegetables, ornamentals.

UK Animal Research Center (Woodford County)—This farm was purchased in late 1991 as a location for development of state-of-the-art food animal research programs. The farm is in Phase I of development as a research facility.

Princeton (Caldwell County)—The Research and Education Center facilities and the West Kentucky Substation Farm are devoted to research on grain crops, beef cattle, swine, fruit and vegetables, forages, and tobacco.



At Quicksand (Breathitt County) the Robinson Station is the location of research on fruits and vegetables, ornamentals, forages, grain crops, tobacco, and wood utilization. Quicksand is also the headquarters of Robinson Forest, which spans over parts of Breathitt, Perry and Knott counties and is the site of forestry and watershed management research.

At the East Shale Farm, located in Owen County near Owensboro, experimental and demonstration studies are conducted on forage crops, tobacco, fruit and vegetables, and beef management.

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Purpose of the Kentucky Agricultural Experiment Station

As a Land Grant institution, the University of Kentucky is responsible for serving the people of the Commonwealth of Kentucky. The College of Agriculture, with its research, teaching, and extension activities, has developed a structure and organization to provide the mandated Land Grant services in agriculture and related areas.

The Kentucky Agricultural Experiment Station has been providing research results to farmers and rural residents for more than 100 years. The continued advancement of Kentucky agriculture attests to the benefits of applying new knowledge and technology. Much of the research leading to increased quantity and improved quality of Kentucky's agricultural output was performed by the Experiment Station. College researchers also have successfully addressed problems of agribusiness, consumers, international trade, food processing, nutrition, community development, soil and water resources, and the environment.

Although much Experiment Station research has immediate application to agricultural and natural resource-related problems, scientists are also involved in basic research, generating new information to help solve present and potential problems. The ability of Kentucky producers to be competitive in domestic and world markets requires an expanded base of knowledge in emerging areas of research applicable to agriculture, food, and natural resources.

This Annual Report lists Experiment Station research projects and publications completed during 2000. A faculty list is also provided.

The research programs of the Kentucky Agricultural Experiment Station have benefited Kentucky's agriculture over the past century, and the results of present and future research will continue to serve Kentucky's primary industry.

Statewide Research

Research activities of the Kentucky Agricultural Experiment Station were conducted at Lexington, Princeton, Quicksand, and Owenton and in counties throughout the state in 2000.

Efforts are constantly made to ensure that the research studies have application to the problems of all Kentucky farmers and other clientele groups. Locations of the experimental facilities provide conditions representative of most sections of the state.

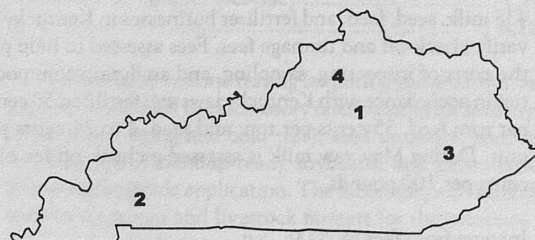
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At the **Eden Shale Farm**, located in Owen County near Owenton, experimental and demonstration studies are conducted on forage crops, tobacco, fruits and vegetables, and beef management.

Regulatory Services

The Division of Regulatory Services administers state laws pertaining to the manufacturing, processing, labeling, and marketing of commercial feed, fertilizer, seed, and raw milk. Its purpose is to protect farmers and other consumers from poor quality, mislabeled, or misrepresented products and to protect agricultural businesses from unfair competition.

Feed, fertilizer, and seed are monitored in the manufacturing or retail channels for compliance with state laws through label review, product and facility inspections, and product sampling and analysis. Raw milk is monitored during marketing to assure an accurate and equitable exchange between producers and processor and to ensure the integrity of milk from farm to processor.

Ten regulatory inspectors and one auditor cover the state, collecting samples, inspecting facilities, and auditing records. Additionally, a specialty-products inspector checks and samples small-package and specialty feed, fertilizer, and seed products throughout the state.

The Division also offers to growers and homeowners seed testing, soil testing, poultry litter and animal manure testing, and water and nutrient solution analyses for greenhouse production and float-bed systems of seedling production.

Auditing Program

H.S. Spencer

Audits of sales and fee payments were made on 269 of 438 milk, seed, feed, and fertilizer businesses in Kentucky to verify check-off and tonnage fees. Fees assessed to help pay the costs of inspecting, sampling, and analyzing commodities in accordance with Kentucky laws are: fertilizer, 50 cents per ton; feed, 35 cents per ton; and seed, 4 to 24 cents per unit. During May, raw milk is assessed a check-off fee of 3 cents per 100 pounds.

Income from fees in 2000:

Feed	\$797,309
Fertilizer	645,410
Milk	68,594
Soil testing	144,587
Seed tags, testing, and licenses	408,295
TOTAL	\$2,064,195

These cash receivables were substantiated on 2,605 fertilizer tonnage reports, 2,864 feed tonnage reports, 684 seed reports, and 13 milk reports. These reports were checked for accuracy and compared with field audits of the firms submitting them. Additional fees of \$5,500 were found as a result of these audits.

Milk Regulatory Program

C.D. Thompson

The Kentucky Creamery License Law has been in effect since 1918. During the 2000 legislative session this law was revised. The new law is now known as the Kentucky Farm Milk Handlers Law and is administered by the milk regulatory program. The program's primary objective is to ensure that the raw farm milk produced and marketed in Kentucky is bought and sold using accurate weights and tests. The program provides a marketplace environment that is fair and equitable for all individuals and firms involved in Kentucky's dairy industry. In 2000, the Division:

- reviewed and issued licenses to 14 milk buyers, 64 testers, 388 sampler-weighers, and eight raw milk transfer stations.
- analyzed and administered action on 6,443 official samples.
- analyzed 648 samples submitted by licensed testers for comparison purposes.
- conducted 13 producer pay record audits.
- conducted 59 inspections at 15 milk laboratories.
- trained and examined 67 new sampler-weighers and 11 new testers.
- conducted 632 inspections of 225 sampler-weighers.
- conducted 36 inspections of raw milk transfer stations.

Feed Regulatory Program

Steve Traylor

The feed regulatory program provides consumer protection for the purchasers of livestock feed and pet foods, maintains a marketplace environment that promotes fair and equitable competition for the feed industry, and helps ensure the safety and wholesomeness of animal products as human food. In 2000, the program:

- administered actions on 4,330 official samples of commercial feed involving 25,614 official tests to monitor about 3 million tons of commercial mixed feed and feed ingredients distributed in Kentucky.
- administered a cooperative program with the FDA to inspect 19 feed mills that mix restricted drugs in feed and to inspect these mills for compliance with the FDA's national BSE Rule. The ruminant-to-ruminant feeding ban of certain mammalian proteins was promulgated to prevent the establishment and amplification of bovine spongiform encephalopathy (BSE) (i.e., mad cow disease) through animal feed. An additional 48 state inspections were conducted on mills that mix non-MFA drugs in feed to ensure compliance with medicated feed regulations. Thirty-eight mills that mix no drugs were inspected to

ensure compliance with labeling, manufacturing, and storage practices. In addition, 27 non-MFA mills were inspected to determine compliance with the BSE Rule.

- conducted 7,500 label reviews and maintained product registration for about 15,000 products from 900 companies.
- continued implementation of the revised feed labeling requirements for livestock and poultry feeds.

Fertilizer Regulatory Program

D.L. Terry

The Kentucky Fertilizer Law ensures that fertilizers sold in Kentucky are clearly and accurately labeled so that consumers can make informed purchases of fertilizer and be assured of its quality. The law also protects the legitimate fertilizer industry from unfair competition. In 2000, the program:

- administered actions on 3,438 official and 87 unofficial samples of fertilizer involving 10,025 tests of the approximately 950,000 tons of fertilizer distributed in Kentucky.
- reviewed labels and registered 3,624 products from 530 firms, including 218 who manufactured custom blends of fertilizers.

Inspection Program

F. Herald

The inspection program aims to achieve industry compliance with the consumer protection laws that the Division is charged with administering. Inspectors strategically located throughout the state, each with an assigned area to cover, carry out this responsibility. They inspect manufacturing plants, processing facilities, storage warehouses, and retail stores; collect official samples of feed, pet food, fertilizer, milk, and seed; review records; and offer assistance to clientele in improving their operations to achieve compliance with the laws. In 2000:

- A team of nine inspectors performed 5,970 inspections of the processing, manufacturing, and marketing of feed, fertilizer, and seed. They inspected 19 feed mills for compliance with the FDA's regulation to prevent the establishment of bovine spongiform encephalopathy (BSE) in the United States. One inspector traveled throughout the state to inspect and sample small-package and specialty feed, fertilizer, and seed products in urban areas. Another inspector covered the state to administer the Creamery License Law.
- Inspectors collected the following numbers of official samples for laboratory verification of appropriate constituents and quality:

Feed	4,330
Fertilizer	3,438
Seed	2,971
Milk	6,443

Seed Regulatory Program

D.T. Buckingham

The seed regulatory program assures Kentucky farmers and urban consumers of quality seed and promotes fair and equitable competition among seed dealers and seedsmen. In 2000, the program:

- collected and tested 2,971 official seed samples.
- issued stop-sale orders on 598 official seed samples and 124 violative seed lots at seed dealer and seed processor locations.
- cooperated with the USDA-Seed Branch regarding shipments of seed into Kentucky that were in violation of the Federal Seed Act.
- issued 243 permits to label seed and registered 403 seed dealer locations. Performed inspections and sampling of agricultural, lawn, turf, and garden seeds during 1,873 visits to more than 600 wholesale and retail locations.

Seed Testing Services

Tina Tillery

The seed testing program provides the seed industry and seed growers of Kentucky with competent, reliable, and timely analyses of their seeds for labeling requirements and quality assurance. In 2000, the seed laboratory tested the following number of samples:

Official seed samples (regulatory)	2,971
Regular seed samples (service)	3,124
Certified seed samples (service)	288
Tobacco seed samples (service)	1,744
TOTAL	8,127

In addition to routine testing for purity, germination, and noxious weed seed, the laboratory offers testing for seed vigor (accelerated aging and cold test), seed moisture, seed size (seed count), Roundup-ready soybeans, and germination following fungicide application. The laboratory also provides tests to seedsmen and livestock farmers for the presence of the fungal endophyte in tall fescue seed and live fescue tillers.

Soil Testing Service

F.J. Sikora (Lexington)
Paula Howe (Princeton)

Soil testing provides farmers, homeowners, greenhouse operators, surface-mine specialists, and others with scientific information about the fertility status of their soils. In partnership with the Cooperative Extension Service, it also provides them with lime and fertilizer recommendations based on soil tests. We also offer analyses of poultry litter and animal wastes for farmers and farm advisors, water and nutrient solution analyses for greenhouse operators and float-bed seedling producers, and non-routine soil tests for University of Kentucky researchers.

Samples analyzed in 2000 were:

Type	Number	% Increase
Agriculture	25,975	-21
Home lawn and garden	6,213	1
Strip-mine reclamation	28	
Commercial horticulture	541	-11
Greenhouse	87	
Research	13,718	16
Atrazine residue in soil	127	108
Animal waste	784	-8
Nutrient solution	742	109
TOTAL	48,215	-7

Feed and Fertilizer Laboratory

Robert L. Beine

The goal of the Regulatory Services Feed and Fertilizer Laboratory is accurate analytical results in a timely fashion. In 2000, 4,522 feed and 3,531 fertilizer samples were reported, including official regulatory, service, and inter-lab check samples. The laboratory also assists the soil lab in the analysis of manure and litter samples.

Approximately 50 different types of feed tests and 24 different fertilizer tests were performed. The laboratory participates in several check sample programs, including the AAFCO Check Sample Program for feed, Magruder7 check sample program for fertilizer, and specialty programs for microscopy, mycotoxins, UAN, phosphate, minerals, etc.

For each of the past five years, the laboratory has coordinated with the Kentucky Fertilizer and Agriculture Chemicals Association and the Burley Tobacco Cooperative to survey the chloride content of the season's tobacco.

Kentucky Agricultural Experiment Station Projects

Agricultural Economics

- Agricultural Industrialization and Globalization: Implications for Rural Economies—*Angelos Pagoulatos, David Debertin, and Ronald Fleming*
- Analysis of Risk Management, Agricultural Policy and Field Crops-Related Issues—*Jerry Skees*
- Analyzing Profits and Risk Potential of New Crop Varieties—*Kimberly Zeuli and Gregg Ibendahl*
- Analyzing the Non-Agricultural Cooperative's Role in Rural Economic Development—*David Freshwater*
- Analyzing the Use of Cooperatives to Improve the Profitability and Risk Exposure of Kentucky Corn Growers—*Gregg Ibendahl and Steve Isaacs*
- Analyzing the International Competitiveness of the U.S. Agricultural Processing Industry—*Michael Reed, Loys Mather, and Mary Marchant*
- Assessment of Trade and Foreign Direct Investment on U.S. Competitiveness in Asian Food Markets—*Mary Marchant*
- Benefits and Costs of Resource Policies Affecting Public and Private Land—*Ronald Fleming*
- An Economic Assessment of Precision Agriculture and Decision Aids—*Carl Dillon, Steve Isaacs, Ronald Fleming, and Gregg Ibendahl*
- Enhancing Farmers' Income through Polyculture of Paddlefish with Catfish in the Southern Region—*Lee Meyer*
- Enrichment Activities in Agricultural Education—*Charles Byers*
- Expansion of GRP Crop Programs—*Jerry Skees*
- Financing Agriculture and Rural America: Issues of Policy, Structure, and Technical Change—*David Freshwater*
- Fruit and Vegetable Supply-Chain Management, Innovations, and Competitiveness—*Timothy Woods*
- Impacts of Trade Agreements and Economic Policies on Southern Agriculture—*Mary Marchant*
- International Agricultural Market Structures and Institutions, 2000—*Michael Reed*
- Kentucky Center for Cooperative Development—*Timothy Woods*
- Market Development of a Nutraceutical Butter Product—*Leigh Maynard*
- Meat Processing and Marketing for Local and Direct Markets—*Lee Meyer*
- Motivating Teams for Enterprise Facilitation—*Timothy Woods*
- New Enterprise Results and Historic Production Patterns: Is There a Positive Correlation for Some Farms?—*Kimberly Zeuli and Jerry Skees*
- Precision Agriculture: Precision Farming Adoption in Kentucky—The Role of Capital Costs and Farm Size—*David Debertin, Ronald Fleming, and Carl Dillon*
- The Relation between Risk Management Policy and Natural Resource Use—*Jerry Skees*
- Responding to Expressed Needs: SARE/ACE Regional Training with the Sustainable Dairy Systems Manual—*Steve Isaacs*
- Rural Economic Development: Alternatives in the New Competitive Environment—*David Freshwater*
- U.S. Consumer Demand for Dairy Products: Needs-Driven Methods and Analysis—*Leigh Maynard*
- A U.S.-E.U. Multilateral Exchange and Training Program toward B.S. and M.S. Degrees in Agribusiness and Agricultural Economics—*Loys Mather*
- Work Crew Performance Model in Vocational Agriculture—*Steve Isaacs*

Agronomy

- 319 Program Site-Specific Nutrient and Biosolids Management on Agricultural Lands—*R.I. Barnhisel*
- Accelerated Development of Scab-Resistant Wheat Varieties—*D.A. Van Sanford*
- Amount and Quality of Herbage Ingested by Cattle Grazing Tall Fescue Clover Grasslands—*C.T. Dougherty*
- Analysis of mRNA Polyadenylation and Metabolism in Plants—*A.G. Hunt*
- Analysis of Senescence-Specific Genes Using Arabidopsis Enhancer Trap Lines—*S. Gan*
- Baled Silage School: Silage Production Techniques for Producers and Extension—*M. Collins*
- Breeding for Fusarium Head Blight Resistance in Wheat for Kentucky—*D.A. Van Sanford*
- Breeding Grasses for the Transition Zone—*T.D. Phillips*
- Career: AGL 15 during Embryogenesis—*S. Perry*
- Characterization, Classification, and Use Interpretations of Kentucky Soils—*A.D. Karathanasis*
- Characterization of a Plant polyA Polymerase—*A.G. Hunt*
- CHS Paducah Gaseous Diffusion Plant Oversight—*M. Coyne*
- Cellular and Molecular Biology Initiative in Dark Tobacco—*G.B. Collins*
- Cloning and Heterologous Expression of Cytochrome—*M. Barrett*
- Cloning Epoxy Fatty Acid Genes—*D. Hildebrand*
- Collection of Clover Germplasm in Mexico—*N.L. Taylor*
- Corn Breeding and Genetics: White Endosperm Breeding, Genetic Variation in Food Quality and Hybrid Performance Tests—*C.G. Poneleit*
- Corn Hybrid Response to Sulfonylurea Herbicides—*W.W. Witt*
- Dark Tobacco Breeding and Chemistry—*P. Legg*
- Dark Tobacco Breeding Genetics and Management—*P.D. Legg*
- Defining the Roles of Interactions between Plant Nuclear polyA Polymerases and Other Factors—*A.G. Hunt*
- Demonstrating Commercial Potential of Zinc Finger Proteins for Generating Value-Added Crops—*D.F. Hildebrand*
- Determining Rates of Several Nutrient Sources for Optimum Crop Production and Soil—*W.O. Thom*
- Development of a Basic Soil Morphology Training Course—*A.D. Karathanasis*
- Disease-Resistance Properties of Tobacco Cultivars That Express *E. coli*—*A.G. Hunt*
- Early-Maturing Soybean Cropping System: Identifying Appropriate Cultivars—*L.J. Grabau*
- Effect of Tillage and Land Use on Physical and Chemical Properties of Kentucky Soils—*G.W. Thomas*
- Effect of Variable Rate Seeding and Nitrogen Rates, Based on Landscape Position on Corn—*R.I. Barnhisel*
- Engineering Oilseeds for Epoxy Fatty Acids Accumulation—*D.F. Hildebrand*
- Enhancing Soil Crop Management with an Electrical Conductivity Sensor—*T. Mueller*
- Evaluate Red Clover for Agronomic Descriptions—*N.L. Taylor*
- Evaluation of Burley Tobacco Varieties—*J. Calvert*
- Evaluation of Fall-Applied Herbicides for Corn Weed Control—*W.W. Witt*
- Evaluation of On-Site Wastewater Treatment Vertical Distance Separation Standards in Kentucky—*A.D. Karathanasis*
- Evaluation of Perennial Forage Crop Varieties—*R. Spitaleri*
- Evaluation of Soybean Varieties and Breeding Lines for Use in Kentucky—*T.W. Pfeiffer*

- Forage Crop Genetics and Breeding to Improve Yield and Quality—*N.L. Taylor*
- Forage for Advancing Livestock Production—*T.D. Phillips*
- Foreign Gene Introduction into Soybean—*G.B. Collins*
- Fragipan Influence on Hillslope Hydrology and Soil Water Quality—*J.A. Thompson*
- Genetic Engineering of Dark Tobacco—*J. Chappell*
- Genetic Engineering of Soybeans for Increased Oil Content and Epoxy Fatty Acid Accumulation—*D.F. Hildebrand*
- Grain Quality Laboratory—*C.G. Poneleit*
- Herbicide Persistence in Southern Soils Bioavailable Concentration and Effect on Sensitive Rotational Crops—*W.W. Witt*
- Integrated Grass Filter Strip-Permeable Reactive Barrier Systems for Groundwater Protection—*E. D'Angelo*
- Introgressing Alleles from the Wild Species *G. soja* into Soybean—*T. Pfeiffer*
- Isolation of Axillary Bud Specific Genes—*R. Dinkins*
- Kentucky Watershed and Water Quality Education Project—*W.O. Thom*
- Manipulation and Regulation of Oxylinin Formation in Plant Tissues—*D.F. Hildebrand*
- Metabolic Engineering to Study the Regulation/Plasticity of and to Modify Diterpene Metabolism in Trichome Gland Cells—*G.J. Wagner*
- Microbial Ecology of Nitrate Reduction in Fragipan Soils—*M.S. Coyne*
- Mineralogical Controls on Colloid Dispersion and Solid-Phase Speciation of Soil Contaminants—*R.I. Barnhisel*
- Molecular Regulation of Isoprenoid Metabolism in Plant Pathogen Interactions—*J. Chappell*
- Molecular Regulatory Mechanism of Two Senescence-Specific Genes in Arabidopsis—*S. Gan*
- Multiplicative (Linear-Bilinear) Models for Genotype X Environment Interaction in Crop Cultivars—*P.L. Cornelius*
- Phenology, Population Dynamics, and Interference: A Basis for Understanding Weed Biology and Ecology—*W.W. Witt*
- Pilot Project for Yield Enhancement Synthetic Auxins—*C.A. Meurer*
- Plant Genetic Resources Conservation and Utilization—*N.L. Taylor*
- Potential Impact of Global Warming on Seed Germination Ecology of Summer Annual and of Winter Annual Weeds—*C.C. Baskin*
- Poultry Litter Management for Corn Production—*M. Rasnake*
- Precision Agriculture: Evaluating Nutrient Removal as a Basis for Nutrient Management—*J. Grove*
- Precision Agriculture: Evaluation of Topography Attributes on Corn Yield—*R.I. Barnhisel*
- Precision Agriculture: Explaining Spatial Variability in Grain Fields—*T. Mueller*
- Precision Agriculture: Quantitative Soil-Landscape Modeling to Define Landform Management Segments—*J.A. Thompson*
- Precision Agriculture: Remote Sensing of Pasture Mass and Quality—*M. Collins*
- Predicting Solute Transport Parameters from Pore Characteristics of Kentucky Soils—*E. Perfect*
- Relationship between Photosynthesis, Assimilate Supply and the Size of the Reproductive Sink—*D.B. Egli*
- Resilience of Nitrogen Availability and Retention in Soils of Kentucky Certified Organic Farms—*M. Coyne*
- The Role of Ammonium-Potassium-Calcium Exchange Interactions in Regulating Nitrification Rates in Soil—*M.S. Coyne*
- Seed Biology and Technology Investigations—*D.M. Tekrony*
- Significance of Loline Alkaloids in Ecosystems Predominated by Grass/Endophyte Associations—*L.P. Bush*
- Soft Red Winter Wheat Breeding and Variety Development for Kentucky—*D.A. Van Sanford*
- Soil and Crop Nitrogen Testing to Improve Nitrogen Management for Burley Tobacco—*R.C. Pearce*
- Soil Biogeochemical Indicators to Assess Water Quality in Wetlands—*E. D'Angelo*
- Soil Survey Characteristics and Environmental Impact—*A.D. Karathanasis*
- Somatic Cell Genetics of Crop Plants—*G.B. Collins*
- Soy 2000 Cellular and Molecular Biology of Soybean—*G.B. Collins*
- Soybean Genetic Engineering—*G.B. Collins*
- The Soybean Tissue Culture and Genetic Engineering Center—*G.B. Collins*
- Species and Crop Management Effects on the Yield and Quality of Round Bale Silage—*M. Collins*
- Structure and Function of Terpene Cyclase—*J. Chappell*
- Studies of and Efforts to Engineer the Metabolism in Plant Trichomes—*G.J. Wagner*
- Studies on Decreasing Tobacco-Specific Nitrosamines in Burley Tobacco during Curing—*H.R. Burton*
- Studies on Modified Air-Curing for the Production of Burley Tobacco Having Decreased Levels of Tobacco Specific Nitrosamines—*H. Burton*
- Switchgrass as a Biomass—*M. Rasnake*
- Technical Assistance for Data Analysis, Interpretation, and Manuscript Preparation in a Project on the Ecophysiology of the Mycorrhizal Symbiosis—*M. Barrett*
- Terpene Cyclases—*J. Chappell*
- Turfgrass Management Practices in Kentucky—*D.W. Williams*
- Understanding Recombination and Modifying its Frequency in Soybean and Corn—*T.W. Pfeiffer*
- Using Seeded Cultivars of Zoysia Grass for Sod Production—*D.W. Williams*
- Variable Rate Seeding: Corn Producers—*R.I. Barnhisel*
- Water We Doing with All That Water?—*W.O. Thom*
- Yield Potential/Long-Term Effects of No-Tillage-Wheat Production—*L. Murdock Jr.*

Animal Sciences

- Animal Manure and Waste Utilization Treatment and Nuisance Avoidance for a Sustainable Agriculture—*G.L. Cromwell and J.H. Grove*
- Breeding to Optimize Maternal Performance and Reproduction of Beef Cows in the Southern Regions—*F.A. Thrift and D.K. Aaron*
- Development of a Swine Model to Evaluate the Reduction of Antibiotic Resistant Enteric Bacteria in Domestic Livestock—*M.C. Newman*
- Development of Peptide Blockers to Enhance Cheese Production—*C.L. Hicks*
- Dietary Regulation of Cationic Amino Acid Transporter Protein Expression in Cattle—*J.C. Matthews*
- Effects of Dietary Fiber Type and Amount on Large Intestinal Volatile Fatty Acids and Water Balance in Horses—*L.M. Lawrence*
- Enhancing Food Safety through Control of Foodborne Disease Agents—*M.C. Newman*
- Evaluation of Supplemental Chromium on Glucose Tolerance and Performance of Swine—*M.D. Lindemann and G.L. Cromwell*
- Forage Protein Characterization and Utilization for Cattle—*E.S. Vanzant*
- Formation and Treatment of Ovarian Cysts in Dairy Cows—*W.J. Silvia*
- Interaction of Structurally Modified Food Proteins in Processed Meat Systems—*Y. Xiong*
- Introduction of Puberty Onset in Beef Cattle—*K.K. Schillo*
- Management Systems for Improved Decision Making and Profitability of Dairy Herds—*D.M. Amaral-Phillips*
- Mastitis Resistance to Enhance Dairy Food Safety—*R.J. Harmon*
- Metabolic Relationships in Supply of Nutrients for Lactating Cows—*D.L. Harmon*
- Modifying Milk Fat Composition for Improved Manufacturing Qualities and Consumer Acceptability—*S.T. Franklin*
- Molasses-Based Strategic Supplementation Program to Enhance Beef Cow Reproductive Performance and Calf Weaning Weight from Endophyte-Infected Tall Fescue Pasture—*D.G. Ely and D.K. Aaron*
- Molecular Characterization of Carbohydrate Utilization by Anaerobic Bacteria—*H.J. Strobel and K.A. Dawson*
- Nutrition and Health of Dairy Calves—*S.T. Franklin*
- Nutritional Systems for Swine to Increase Reproductive Efficiency—*M.D. Lindemann*
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Biosystems and Agricultural Engineering

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 Measuring and Predicting Soil Compaction by Machinery—*L.G. Wells, S.A. Shearer, and R.I. Barnhisel*
 Mechanics of Granular Solids—*I.J. Ross, R.S. Gates, and T.C. Bridges*
 Precision Agriculture: Development and Assessment of Integrated Practices for Kentucky Producers—*S.A. Shearer*
 Precision Farming Technology and Its Economic and Environmental Impacts—*S.A. Shearer*
 Quantification of Feeding and Drinking Behavior of Poultry for Enhancement Animal Well-Being—*R.S. Gates*
 Residential Air Infiltration and Air Quality—*D.G. Collier, R.S. Gates, and K.T. Priddy*
 Systems for Controlling Air Pollutant Emissions and Indoor Environments of Poultry, Swine, and Dairy Facilities—*R.S. Gates, D.G. Overhults, and L.W. Turner*
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 Water and Solute Transport in Soils with Perched Water Tables—*S.R. Workman*

Entomology

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 Biology and Management of Insects Attacking Turf and Woody Landscape Plants—*Daniel A. Potter*
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 Development of Pest Management Strategies for Forage Alfalfa Persistence—*B.C. Pass*
 Development and Integration of Entomopathogens into Pest Management Systems—*Grayson C. Brown*
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 Ecology and Management of European Corn Borer and Other Stalk Boring Lepidoptera—*Grayson C. Brown*
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 Functional Implications of Polydnavirus Genome Organization—*Bruce A. Webb*
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 Integrated Management of Arthropod Pests of Livestock and Poultry—*Stephen L. Dobson*
 Mating Disruption and the Evolution of Pheromone Communication in Moths—*Kenneth F. Haynes*
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Horticulture

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 Molecular Characterization of the Role of Raffinose in Arabidopsis, Tomato and Corn—*A.B. Downie*
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 Post-Translational Methylation of Lysyl Residue 14 in the Large Subunit of Ribulose-1,5-Bisphosphate Carboxylase/Oxygenase—*R.L. Houtz*
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 Seed Vigor Testing for Small-Seeded Flower Species Using Computer-Aided Image Analysis—*R.L. Geneve*
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Landscape Architecture

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Nutrition and Food Science

- Dietary Vitamin E/Fat and Oxidative Damage—C.K. Chow
Effect of Dietary Antioxidant on Hepatic NF- κ B Activation—H.P. Glauert
Effects of Dietary Fish Oil and N-3 Fatty Acids on Antioxidant Defense Systems and Inflammatory Processes—L.H. Chen

Plant Pathology

- Aggressiveness and Pathogenicity Determinants in Anthracnose Stalk Rot of Corn—L.J. Vaillancourt
Altering Ergot Alkaloid Biosynthesis by the *Acremonium* Endophyte of Tall Fescue—C.L. Scharl
Assessment of Diseases and their Management in Trees and Other Perennials—J.R. Hartman
Biological Control and Management of Soilborne Plant Pathogens for Sustainable Crop Production—J.W. Hendrix
Biological Control of Soilborne Plant Pathogens for Sustainable Agriculture—J.W. Hendrix
Control of Acidic Beta-1,3-glucanase Gene Expression in Induced Systemic Resistance of Tobacco to Blue Mold—C.L. Scharl
Development of a Cucumovirus-Based Tobacco Transient Expression Vector—S.A. Ghabrial
Development of Gray Leaf Spot-Resistant Perennial Ryegrass through Breeding and Biotechnological Approaches—M.L. Farman
Efforts to Limit Disease in Tobacco and Vegetables—W.C. Nesmith
Evaluation of Disease Management Strategies for Corn, Forages, and Turf—P. Vincelli
Expression of a Broad-Spectrum Antifungal Polypeptide in Transgenic Tobacco Plants: Novel Approaches for Control of the Blue Mold Disease of Tobacco—S.A. Ghabrial
Factors Influencing *De Novo* Meiotic Chromosome Deletions—M.L. Farman
Genetic Analysis of Avirulence/Virulence in *Magnaporthe grisea*, a Pathogen of Rice—M.L. Farman
Genetic Analysis of Bioprotective Alkaloids Produced by Grass Symbionts—C.L. Scharl
Genetic Determinants of Parasitism and Pathogenicity in *Colletotrichum graminicola*—L.J. Vaillancourt
Identification of Pathogenicity Mutants of *Colletotrichum graminicola*—M.R. Thon
Impact of Viruses on Illinois Soybean—S.A. Ghabrial
Managing Plant-Parasitic Nematodes in Sustainable Agriculture with Emphasis on Crop Resistance—D.E. Hershman
Mechanisms of Defective Interfering RNA Replication and Interference with Helper Virus Infections—P.D. Nagy
Mechanisms of Virus Particle Disassembly during the Establishment of Plant Virus Infections—J.G. Shaw
Molecular Basis of Disease in a Virus-Infected Plant Pathogenic Fungus—S.A. Ghabrial
Molecular Genetics and Biosynthesis of Loline Alkaloids by Mutualistic Endophytes—C.L. Scharl
Molecular Systematics of Grass Symbionts of the Fungal Family Clavicipitaceae (Hypocreales)—C.L. Scharl
Mycovirus-Host Interactions in Diseased Isolates of *Helminthosporium victoriae*—S.A. Ghabrial
A National Agricultural Program to Clear Pest Control Agents for Minor Uses—W.C. Nesmith
National Fusarium Head Blight Initiative: Work Plans and Budget for 1999—D.E. Hershman
Phylogenetics of *Epichloë* Species and Related Grass Mycosymbionts—C.L. Scharl
Role of Promoter and Enhancer Elements in the Replication of Defective Interfering Tombusvirus RNA—P.D. Nagy
Strategic Utilization of Resistance Genes to Prevent Virus-Induced Yield Losses—S.A. Ghabrial
Survey and Management of Soybean and Wheat Diseases—D.E. Hershman
Toxin Biosynthesis in Ergopeptide-Producing Fungi—C.L. Scharl

- Uncoating of a Helical Virus: Cotranslational and Coreplicational Disassembly Mechanisms—J.G. Shaw
Use of Molecular Markers for Epidemiological and Population Studies of *Peronospora tabacina*—M.L. Farman
Vector Specificity in Potyvirus Transmission: Role of the Helper Component—T.P. Pirone

Rural Sociology

- Assessing the Impacts of Welfare Reform on Individual, Family, and Community Well-Being: A Focus on the Rural South—J. Zimmerman
Best Practices Approach to Parental Involvement—P. Dyk
HIV Interventions for Young, Appalachian Risk Takers—G. Hansen
Impacts and Outcomes of Welfare Reform across Rural and Urban Places in Kentucky—P. Dyk and J. Zimmerman
Organizational and Structural Changes in the Dairy Industry—L. Garkovich and P. Dyk
Risk and Regulatory Regimes in Industrial Animal Agriculture—L. Burmeister
Rural Low-Income Families: Tracking Their Well-Being and Functioning in the Context of Welfare Reform—P. Dyk
Rural Restructuring: Causes and Consequences of Globalized Agricultural and Natural Resource Systems—L. Burmeister

Veterinary Science

- Age Dependence of Foal Vaccination for Viral Infectious Diseases—T.M. Chambers
Bovine Influenza—T.M. Chambers
Cause of Death of Elk in Kentucky—D. Bolin
Cellular Immunity to Infection of Horses by Equine Herpesvirus-1—G.P. Allen
Characterization of Immunogenic Surface Proteins of *Streptococcus equi*—J.F. Timoney
Characterization of Protectively Immunogenic Proteins of *Leptospira interrogans*—J.F. Timoney
Continuing Education: Racetrack Veterinarians and Commission Veterinarians Short Course—T. Tobin
Control, Transmission, and Prevalence of Natural Infections of Internal Parasites of Equids and Ruminants—E.T. Lyons
Development of a Physical Gene Map for the Horse—T.L. Lear
Differential Gene Expression during Early Equine Conceptus Development—K.J. McDowell
EIAV Diagnostics—C. Issel
Equine Disease Surveillance at the Local, National, and International Level—D.G. Powell
Equine Influenza Surveillance and Virus Characterization—T.M. Chambers
Functional Genomics for the Horse—E. Bailey
Galactokinase 1 as a Candidate Gene for Juvenile Cataracts in Dogs—K.A. Graves
Gene Discovery in *Sarcocystis neurona*, the Primary Cause of EPM—D. Howe
Gene Map for the Horse: Genes for Growth and Development—E. Bailey
Genetic Basis of *Epitheliogenesis imperfecta*—E.G. Cothran
Genetic Variation and Management for Feral Horse Herds—E.G. Cothran
Genetics of Equine Infertility: Chromosome Abnormalities, Candidate Genes, and Testicular Gene Expression Affecting Stallion Fertility—T.L. Lear
Genome and Chromosome Evolution: Comparative Mapping and Genome Evolution of the Equidae and Other Perissodactyls—T.L. Lear
Host Factors Involved in Equine Infectious Anemia—R.F. Cook
Identification and Characterization of Immunodominant Antigens from *Sarcocystis neurona*—D. Howe
Identification of Genes Unique to *Streptococcus equi* by Subtractive DNA Hybridization—J.F. Timoney

Immunological Management of Lentivirus Infections: EIAV—C. Issel
 Inactivation of the *has A* Gene of the Pinnacle Vaccine Strain of *Streptococcus equi*—J.F. Timoney
 Induction of Local Immune Responses in the Equine Nasopharynx—J.F. Timoney
 Insulin Resistance and Obesity in the Mare: Implications to Reproduction and Laminitis—B.P. Fitzgerald
 Interactions among Prostaglandin F_{2α} Oxytocin and Conceptuses—K.J. McDowell
 Investigation of Infectious Disease Outbreaks in Central Kentucky—D.G. Powell
 Investigation of the Role of Thyroxine in the Control of Seasonal Reproductive Activity in the Mare—B.P. Fitzgerald
 Investigations of Placentitis Associated with Gram-Positive Filamentous Bacteria in Horses—N.M. Williams
 Melatonin and Seasonal Reproduction in Mares—B.P. Fitzgerald
 Molecular Characterization of Bacteria Associated with Nocardiform Placentitis—J.M. Donahue
 National Animal Genome Project—E. Bailey
 New Analytical Methods: Detection of Erythropoietin Administration in Racing Horses—T. Tobin
 New Therapeutic Approaches to Equine Diseases—T. Tobin
 No Effect Thresholds in Racing Horses—T. Tobin
 Pathogenesis of Equine Infectious Anemia—C. Issel
 Role of Adipose-Tissue Derived Cytokines, Including Leptin in the Control of Seasonal Reproductive Activity in the Mare—B.P. Fitzgerald
 Synteny Mapping of Coding Genes in New World Camelids—K.A. Graves
 Synthesis of Equine Drug Metabolites—T. Tobin
 Testing Integrity Program (TIP)—T. Tobin
 Testing of Modified Live Equine Influenza Virus Vaccine (FluAvert™ I.N. Vaccine)—T.M. Chambers

Publications

All publication dates in this section are 2000 unless otherwise noted.

Annual Report

One Hundred and Twelfth Annual Report of the Kentucky Agricultural Experiment Station for 1999. College of Agriculture, University of Kentucky, C. Oran Little, Director. June.

Books and Book Chapters

Agricultural Economics

Debertin, D.L. Review of urban-regional economics. Social system accounts and eco-behavioral science: Selected writings by Karl A. Fox. pp. 438-441. IN: James R. Prescott, Paul Van Moeske, and Jati K. Sengupta, eds. *Growth and Change* 31. Ames, Iowa State University Press (book review).

Reed, M. *International Trade in Agricultural Products*. Prentice-Hall. 235 pp.

Reed, M.R., and M. Hasan. Government intervention and competitiveness: The case of the Indonesian palm oil industry. IN: Lodha, ed. *Business in the 21st Century*. Southern Connecticut State University, New Haven, Conn.

Reed, M.R. The U.S. food processing industry. IN: Colyer, Kennedy, Amponsah, Fletcher, Jolly, eds. *Competition in Agriculture: The United States in the World Market*. Haworth Press, Binghamton, N.Y.

Agronomy

Barnhisel, R.I., R.G. Darmody, and W.L. Daniels, eds. *Reclamation of Drastically Disturbed Lands*. Agronomy Monograph 41. American Society of Agronomy Inc., Crop Science Society of America Inc., Soil Science Society of America Inc., Madison, Wis. 1082 pp.

Crossa, J., and P.L. Cornelius. Modelos lineales-bilineales para el análisis de ensayos de genotipos en ambientes múltiples. IN: F.G. Garcia and N.E. Treviño, eds. *Seminario Interacción Genotipo x Ambiente*. Sociedad Mexicana de Fitogenética (SOMEFI). Chapingo, México.

Diaz-Zorita, M., and J.H. Grove. Crop rotations and soil properties under no-till systems in the Pampas region (Spanish). pp. 35-41. IN: J.L. Panigatti, D. Buschiazio, and H. Marelli, eds. *Siembra Directa II*. Editorial Hemisferio Sur. Buenos Aires, Argentina.

Ditsch, D.C., and M. Collins. Reclamation considerations for pasture and hay land. Chapter 10, pp. 241-271. IN: R.I. Barnhisel, R.G. Darmody, and W.L. Daniels, eds. *Reclamation of Drastically Disturbed Lands*. Agronomy Monograph 41. American Society of Agronomy Inc., Crop Science Society of America Inc., Soil Science Society of America Inc., Madison, Wis.

Dunker, R.G. and R.I. Barnhisel. Cropland reclamation. Chapter 13, pp. 323-369. IN: R.I. Barnhisel, R.G. Darmody, and W.L. Daniels, eds. *Reclamation of Drastically Disturbed Lands*. Agronomy Monograph 41. American Society of Agronomy Inc., Crop Science Society of America Inc., Soil Science Society of America Inc., Madison, Wis.

Perfect, E. Estimating soil mass fractal dimensions from water retention curves. pp. 131-141. IN: Y.A. Pachepsky, J.W. Crawford, and W.J. Rawls, eds. *Fractals in Soil Science, Developments in Soil Science* 27. Elsevier, Amsterdam, the Netherlands.

Reddy, K.R., E.M. D'Angelo, and W.G. Harris. Biogeochemistry of wetlands. pp. G89-G119. IN: M.E. Sumner, ed. *Handbook of Soil Science*. CRC Press, Boca Raton, Fla.

Redente, E.F., J.M. Hower, and R.I. Barnhisel. Reclamation of oil shale. Chapter 27, pp. 775-799. IN: R.I. Barnhisel, R.G. Darmody, and W.L. Daniels, eds. *Reclamation of Drastically Disturbed Lands*. Agronomy Monograph 41. American Society of Agronomy Inc., Crop Science Society of America Inc., Soil Science Society of America Inc., Madison, Wis.

Taguas, J.F., M.A. Martín, and E. Perfect. Simulation and testing of self-similar structures for soil particle-size distributions using iterated function systems. pp. 101-113. IN: Y.A. Pachepsky, J.W. Crawford, and W.J. Rawls, eds. *Fractals in Soil Science, Developments in Soil Science* 27. Elsevier, Amsterdam, the Netherlands.

Williams, D., B. McCarty, and L.C. Miller. Cultural practices for golf courses. pp. 317-355. IN: McCarty, L.B., ed. *Best Golf Course Management Practices*. Prentice Hall.

Animal Sciences

Aaron, D.K., and V.W. Hays. Statistical techniques for the design and analysis of swine nutrition experiments. pp. 879-899. IN: A.J. Lewis and L.L. Southern, eds. *Swine Nutrition*, 2nd ed. CRC Press, Boca Raton, Fla.

Cantor, A.H., E.A. Decker, and V.P. Collins. Fatty acids in poultry and egg products. pp. 125-151. IN: C.K. Chow, ed. *Fatty Acids in Foods and Their Health Implications*, 2nd ed. Marcel Dekker, New York.

Cantor, A.H., M.L. Straw, M.J. Ford, A.J. Pescatore, and M.K. Dunlap. Effect of feeding organic selenium in diets of laying hens on egg selenium content. pp. 473-476. IN: J.S. Sim, S. Nakai, and W. Guenter, eds. *Egg Nutrition and Biotechnology*. CAB International, Wallingford, United Kingdom.

Cromwell, Gary L. An animal nutritionist's perspective. pp. 57-82. IN: C.F. Murphy and D.M. Peterson, eds. *Designing Crops for Added Value*. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Madison, Wis.

Cromwell, Gary L. Utilization of soy products in swine diets. pp. 258-282. IN: J.K. Drackley, ed. *Soy in Animal Nutrition*. Federation of Animal Science Societies, Savoy, Ill.

Hennig, B., M. Toborek, and G.A. Boissonneault. Lipids, inflammatory cytokines, and endothelial cell injury. Chapter 17, pp. 203-220. IN: Gershwin, German and Keen, eds. *Nutrition and Immunology: Principles and Practice*. Humana Press Inc., Totowa, N.J.

Lindemann, M.D., A.J. Lepine, and M.G. Hayek. Evaluation of chromium supplementation on several insulin-controlled parameters in beagles. pp. 243-254. IN: G.A. Reinhart and D.P. Carey, eds. *Proceedings of the 2000 IAMS Nutrition Symposium*. Orange Frazer Press, Wilmington, Ohio.

Matthews, J.C. Mechanisms of peptide and amino acid transport. Chapter 1. IN: J.P.F. D'Mello, ed. *Farm Animal Metabolism and Nutrition: Critical Reviews*. CAB International, Wallingford, United Kingdom.

Matthews, J.C. Peptide absorption: Where peptides fit in protein nutrition and metabolism. pp. 357-368. IN: T.P. Lyons and K.A. Jacques, eds. *Biotechnology in the Feed Industry. Proceedings of Alltech's 16th Annual Symposium*. Nottingham University Press, Nottingham, United Kingdom.

Silvia, W.J., and L.A. Edgerton. Possible roles of oxytocin in regulating uterine prostaglandin secretion during the oestrous cycle and early pregnancy in sows. Havemeyer Foundation Monograph Series No. 2:10-12.

Xiong, Y.L. Meat processing. Chapter 2, pp. 89-145. IN: S. Nakai and H.W. Modler, eds. *Food Proteins: Processing Applications*. Wiley-VCH, New York.

Xiong, Y.L. Protein oxidation and implications for muscle food quality. Chapter 4, pp. 85-111. IN: E.A. Decker, C.L. Faustman, and C.J. Lopez-Bore, eds. *Antioxidants in Muscle Foods*. John Wiley and Sons Inc., New York.

Biosystems and Agricultural Engineering

Colliver, D.G. Preface. IN: G. Levermore. *Building Energy Management Systems*. E & FN Spon., London.

Colliver, D.G. A predictive method to determine the leakage area needed in residences for IAQ control by infiltration. CIBSE/ASHRAE "20-20 Vision." (CD-ROM, Better IAQ Through Understanding Section). American Society of Heating, Refrigerating and Air-Conditioning Engineers, Atlanta, Ga.

Gates, R.S., K. Chao, and N. Sigrimis. Identifying design parameters for fuzzy control of staged ventilation control systems. *Computers and Electronics in Agriculture*, Special Issue on Intelligent Systems in Crop Production (COMPAG 1576).

Ten Wolde, A., and D.G. Colliver. Weather data. Chapter 2. IN: *ASTM Manual 40—Moisture Analysis and Condensation Control in Building Envelopes*. ASTM. Pittsburgh, Pa.

Entomology

Brown, G.C. Theoretical and experimental studies of predator versus pathogen effects on spider mite population dynamics. pp. 191-196. IN: Glen R. Needham, Roger Mitchell, David J. Horn, and W. Calvin Wilbourn, eds. *Acarology 9(2) Symposia*. The Ohio Biological Survey, Columbus, Ohio. 1999.

Potter, D.A., R.C. Williamson, K.F. Haynes, and A.J. Powell Jr. Cultural control, risk assessment, and environmentally responsible management of scarab grubs and cutworms in turfgrass. pp. 383-396. IN: J. Marshall Clark and M.P. Kenna, eds. *Fate and Management of Turfgrass Chemicals*. ACS Symposium Series 743, American Chemical Society, Washington, D.C.

Webb, Bruce A. Polydnviruses and insect transgenic research. pp. 203-215. IN: A.M. Handler and A.A. James, eds. *Insect Transgenesis*. CRC Press.

Webb, B.A., N.E. Beckage, Y. Hayakawa, P.J. Krell, B. Lanzrein, M.R. Strand, D.B. Stoltz, and M.D. Summers. Polydnviridae. pp. 253-259. IN: M.H.V. van Regenmortel et al., eds. *Virus Taxonomy*. Academic Press.

Forestry

Nelson, E.A., R.K. Kolka, C.C. Trettin, and J. Wisniewski, eds. *Restoration of a Severely Impacted Riparian Wetland System—The Pen Branch Project*. Special Journal Series, Ecological Engineering, 15, Suppl. 1. Elsevier Publishing. 189 pp.

Horticulture

Archbold, D.D., and T.R. Hamilton-Kemp. Surface disinfection of berry crops with the natural volatile E-2-hexenal. pp. 268-272. IN: W.J. Florkowski, S.E. Prussia, and R.L. Shewfelt, eds. *Integrated View of Fruit and Vegetable Quality*. International Multidisciplinary Conference. Technomic Publishing Company, Lancaster, Pa.

Archbold, D.D., T.R. Hamilton-Kemp, and R.W. Collins. Enhancement of strawberry aroma quality components after exposure to a novel fumigant of natural origin. pp. 250-256. IN: W.J. Florkowski, S.E. Prussia, and R.L. Shewfelt, eds. *Integrated View of Fruit and Vegetable Quality*. International Multidisciplinary Conference. Technomic Publishing Company, Lancaster, Pa.

Jones, R.T., and S. Dawson, eds. *Proceedings of the Second National Ginseng Dealer and State Program Coordinators Conference*. 83 pp.

Landscape Architecture

Nieman, T.J., and Z.R. Merkin. Premining planning for postmining land use: Applying principles of comprehensive planning and landscape architecture to reclamation. Chapter 26, pp. 667-686. IN: R.I. Barnhisel, R.G. Darmody, and W.L. Daniels, eds. *Reclamation of Drastically Disturbed Lands*. American Society of Agronomy Inc., Crop Science Society of America Inc., Soil Science Society of America Inc., Madison, Wis.

Nutrition and Food Science

Chow, C.K. Vitamin E. pp. 165-196. IN: R. Rucker, J.W. Suttie, D.M. McCormick, and L.J. Machlin, eds. *Handbook of Vitamins*, 3rd ed. Marcel Dekker, New York.

Plant Pathology

Funnell, D.L., and C.L. Schardl. Biochemistry of plant defences against fungal attack. IN: *Encyclopedia of Life Sciences*. Macmillan Reference Ltd., Stockton Press, London.

Funnell, D.L., and C.L. Schardl. Plant defences against fungal attack: Recognition and signal transduction. IN: *Encyclopedia of Life Sciences*. Macmillan Reference Ltd., Stockton Press, London.

Ghabrial, S.A. Cryptoviruses. pp. 267-269. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 1. John Wiley and Sons, New York.

Ghabrial, S.A. Fungal viruses. pp. 478-483. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 1. John Wiley and Sons, New York.

Ghabrial, S.A. Virus. pp. 1082-1085. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 2. John Wiley and Sons, New York.

Ghabrial, S.A., R.F. Bozarth, K.W. Buck, G.P. Martelli, and R.G. Milne. Family Partitiviridae. pp. 503-513. IN: M.W.V. van Regenmortel et al., eds. *Virus Taxonomy: Seventh Report of the International Committee on Taxonomy of Viruses*. Academic Press, New York.

Ghabrial, S.A., and K.W. Buck. Genus Rhizidiovirus. pp. 239-240. IN: M.W.V. van Regenmortel et al., eds. *Virus Taxonomy: Seventh Report of the International Committee on Taxonomy of Viruses*. Academic Press, New York.

Hartman, J.R., T.P. Pirone, and M.A. Sall. *Pirone's Tree Maintenance*. Oxford University Press, New York. 545 pp.

Lesnaw, J.A., and S.A. Ghabrial. Tulip breaking. pp. 1048-1049. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 2. John Wiley and Sons, New York.

Lomonosoff, G.P., and S.A. Ghabrial. Comoviruses. pp. 239-242. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 1. John Wiley and Sons, New York.

Pirone, T.P. Aphids. pp. 49-50. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 1. John Wiley and Sons, New York.

Pirone, T.P. Indexing. pp. 570-571. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 1. John Wiley and Sons, New York.

Pirone, T.P. Meristem tip culture. p. 639. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 2. John Wiley and Sons, New York.

Pirone, T.P. Virus control. pp. 1085-1087. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 2. John Wiley and Sons, New York.

Pirone, T.P. Virus transmission—insect vectors. pp. 1163-1165. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 2. John Wiley and Sons, New York.

Roossinck, M.J., and S.A. Ghabrial. Cucumoviruses. pp. 270-273. IN: O. Maloy and T. Murray, eds. *Encyclopedia of Plant Pathology*. Vol. 1. John Wiley and Sons, New York.

Schardl, C.L. Symbiotic parasites and mutualistic pathogens: Clavicipitaceous symbionts of grasses. pp. 307-345. IN: J.W. Kronstad, ed. *Fungal Pathogens*. Kluwer Academic Publishers, Dordrecht, The Netherlands.

- Schardl, C.L., and H.H. Wilkinson. Hybridization and cospeciation hypotheses for the evolution of grass endophytes. pp. 63-83. IN: C.W. Bacon and J.F. White Jr., eds. *Microbial Endophytes*. Marcel Dekker Inc., New York and Basel.
- Vaillancourt, L.J., J. Wang, and R.M. Hanau. Genetic regulation of sexual compatibility in *Glomerella graminicola*. pp. 29-44. IN: D. Prusky, S. Freeman, and M. Dickman, eds. *Colletotrichum: Host Specificity, Pathology, and Host Pathogen Interaction*. APS Press, St. Paul, Minn.
- Wickner, R.B., S.A. Ghabrial, J.A. Bruenn, K. Buck, J.L. Patterson, K.D. Stuart, and C.C. Wang. Family *Totiviridae*. pp. 471-501. IN: M.W.V. van Regenmortel et al., eds. *Virus Taxonomy: Seventh Report of the International Committee on Taxonomy of Viruses*. Academic Press, New York.

Veterinary Science

- Bailey, E., E. Marti, D.G. Fraser, D.F. Antczak, and S. Lazary. Immunogenetics of the horse. pp. 123-156. IN: A.T. Bowling, and A. Ruvinsky, eds. *Genetics of the Horse*. CABI Publishing, Wallingford, United Kingdom.
- Cook, R.F., and C.J. Issel. Equine infectious anemia. IN: *Encyclopedia of Science and Technology*. McGraw-Hill.
- Donahue, J.M., and N.W. Williams. Emergent causes of placentitis and abortion. pp. 443-456. IN: P.J. Timoney, ed. *Veterinary Clinics of North America: Equine Practice. Emerging Infectious Diseases*. Vol. 16. W.B. Saunders, Philadelphia.
- Lang, D.G., and R.A. Smith. Poisonous higher plants. pp. 187-246. IN: Y.H. Hui, R.A. Smith, and D. Spoerke, eds. *Foodborne Disease Handbook*. Vol. 3. Marcel Dekker, New York.
- Powell, D.G. The significance of surveillance and reporting on the prevention and control of equine diseases. pp. 389-403. IN: P.J. Timoney, ed. *Veterinary Clinics of North America: Equine Practice. Emerging Infectious Diseases*. Vol. 16. W.B. Saunders Co., Philadelphia.
- Sandberg, K., and E.G. Cothran. Biochemical genetics and blood groups. pp. 85-108. IN: A.T. Bowling, and A. Ruvinsky, eds. *The Genetics of the Horse*. CABI Publishing, Wallingford, United Kingdom.
- Smith, R.A. Alkaloids. pp. 247-256. IN: Y.H. Hui, R.A. Smith, and D. Spoerke, eds. *Foodborne Disease Handbook*. Vol. 3. Marcel Dekker, New York.
- Timoney, P.J. Factors influencing the international spread of equine diseases. pp. 537-551. IN: P.J. Timoney, ed. *Veterinary Clinics of North America: Equine Practice. Emerging Infectious Diseases*. Vol. 16. W.B. Saunders, Philadelphia.
- Timoney, P.J. *Veterinary Clinics of North America: Equine Practice. Emerging Infectious Diseases*. Vol. 16. W.B. Saunders, Philadelphia.
- Tobin, T. *Furosemide in the Horse*. Wind Publications, Lexington.

Patents

Agronomy

- Li, Q., J. Yang, and C. VonLanken. Use of yeast poly(A) binding proteins and their genes for broad range protection of plants against bacterial, fungal, and viral pathogens. U.S. Patent Number 6,018,106.

Biosystems and Agricultural Engineering

- Wells, L.G., and J.P. Fulton. Soil regeneration apparatus and method. U.S. Patent Number 6,056,066. Issued May 2.

Progress Reports

- PR-427: 1999 *Alfalfa Grazing Tolerance Variety Report*. R. Spitaleri, J.C. Henning, G.D. Lacefield, C.T. Dougherty, J.E. Roberts, and T.A. Hamilton.
- PR-428: 1999 *Cool-Season Grass Grazing Tolerance Variety Report*. R. Spitaleri, J.C. Henning, G.D. Lacefield, C.T. Dougherty, J.E. Roberts, and T.A. Hamilton.

- PR-429: 1999 *Tall Fescue Report*. R. Spitaleri, J.C. Henning, T.D. Phillips, G.D. Lacefield, D.C. Ditsch, and G.A. Davis.
- PR-430: 1999 *Orchardgrass Report*. R. Spitaleri, J.C. Henning, T.D. Phillips, G.D. Lacefield, and D.C. Ditsch.
- PR-431: 1999 *Summer Forage Annuals*, R.S. Spitaleri, J.C. Henning, D.C. Ditsch, and G.D. Lacefield.
- PR-432: 2000 *Agronomy Research Report*. M. Barrett, ed.
- PR-433: 2000 *Kentucky Small Grain Variety Trials*. C.R. Tutt, C.S. Swanson, B. Mijatovic, and D.A. Van Sanford.
- PR-434: 2000 *Kentucky Hybrid Corn Performance Test*. William L. Pearce, C.G. Poneleit, and Philip Shine.
- PR-436: 2000 *Fruit and Vegetable Crops Research Report*. B. Rowell, ed.
- PR-437: 2000 *Nursery and Landscape Research Report*. D. Ingram, ed.
- PR-438: 2000 *Alfalfa Grazing Tolerance Variety Report*. R.F. Spitaleri, J.C. Henning, G.D. Lacefield, C.T. Dougherty, and J.E. Roberts.

Journal Articles

Agricultural Economics

- Anderson, J.D., and J.N. Trapp. Corn price effects on cost of grain for feedlot cattle: Implications for break-even budgeting. *Journal of Agricultural and Resource Economics*, 25: 669-679.
- Anderson, J.D., and J.N. Trapp. The dynamics of feeder cattle market responses to corn price change. *Journal of Agricultural and Applied Economics*, 32(3):493-505.
- Chambers, O., M. Reed, and W. Snell. Strategic behavior in the international burley tobacco market. *Journal of Policy Modeling*, 22(2):139-48.
- Freshwater, D. What can social scientists contribute to the challenges of rural development? *Journal of Agricultural and Applied Economics*, 32(2):345-355.
- Freshwater, D. Rural America at the turn of the century: One analyst's perspective. *Rural America*, 15(3):2-7.
- Hoagland, H., S. Hancock, and L.J. Maynard. Arbitrage opportunities in a thin futures market. *Journal of Agricultural and Applied Economics*, 32:411.
- Marchant, M., S. Saghaian, and S. Vickner. Trade and foreign direct investment management strategies for U.S. processed food firms in China. *International Food and Agribusiness Management Review*. 2:131-143.
- Maynard, L.J. Empirical tests of the argument that consumers value stable retail milk prices. *Journal of Agribusiness*, 18(2):155-172.
- Maynard, L.J. Impact of retail price volatility on U.S. fluid milk demand. *Journal of Agricultural and Applied Economics*, 32:40.
- Rupasingha, A., S. Goetz, and D. Freshwater. Social capital and economic growth: A county-level analysis. *Journal of Agricultural and Applied Economics*, 32(3):565-572.
- Skees, J.R. A role for capital markets in natural disasters: A piece of the food security puzzle. *Food Policy*, 25:365-378.
- Skees, J.R., P. Hazell, and M. Miranda. Nuovi approcci per le assicurazioni in agricoltura nei Paesi in via di sviluppo. *Rivista di Politic Agraria ANO XVIII (Italy)*, 31-52.
- Vickner, S.S., S. Davies, J.R. Fulton, and V.L. Vantreese. Estimating market power and pricing conduct for private label and national brands in a product-differentiated oligopoly: The case of a frozen vegetable market. *Journal of Food Distribution Research*, 31:26-38.
- Vickner, S.S., and S.P. Davies. Estimating strategic price response in a product-differentiated oligopoly: The case of a domestic canned fruit industry. *Agribusiness: An International Journal*, 16:125-140.
- Woods, T., and H. Hoagland. Diversifying agricultural systems: An external analysis of state value-added programs. *Journal of Food Distribution Research*, 31(1):204-214.
- Zeuli, K.A., and J. Skees. Will Southern agriculture play a role in a carbon market? *Journal of Agricultural and Applied Economics*, 32(2):235-248.

(In addition, members of the department published 17 abstracts.)

Agronomy

- Baskin, C.C., and J.M. Baskin. Ecology and evolution of specialized seed dispersal, dormancy and germination strategies: Introduction. *Plant Species Biology*, 15:95-96.
- Baskin, C.C., and J.M. Baskin. Seed germination ecology of *Lesquerella lyrata* (Brassicaceae): A federal-threatened winter annual. *Natural Areas Journal*, 20:159-165.
- Baskin, C.C., J.M. Baskin, and E.W. Chester. Studies on the ecological life cycle of the native winter annual grass *Alopecurus carolinianus*, with particular reference to seed germination biology in a floodplain habitat. *Journal of the Torrey Botanical Society*, 127:280-290.
- Baskin, C.C., J.M. Baskin, and E.W. Chester. Effect of flooding on the annual dormancy cycle and on germination of seeds of the summer annual *Schoenoplectus purshianus* (Cyperaceae). *Aquatic Botany*, 67:109-116.
- Baskin, C.C., P. Milberg, L. Andersson, and J.M. Baskin. Deep complex morphophysiological dormancy in seeds of *Anthriscus sylvestris* (Apiaceae). *Flora*, 195:245-251.
- Baskin, C.C., P. Milberg, L. Andersson, and J.M. Baskin. Germination studies of three dwarf shrubs (*Vaccinium*, Ericaceae) of Northern Hemisphere coniferous forests. *Canadian Journal of Botany*, 78:1-9.
- Baskin, J.M., and C.C. Baskin. Evolutionary considerations of claims for physical dormancy-break by microbial action and abrasion by soil particles. *Seed Science Research*, 10:409-413.
- Baskin, J.M., and C.C. Baskin. Vegetation of limestone and dolomite glades in the Ozarks and Midwest regions of the United States. *Annals of the Missouri Botanical Garden*, 87:286-294.
- Baskin, J.M., C.C. Baskin, and X. Li. Taxonomy, anatomy and evolution of physical dormancy in seeds. *Plant Species Biology*, 15:139-152.
- Baskin, J.M., J.L. Walck, C.C. Baskin, and D.E. Buchele. Ecology and conservation biology of the endangered plant species *Solidago shortii* Asteraceae. *Native Plants Journal*, 1:35-41.
- Bejat, L., E. Perfect, V.L. Quisenberry, M.S. Coyne, and G.R. Haszler. Solute transport as related to soil structure in unsaturated intact soil blocks. *Soil Science Society of America Journal*, 64:818-826.
- Bender, M.H., J.M. Baskin, and C.C. Baskin. Age of maturity and life span in herbaceous, polycarpic perennials. *Botanical Review*, 66:311-349.
- Bender, M.H., J.M. Baskin, and C.C. Baskin. Ecological life history of *Polymnia canadensis*, a species of the North American temperate deciduous forest: Demography. *Plant Ecology*, 147:117-136.
- Bhavsar, V.M., L.J. Grabau, and M.S. Smith. Peer review of teaching: Lessons learned from the University of Kentucky. *Journal of Natural Resources and Life Science Education*, 29:36-40.
- Bruening, W.P., and D.B. Egli. Leaf starch accumulation and seed set at phloem-isolated nodes in soybean. *Field Crops Research*, 68:113-120.
- Caruso, L.V., R.C. Pearce, and L.P. Bush. Development of float system tobacco plants after transplanting. *Agricoltura Mediterranea*, 130:103-112.
- Crotser, M.P., and W.W. Witt. Effect of *Glycine max* canopy characteristics, *G. max* interference, and weed-free period on *Solanum ptychanthum* growth. *Weed Science*, 48:20-26.
- D'Angelo, E.M., and K.R. Reddy. Aerobic and anaerobic transformations of pentachlorophenol in wetland soils. *Soil Science Society of America Journal*, 64:933-943.
- Diaz-Zorita, M., and J.H. Grove. Phosphorus management in no-till systems (Spanish). *Fertilizar Numero Especial "Siembra Directa"*, 8:15-19.
- Egli, D.B., and W.P. Bruening. Potential of early-maturing soybean cultivars in late plantings. *Agronomy Journal*, 92:532-537.
- Fernandez, D.E., G.R. Heck, S.E. Perry, S.E. Patterson, A.B. Bleecker, and S.-C. Fang. The embryo MADS domain factor AGL15 acts postembryonically: Inhibition of perianth senescence and abscission via constitutive expression. *The Plant Cell*, 12:183-197.
- Hage, Tanois G., Craig Seither, and David Hildebrand. Isolation of two cDNAs from *Vernonia galamensis* (Cass.) Less. Encoding a microsomal oleate desaturase (FAD2) (Accession No. AF188263 and AF188264) and functional expression in *Saccharomyces cerevisiae*. *Plant Physiology*, 122:1457.
- Hidayati, S.N., J.M. Baskin, and C.C. Baskin. Dormancy-breaking and germination requirements of seeds of four *Lonicera* species (Caprifoliaceae) with underdeveloped spatulate embryos. *Seed Science Research*, 10:459-469.
- Hidayati, S.N., J.M. Baskin, and C.C. Baskin. Dormancy-breaking and germination requirements for seeds of *Diervillea lonicera* (Caprifoliaceae), a species with underdeveloped linear embryos. *Canadian Journal of Botany*, 78:1199-1205.
- Hidayati, S.N., J.M. Baskin, and C.C. Baskin. Morphophysiological dormancy in seeds of two North American and one Eurasian species of *Sambucus* (Caprifoliaceae) with underdeveloped spatulate embryos. *American Journal of Botany*, 87:1669-1678.
- Hildebrand, D.F., M. Afithlile, and H. Fukushige. Regulation of oxylipin synthesis. *Biochemical Society Transactions*, 28:851-853.
- Hirschi, K.D., V. Korenkov, N. Wiganowski, and G.J. Wagner. Expression of Arabidopsis *CAX2* in tobacco: Altered metal accumulation and increased manganese tolerance. *Plant Physiology*, 124:125-133.
- Hunt, A.G., J. Das Gupta, Q. Li, K.P. Forbes, L.R. Meeks, and B.D. Mogen. Nuclear and chloroplast poly(A) polymerases from plants share a novel biochemical property. *Biochemical and Biophysical Research Communications*, 272:174-181.
- Jordi, W., A. Schapendonk, E. Davelaar, G.M. Stoop, C.S. Pot, R. deVisser, J.A. van Rhijn, S. Gan, and R.M. Amasino. Increased cytokinin levels in transgenic *PSAG12-IPT* tobacco plants have large direct and indirect effects on leaf senescence, photosynthesis and N partitioning. *Plant, Cell & Environment*, 23:279-289.
- Karathanasis, A.D. Colloid-mediated transport of Pb through soil porous media. *International Journal of Environmental Studies*, 57:579-596.
- Leuchtmann, A., D. Schmidt, and L.P. Bush. Different levels of protective alkaloids in grasses with stroma-forming and seed-transmitted *Epichloe/Neotyphodium* endophytes. *Journal of Chemical Ecology*, 26:1025-1036.
- Li, Q., C.D. VonLanken, J. Yang, C.B. Lawrence, and A.G. Hunt. The yeast polyadenylate binding protein (PABI) gene acts as a disease lesion mimic gene when expressed in plants. *Plant Molecular Biology*, 42:335-344.
- Mandujano-Chavez, A., M.A. Schoenbeck, L.F. Ralston, E. Lozoya-Gloria, and J. Chappell. Differential induction of sesquiterpene metabolism in tobacco cell suspension cultures by methyl jasmonate and fungal elicitor. *Archives of Biochemistry Biophysics*, 381:285-294.
- Moon, H., J. Hazebroek, and D.F. Hildebrand. Changes in fatty acid composition in plant tissues expressing a mammalian $\Delta 9$ desaturase. *Lipids*, 35:471-479.
- Mubiru, D.N., M.S. Coyne, and J.H. Grove. Mortality of *Escherichia coli* O157:H7 in two soils with different physical and chemical properties. *Journal of Environmental Quality*, 29:1821-1825.
- Okada, S., T.P. Devarenne, and J. Chappell. Molecular characterization of squalene synthase from the green microalga *Botryococcus braunii*, race B. *Archives of Biochemistry Biophysics*, 373:307-317.
- Pfeiffer, T.W. Selecting soybean for adaptation to double cropping on the basis of full season plant height. *Crop Science*, 40:387-390.
- Pfeiffer, T.W., D.L. Pilcher, E.C. Lacefield, and C.R. Tutt. Registration of '7499' soybean. *Crop Science*, 40:1829.
- Ren, Q., T.W. Pfeiffer, and S.A. Ghabrial. Relationship between soybean pubescence density and soybean mosaic virus field spread. *Euphytica*, 111:191-198.
- Rising, K.A., C.M. Starks, J.P. Noel, and J. Chappell. Demonstration of germacrene A as an intermediate in the 5-epi-aristolochene synthase catalysis. *Journal of the American Chemical Society*, 122:1861-1866.

- Shen, S., Q. Li, S.Y. He, K.R. Barker, D. Li, and A.G. Hunt. Conversion of compatible plant-microbe interactions into incompatible interactions by expression of the *Pseudomonas syringae* pv. *Syringae* 61 *hrmA* gene in transgenic tobacco plants. *The Plant Journal*, 23:205-214.
- Tang, S., D.M. Tekrony, D.B. Egli, and P. Cornelius. An alternative model to predict corn seed deterioration during storage. *Crop Science*, 40:463-470.
- Tang, S., D.M. Tekrony, M. Collins, and C. McKenna. Determination of high moisture in maize. *Seed Technology*, 22:43-58.
- Taylor, N.L., R.E. Mundell, and C. Mousset-Déclat. Registration of a ruffled leaflet tetraploid red clover genetic stock. *Crop Science*, 40:870.
- Van Sanford, D.A., C.S. Swanson, B. Mijatovic, and C.R. Tutt. Registration of 'KY 86C-61-8' wheat. *Crop Science*, 40:1495-1496.
- Walck, J.L., J.M. Baskin, and C.C. Baskin. Increased sensitivity to green light during transition from conditional dormancy to nondormancy in seeds of three species of *Solidago* (Asteraceae). *Seed Science Research*, 10:495-499.
- Wang, C., C.A. Zien, R. Welte, D.F. Hildebrand, and X. Wang. Involvement of phospholipase D in wound-induced accumulation of jasmonic acid in *Arabidopsis*. *The Plant Cell*, 12:2237-2246.
- Weber, J.B., and W.W. Witt. A proposal to standardize soil/solution herbicide distribution coefficients. *Weed Science*, 48:75-88.
- Wilkinson, H.H., M.R. Siegel, J.D. Blankenship, A.C. Mallory, L.P. Bush, and C.L. Schardl. Contribution of fungal loline alkaloids to protection from aphids in a grass-endophyte mutualism. *Molecular Plant-Microbe Interactions*, 13:1027-1033.
- Yan, B., M.S.S. Reddy, G.B. Collins, and R.D. Dinkins. Agrobacterium tumefaciens-mediated transformation of soybean [*Glycine max* (L.) Merrill.] using immature zygotic cotyledon explants. *Plant Cell Reports*, 19:1090-1097.

(In addition, members of the department published 133 abstracts.)

Animal Sciences

- Berberich, J.A., B.L. Knutson, H.J. Strobel, S. Tarhan, S.E. Nokes, and K.A. Dawson. Product selectivity shift in *Clostridium thermocellum* in the presence of compressed solvents. *Industrial and Engineering and Chemistry Research*, 39:4500-4505.
- Boatright, W.L., and K.S. Kim. Effect of electron microscopy fixation pH on the ultrastructure of soybean protein bodies. *Journal of Agricultural and Food Chemistry*, 48:302-304.
- Boatright, W.L., and Q. Lei. Headspace evaluation of methanethiol and dimethyl trisulfide in aqueous solutions of soy protein isolates. *Journal of Food Science*, 65:819-821.
- Bohnert, D.W., D.L. Harmon, B.T. Larson, C.J. Richards, and M.N. Streeter. Efficacy of laidlomycin propionate in low-protein diets fed to growing beef steers: Effects on steer performance and ruminal nitrogen metabolism. *Journal of Animal Science*, 78:173-180.
- Bullock, K.D., F.A. Thrift, D.K. Aaron, and J.K. Bertrand. Relationship between a bull's parental genetic merit differences and his progeny trait variability in Angus, Gelbvieh, and Limousin cattle. *Journal of Animal Science*, 78:2540-2546.
- Burns, P.D., S.H. Hayes, and W.J. Silvia. Effect of oxytocin on expression of cytosolic phospholipase A2 mRNA and protein in ovine endometrial tissue in vitro. *Domestic Animal Endocrinology*, 19:237-246.
- Cline, T.R., G.L. Cromwell, T.D. Crenshaw, R.C. Ewan, C.R. Hamilton, A.J. Lewis, D.C. Mahan, and L.L. Southern, NCR-42 Committee on Swine Nutrition. Further assessment of the dietary lysine requirement of finishing gilts. *Journal of Animal Science*, 78:987-992.
- Cromwell, G.L., T.R. Cline, J.D. Crenshaw, T.D. Crenshaw, R.A. Easter, R.C. Ewan, C.R. Hamilton, G.M. Hill, A.J. Lewis, D.C. Mahan, J.L. Nelsens, J.E. Pettigrew, T.L. Veum, and J.T. Yen, NCR-42 Committee on Swine Nutrition. Variability among sources and laboratories in analyses of wheat middlings. *Journal of Animal Science*, 78:2653-2658.
- Donovan, D.C., D.J. Schingoethe, R.J. Baer, J. Ryali, A.R. Hippen, and S.T. Franklin. Influence of dietary fish oil on conjugated linoleic acid and other fatty acids in milk fat from lactating dairy cows. *Journal of Dairy Science*, 83:2620-2628.
- Edgerton, L.A., M.A. Kaminski, and W.J. Silvia. Effects of progesterone and estradiol on uterine secretion of prostaglandin F₂ in response to oxytocin in ovariectomized sows. *Biology of Reproduction*, 62:365-369.
- Erbeznic, E., H.J. Strobel, and K.A. Dawson. Organization and sequence of histidine biosynthesis genes *hisH*, *-A*, *-F*, and *-IE* in *Thermoanaerobacter ethanolicus*. *Current Microbiology*, 40:140-142.
- Garrido R., A. Malecki, B. Hennig, and M. Toborek. Nicotine attenuates arachidonic acid-induced neurotoxicity in cultured spinal cord neurons. *Brain Research*, 861:59-68.
- Hagen, Chad D., Merlin D. Lindemann, and Ken W. Purser. Effect of dietary chromium tripicolinate on productivity of sows under commercial conditions. *Swine Health and Production*, 8(2):59-63.
- Hennig, B., P. Meerarani, P. Ramadass, B.A. Watkins, and M. Toborek. Fatty acid-mediated activation of vascular endothelial cells. *Metabolism*, 49:1006-1013.
- Hennig, B., R. Slim, M. Toborek, A. Malecki, and L.W. Robertson. Effects of lipids and antioxidants on PCB-mediated dysfunction of vascular endothelial cells. *Central European Journal of Public Health*, 8 Suppl:18-19.
- Hicks, C.L. What consumers demand from food packaging. *Food Today Directory-Agro Food Industry hi-tech*, 11:32-34.
- Hicks, C.L., C.E. Onuorah, and I. Surjawan. Use of hydrolyzed whey peptide to inhibit culture agglutination. *Journal of Dairy Science*, 83:1196-1202.
- Hill, G.M., G.L. Cromwell, T.D. Crenshaw, R. Dove, R.C. Ewan, D.A. Knabe, A.J. Lewis, G.W. Libal, D.C. Mahan, G.C. Shurson, L.L. Southern, and T.L. Veum, NCR-42 and S-145 Regional Swine Nutrition Committees. Growth promotion effects and plasma changes from feeding high dietary concentrations of zinc and copper to weaning pigs (regional study). *Journal of Animal Science*, 78:1010-1016.
- Jones, C.R., M. Ray, K.A. Dawson, and H.J. Strobel. High-affinity maltose binding and transport by the thermophilic anaerobe *Thermoanaerobacter ethanolicus* 39E. *Applied and Environmental Microbiology*, 66:995-1000.
- Krizbai, I.A., H. Bauer, A. Amberger, B. Hennig, H. Szabo, R. Fucks, and H.C. Bauer. Growth factor-induced morphological, physiological and molecular characteristics in cerebral endothelial cells. *European Journal of Cell Biology*, 79:594-600.
- Lee, Y.W., H. Kühn, B. Hennig, and M. Toborek. IL-4 induces apoptosis of endothelial cells through the caspase-3-dependent pathway. *FEBS Letters* 485:122-126.
- Lindemann, M.D., G.L. Cromwell, H.J. Monegue, H. Cook, K.T. Soltwedel, S. Thomas, and R.A. Easter. Feeding value of an enzymatically digested protein for early weaned pigs. *Journal of Animal Science*, 78:318-327.
- Liu, G. and Y.L. Xiong. Electrophoretic pattern, thermal denaturation and *in vitro* digestibility of oxidized myosin. *Journal of Agricultural and Food Chemistry*, 48:624-630.
- Liu, G. and Y.L. Xiong. Oxidatively induced chemical changes and interactions of mixed myosin, -lactoglobulin, and soy 7S globulin. *Journal of the Science of Food and Agriculture*, 80:1601-1607.
- Liu, G. and Y.L. Xiong. Thermal transitions and gelation of oxidatively modified myosin, -lactoglobulin, soy 7S globulin and their mixtures. *Journal of the Science of Food and Agriculture*, 80:1728-1734.
- Liu, G., Y.L. Xiong, and D.A. Butterfield. Chemical, physical, and gel-forming properties of oxidized myofibrillar, whey, and soy protein isolates. *Journal of Food Science*, 65:811-818.
- Lou, X., C. Wang, Y.L. Xiong, B. Wang, G. Liu, and S.D. Mims. Physicochemical stability of paddlefish (*Polyodon spathula*) meat under refrigerated and frozen storage. *Journal of Aquatic Food Product Technology*, 9(4):27-39.
- Lou, X., C. Wang, Y.L. Xiong, B. Wang, and S.D. Mims. The gelation characteristics of paddlefish (*Polyodon spathula*) surimi under different heating conditions. *Journal of Food Science*, 65:394-398.

- Ludden, P.A., D.L. Harmon, B.T. Larson and D.E. Axe. Influence of the novel urease inhibitor N-(n-butyl) thiophosphoric triamide (NBPT) on ruminant nitrogen metabolism. 1. In vitro urea kinetics and substrate digestion. *Journal of Animal Science*, 78:181-187.
- Ludden, P.A., D.L. Harmon, G.B. Huntington, B.T. Larson, and D.E. Axe. Influence of the novel urease inhibitor N-(n-butyl) thiophosphoric triamide (NBPT) on ruminant nitrogen metabolism. 2. Ruminal nitrogen metabolism, diet digestibility, and nitrogen balance in lambs. *Journal of Animal Science*, 78:188-198.
- Malecki, A., R. Garrido, M.P. Mattson, B. Hennig, and M. Toborek. 4-Hydroxynonenal induces oxidative stress and death of cultured spinal cord neurons. *Journal of Neurochemistry*, 74:2278-2287.
- Meerarani, P., P. Ramadass, M. Toborek, H.C. Bauer, H. Bauer, and B. Hennig. Zinc protects against apoptosis of endothelial cells induced by linoleic acid and tumor necrosis factor. *American Journal of Clinical Nutrition*, 71:81-87.
- Parkington, J.K., Y.L. Xiong, S.P. Blanchard, S. Xiong, B. Wang, S. Srinivasan, and G.W. Froning. Chemical and functional properties of oxidatively modified beef heart surimi stored at 2°C. *Journal of Food Science*, 65:428-433.
- Parkington, J.K., Y.L. Xiong, S.P. Blanchard, and S. Xiong. Functionality changes in oxidatively/antioxidatively washed beef heart surimi during frozen storage. *Journal of Food Science*, 65:796-800.
- Powell, D.M., L.M. Lawrence, B.P. Fitzgerald, K. Danielsen, A. Parker, P. Siciliano, and A. Crum. Effect of short term feed restriction and calorie source on hormonal and metabolic responses in geldings receiving a small meal. *Journal of Animal Science*, 78:3107-3113.
- Pratt, S.E., L.M. Lawrence, T. Barnes, D.M. Powell, and L. Warren. Measurement of ammonia concentrations in horse stalls. *Journal of Equine Veterinary Science*, 20:197-200.
- Schillo, K.K. Comments on the paper "Shrinking membership in the American Society of Animal Science: Does the discipline of poultry science give us some clues?" *Journal of Animal Science*, 78: 1691.
- Siciliano, P., L. Warren, L. Lawrence. Changes in vitamin K status of growing horses. *Journal of Equine Veterinary Science*, 20:726-729.
- Silvio, J., D.L. Harmon, K.L. Gross, and K.R. McLeod. Influence of fiber fermentability on nutrient digestion in the dog. *Nutrition*, 16:289-295.
- Slim, R., M. Toborek, L.W. Robertson, H.J. Lehmler, and B. Hennig. Cellular glutathione status modulates PCB-induced stress response and apoptosis in vascular endothelial cells. *Toxicology and Applied Pharmacology* 166:36-42.
- Strickling, J.A., D.L. Harmon, K.A. Dawson, and K.L. Gross. Evaluation of oligosaccharide addition to dog diets: Influences on nutrient digestion and microbial populations. *Animal Feed Science Technology*, 86:205-219.
- Swanson, K.C., J.C. Matthews, A.D. Wilson, J.A. Howell, C.J. Richards, and D.L. Harmon. Influence of dietary carbohydrate source and energy intake on pancreatic alpha amylase expression in lambs. *Journal of Nutrition*, 130:2157-2165.
- Swanson, K.C., D.L. Harmon, K.A. Jacques, B.T. Larson, C.J. Richards, D.W. Bohnert, and S.J. Lewis. Efficacy of chromium yeast for growing beef steers. *Animal Feed Science Technology*, 86:95-105.
- Thrift, F.A., M.E. Brown and T.A. Thrift. A review of genotype by environment interaction studies involving cattle varying in *Bos indicus* inheritance. *The Professional Animal Scientist*, 16:149-158.
- Thrift, F.A. A simple example illustrating adjustment for merit of mates in a national cattle evaluation program. *Journal of Animal Science*, 78:2475-2478.
- Toborek, M., R. Garrido, A. Malecki, S. Kaiser, M.P. Mattson, B. Hennig, and B. Young. Nicotine attenuates arachidonic acid-induced overexpression of nitric oxide synthase in cultured spinal cord neurons. *Experimental Neurology*, 161:609-620.
- Xiong, Y.L., X. Lou, C. Wang, W.G. Moody, and R.J. Harmon. Protein extraction from chicken myofibrils irrigated with various polyphosphate and NaCl solutions. *Journal of Food Science*, 65:96-100.
- Xiong, Y.L., X. Lou, R.J. Harmon, C. Wang, and W.G. Moody. Salt- and pyrophosphate-induced structural changes in myofibrils from chicken red and white muscles. *Journal of the Science of Food and Agriculture*, 80:1176-1182.
- Zhou, A., and W.L. Boatright. Precursors for the formation of 2-pentyl pyridine in processing of soybean protein isolates. *Journal of Food Science*, 65:1155-1159.

(In addition, members of the department published 75 abstracts.)

Biosystems and Agricultural Engineering

- Antonious, George, and R.C. Warner. Constructed wetlands for domestic wastewater treatment, surveying and performance in Kentucky. *Journal of Kentucky Academy of Science*, 61(1):23-29.
- Bridges, T.C., L.W. Turner, R.S. Gates, and E.M. Smith. Relativity of growth in laboratory and farm animals. Part 1: Representation of physiological age and the growth rate time constant. *Transactions of the American Society of Agricultural Engineers*, 43(6):1803-1810.
- Bridges, T.C., L.W. Turner, R.S. Gates, and E.M. Smith. Relativity of growth in laboratory and farm animals. Part 2: Birth weight as a predictor of animal maturity. *Transactions of the American Society of Agricultural Engineers*, 43(6):1811-1820.
- Brown-Brandt, T.M., J.A. Nienaber, L.W. Turner, and J.T. Yen. Manual and thermal induced heat stress restrictions on finishing barrows. I: Effects on growth, carcass composition, and feeding behavior. *Transactions of the American Society of Agricultural Engineers*, 43(4):987-992.
- Brown-Brandt, T.M., J.A. Nienaber, L.W. Turner, and J.T. Yen. Manual and thermal induced heat stress restrictions on finishing barrows. II: Effects on heat production, activity, and organ weights. *Transactions of the American Society of Agricultural Engineers*, 43(4):993-997.
- Burks, T.F., S.A. Shearer, R.S. Gates, and K.D. Donohue. Backpropagation neural network design and evaluation for classifying weed species using color image texture features. *Transactions of the American Society of Agricultural Engineers*, 43(4):1029-1037.
- Burks, T.F., S.A. Shearer, and F.A. Payne. Classification of weed species using color texture features and discriminant analyses. *Transactions of the American Society of Agricultural Engineers*, 43(2):441-448.
- Chao, K., R.S. Gates, and N. Sigrimis. Fuzzy logic controller design for staged heating and ventilating systems. *Transactions of the American Society of Agricultural Engineers*, 43(6):1885-1894.
- Cole, H.P., S. Westnear, S. Browning, L. Piercy, and T. Struttman. *Journal of the American Medical Women's Association*, 55(2):93-95.
- Colliver, D.G., and R.S. Gates. Effect of data period-of-record on estimation of HVAC&R design temperatures. *American Society of Heating, Refrigeration and Air-Conditioning Engineers Transactions*, 106(2):466-474.
- Colliver, D.G., R.S. Gates, T.F. Burks, and H. Zhang. Development of the design climatic data for the 1997 ASHRAE Handbook-Fundamentals (RP-890). *American Society of Heating, Refrigeration and Air-Conditioning Engineers Transactions*, 106(1):3-14.
- Croftcheck, C.L., F.A. Payne, C.L. Hicks, M.P. Mengüç, and S.E. Nokes. Fiber optic sensor response to low levels of fat in skim milk. *Journal of Food Process Engineering*, 23:163-175.
- Duncan, G.A., S.A. Shearer, B. Tapp, and C.L. King. A new floating spear mechanism for impaling burley tobacco plants onto a wooden stick. *Applied Engineering in Agriculture*, 15(5):383-387. 1999.
- Edwards, D.R., T.K. Hutchens, R.W. Rhodes, B.T. Larson, and L. Dunn. Quality of runoff from plots with simulated grazing. *Journal of American Water Resources Association*, 36(5):1063-1073.
- Edwards, D.R., B.T. Larson, and T.T. Lim. Nutrient and bacteria content of runoff from simulated grazed pasture. *Journal of American Water Resources Association*, 36(4):711-721.
- Malone, R.W., M.J. Shiptalo, L.W. Douglas, L.B. Owens, T. Nelsen, R.C. Warner, and M.E. Byers. Assessing herbicide movement using soil samples versus percolate samples. *Transactions of the American Society of Agricultural Engineers*, 43(2):343-348.
- Meshkat, M., R.C. Warner, and S.R. Workman. Evaporation reduction potential in an undisturbed soil irrigated with surface drip irrigation and sand tube irrigation. *Transactions of the American Society of Agricultural Engineers*, 43(1):79-86.

- Molenda, M., S.A. Thompson, and I.J. Ross. Friction of wheat on corrugated and smooth galvanized steel surfaces. *Journal of Agricultural Engineering Research*, 77(2):209-219.
- Montross, M.D., and D.E. Maier. Simulated performance of conventional high-temperature drying, dryeration, and combination drying of shelled corn with automatic conditioning. *Transactions of the American Society of Agricultural Engineers*, 43(3):691-699.
- Montross, M.D., and D.E. Maier. Reconditioning corn and soybeans to optimal processing moisture contents. *Applied Engineering in Agriculture*, 16(5):527-535.
- Moss, C.G., D.R. Edwards, S.R. Workman, and M. Williams. Runoff from fescue plots treated with Trimec. *Transactions of the American Society of Agricultural Engineers*, 42(6):1631-1636. 1999.
- O'Callaghan, D.J., C.P. O'Donnell, and F.A. Payne. On-line sensing techniques for coagulum setting in renneted milks. *Journal of Food Engineering*, 43:155-65.
- Patterson, J.M., and S.E. Nokes. Incorporation of chlorothalonil persistence on processing tomato into TOM-CAST. *Agricultural Systems Journal*, 64(3):171-181.
- Senay, G.B., A.D. Ward, J.G. Lyon, N.R. Fausey, S.E. Nokes, and L.C. Brown. The relations between spectral data and water in a crop production environment. *International Journal of Remote Sensing*, 21(9):1897-1910.
- Sigrimis, N.A., K.G. Arvanitis, and R.S. Gates. A learning technique for a general purpose optimizer. *Computers and Electronics in Agriculture*, 26(2):83-103.
- Stombaugh, T.S., and S.A. Shearer. Equipment technologies for precision agriculture. *Journal of Soil and Water Conservation*, 55(1):6-11.
- Turner, L.W., M.C. Udal, B.T. Larson, and S.A. Shearer. Monitoring cattle behavior and pasture use with GPS and GIS. *Canadian Journal of Animal Science*, 80(3):405-413.
- White, K.L., L.G. Wells, S.A. Shearer, and L.R. Piercy. Design modifications to reduce risk of operating rotary field mowers. *Journal of Agricultural Safety and Health*, 6(4):249-259.
- Zolnier, S., R.S. Gates, J. Buxton, and C. Mach. Psychrometric and ventilation constraints for vapor pressure deficit control. *Computers and Electronics in Agriculture*, 26(3):343-359.
- (In addition, members of the department published 7 abstracts.)
- Entomology**
- Bauernfeind, R.J., K.F. Haynes, and D.A. Potter. Responses of three *Cyclocephala* (Coleoptera: Scarabaeidae) species to hexane extracts of *Cyclocephala lurida* sex pheromone. *Journal of the Kansas Entomological Society*, 72(2):246-247.
- Briceño, G., A. Rosa, and Michael J. Sharkey. *Bassus macadamiae* sp. n. (Hymenoptera: Braconidae: Agathidinae), parasitoid of *Ecdytophaga torticornis* and *E. aurantium* (Lepidoptera: Tortricidae) in macadamia nut crops in Central and South America. *Journal of Hymenoptera Research*, 9(1):99-103.
- Cui, Liwang, Ana I. Soldevila, and Bruce A. Webb. Relationships between polydnavirus gene expression and host range of parasitoid wasp *Campoletis sonorensis*. *Journal of Insect Physiology*, 46:1397-1407.
- Deng, Lanqian, Don B. Stoltz, and Bruce A. Webb. A gene encoding a polydnavirus structural polypeptide is not encapsidated. *Virology*, 269:440-450.
- Eliason, Eileen A., and Daniel A. Potter. Biology of *Callirhytis cornigera* (Hymenoptera: Cynipidae) and the arthropod community inhabiting its galls. *Environmental Entomology*, 29(3):551-559.
- Eliason, Eileen A., and Daniel A. Potter. Budburst phenology, plant vigor, and host genotype effects on the leaf-galling generation of *Callirhytis cornigera* (Hymenoptera: Cynipidae) on pin oak. *Environmental Entomology*, 29(6):1199-1207.
- Eliason, Eileen A., and Daniel A. Potter. Dogwood borer (Lepidoptera: Sesiidae) infestation of horned oak galls. *Journal of Economic Entomology*, 93(3):757-762.
- Eliason, Eileen A., and Daniel A. Potter. Impact of whole-canopy and systemic insecticidal treatments on *Callirhytis cornigera* (Hymenoptera: Cynipidae) and associated parasitoids on pin oak. *Journal of Economic Entomology*, 93(1):165-171.
- Fox, Charles W. Maternal effects in insect-plant interactions: Lessons from a desert seed beetle. *Recent Research Developments in Entomology*, 3:71-93.
- Fox, Charles W. Natural selection on seed-beetle egg size in nature and the laboratory: Variation among environments. *Ecology*, 81(11):3029-3035.
- Fox, Charles W., and Mary Ellen Czesak. Evolutionary ecology of progeny size in arthropods. *Annual Review of Entomology*, 45:341-369.
- Fox, Charles W., and Udo M. Savalli. Maternal effects mediate host expansion in a seed-feeding beetle. *Ecology*, 81(1):3-7.
- Freytag, Paul H. The genus *Kunzella* and a closely related new genus *Youngszella* (Homoptera: Cicadellidae). *Entomological News*, 111(4):255-258.
- Freytag, Paul H. A new species of *Coelidiana* (Homoptera: Cicadellidae) from the Galapagos Islands. *Entomological News*, 111(5):325-327.
- Gemeno, César, and Kenneth F. Haynes. Periodical and age-related variation in chemical communication system of black cutworm moth, *Agrotis ipsilon*. *Journal of Chemical Ecology*, 26(2):329-342.
- Gemeno, César, Adel F. Lutfallah, and Kenneth F. Haynes. Pheromone blend variation and cross-attraction among populations of the black cutworm moth (Lepidoptera: Noctuidae). *Annals of the Entomological Society of America*, 93(6):1322-1328.
- Gemeno, César, Kenneth V. Yeargan, and Kenneth F. Haynes. Aggressive chemical mimicry by the bolas spider *Mastophora hutchinsoni*: Identification and quantification of a major prey's sex pheromone components in the spider's volatile emissions. *Journal of Chemical Ecology*, 26(5):1235-1243.
- Lawrence, Kendra L., and David H. Wise. Spider predation on forest-floor Collembola and evidence for indirect effects on decomposition. *Pedobiologia*, 44:33-39.
- López, Rolando, and Daniel A. Potter. Ant predation on eggs and larvae of the black cutworm (Lepidoptera: Noctuidae) and Japanese beetle (Coleoptera: Scarabaeidae) in turfgrass. *Environmental Entomology*, 29(1):116-125.
- López, Rolando, David W. Held, and Daniel A. Potter. Management of a mound-building ant, *Lasius neoniger* Emery, on golf putting greens and tees using delayed-action baits or Fipronil. *Crop Science*, 40:511-517.
- Miller, Donald G., and Michael J. Sharkey. An inquiline species of *Tamalia* co-occurring with *Tamalia coweni* (Homoptera: Aphididae). *Pan-Pacific Entomologist*, 76(2):77-86.
- Moya-Laraño, Jordi, and David H. Wise. Survival regression analysis: A powerful tool for evaluating fighting and assessment. *Animal Behaviour*, 60:307-313.
- Newton, B.L., and M.J. Sharkey. A new species of *Bassus* (Hymenoptera: Braconidae: Agathidinae) parasitic on *Samea multiplicalis*, a natural control agent of waterlettuce. *Florida Entomologist*, 83(3):284-289.
- Rieske, L.K. Pine weevil (Coleoptera: Curculionidae) population monitoring in Christmas trees using volatile host compounds. *Journal of Entomological Science*, 35(2):167-175.
- Rowe II, William J., and Daniel A. Potter. Shading effects on susceptibility of *Rosa* spp. to defoliation by *Popillia japonica* (Coleoptera: Scarabaeidae). *Environmental Entomology*, 29(3):502-508.
- Savalli, Udo M., Mary Ellen Czesak, and Charles W. Fox. Paternal investment in the seed beetle *Callosobruchus maculatus* (Coleoptera: Bruchidae): Variation among populations. *Annals of the Entomological Society of America*, 93(5):1173-1178.
- Sharkey, Michael J., Kathie Finnell, Jason Leathers, and Jorge Frana. Microgastrine (Hymenoptera: Braconidae) parasitoids of *Colias lesbia* (Fabricius) (Lepidoptera: Pieridae). *Journal of Hymenoptera Research*, 9(1):108-110.
- Shelby, Kent S., Olushola A. Adeyeye, B. Moses Okot-Kotber, and Bruce A. Webb. Parasitism-linked block of host plasma melanization. *Journal of Invertebrate Pathology*, 75:218-225.

- Skillen, Elizabeth Lockard, John Pickering, and Michael Joseph Sharkey. Species richness of the Campopleginae and Ichneumoninae (Hymenoptera: Ichneumonidae) along a latitudinal gradient in eastern North American old-growth forests. *Environmental Entomology*, 29(3):460-466.
- Snyder, William E., and David H. Wise. Antipredator behavior of spotted cucumber beetles (Coleoptera: Chrysomelidae) in response to predators that pose varying risks. *Environmental Entomology*, 29(1):35-42.

(In addition, members of the department published 8 abstracts.)

Forestry

- Arthur, M.A., and R.D. Yanai. Distinguishing the effects of environmental stress and forest succession on changes in the forest floor. *Korean Journal of Ecology*, 23:83-88.
- Duloher, N.C., R.K. Kolka, and M.R. McKeulin. Effects of a willow over story planted seedlings in a bottomland restoration. *Ecological Engineering*, 15:57-66.
- Giardina, C.P., and C.C. Rhoades. Clear cutting and burning affect nitrogen supply, phosphorus fractions, and seedling growth in soils from a Wyoming lodgepole pine forest. *Forest Ecology and Management*, 140:19-28.
- Giese, L.A., W.M. Aust, C.C. Trettin, and R.K. Kolka. Spatial and temporal patterns of carbon storage in a coastal plain riparian forest. *Ecological Engineering*, 15:157-170.
- Grigal, D.F., R.K. Kolka, J.A. Fleck, and E.A. Nater. Mercury budget of an upland-peatland watershed. *Biogeochemistry*, 50:95-109.
- Hutchinson, J.T., and M.J. Lacki. Selection of day roosts by red bats in mixed mesophytic forests. *Journal of Wildlife Management*, 64:87-94.
- Hutchinson, J.T., and M.J. Lacki. Roosting behavior and foraging activity of a female red bat with nonvolant young. *Bat Research News*, 41:36-38.
- Jones, B., and P.J. Kalisz. Earthworms (*Bligochaetia: Lumbricidae*) in high-maintenance and low-maintenance lawns in Lexington, Kentucky. *Journal of the Kentucky Academy of Science*, 61(1):1-5.
- Kalisz, P.J., and J.E. Powell. Invertebrate macrofauna under old growth and minimally disturbed second growth forests of the Appalachian Mountains of Kentucky. *American Midland Naturalist*, 144(2):297-307.
- Kalisz, P.J., and J.E. Powell. Effect of prescribed fire on soil invertebrates in upland forests on the Cumberland Plateau of Kentucky, U.S.A. *Natural Areas Journal*, 20(4):336-341.
- Kolka, R.K., E.A. Nelson, and C.C. Trettin. Conceptual assessment framework for forested wetland restorations: The Pen Branch experience. *Ecological Engineering*, 15:17-21.
- Kolka, R.K., J.H. Singer, C.R. Coppock, W.P. Casey, and C.C. Trettin. Influence of restoration and succession on bottomland hardwood hydrology. *Ecological Engineering*, 15:131-140.
- Lacki, M.J. Surveys of bird communities on Little Black and Black Mountains: Implications for long-term conservation of montane birds in Kentucky. *Journal of the Kentucky Academy of Science*, 61:50-59.
- Lacki, M.J. Effect of trail users at a maternity roost of Rafinesque's big-eared bats. *Journal of Cave and Karst Studies*, 62:163-168.
- Lacki, M.J., and K.M. LaDeur. Seasonal use of Lepidopteran prey by Rafinesque's big-eared bats (*Corynorhinus rafinesquii*). *American Midland Naturalist*, 145:213-217.
- Lochmiller, R.L., and D.S. Maehr. Easing the burden through higher writing standards. *Journal of Wildlife Management*, 64:320-321.
- McEwan, R.W., R.N. Muller, M.A. Arthur, and H.H. Housman. Temporal and ecological patterns of flowering dogwood mortality in the mixed mesophytic forest of eastern Kentucky. *Journal of the Torrey Botanical Society*, 127:221-229.
- Nelson, E.A., N.C. Duloher, R.K. Kolka, and W.H. McKee Jr. Operational restoration of the Pen Branch bottomland hardwood and swamp wetlands. *Ecological Engineering*, 15:23-33.

- Retzlaff, W.A., M.A. Arthur, N.E. Grulke, D.A. Weinstein, and B. Golland. Predicting the effects of ozone and drought on the growth of a mature white fir tree. *Tree Physiology*, 20:195-202.
- Rhoades, C.C., G.E. Eckert, and D.C. Coleman. Soil carbon changes among forest, agriculture, and secondary vegetation in lower Montane Ecuador. *Ecological Applications*, 10:497-505.
- Washburn, B.E., and T.G. Barnes. Post-emergence tall fescue (*Festuca arundinacea*) control at different growth stages with glyphosate and AC 263, 222. *Weed Technology*, 14:223-240.
- Washburn, B.E., and T.G. Barnes. Native warm-season grass and forb tolerance to imazapic and 2,4-D. *Native Plant Journal*, 1:61-68.
- Yanai, R.D., M.A. Arthur, T.G. Siccama, and C.A. Federer. Forest floor organic matter following logging in northern hardwood forest. *Forest Ecology and Management*, 138:273-283.

(In addition, members of the department published 31 abstracts.)

Horticulture

- Downie, B., and Bewley, J.D. Soluble carbohydrate metabolism in white spruce (*Picea glauca* [Moench.] Voss.) seeds during germination. *Physiologia Plantarum*, 109:1-12.
- Finneseth, C.L.H., D.R. Layne, and R.L. Geneve. Establishment of North American pawpaw [*Asimina triloba* (L.) Dunal] shoots in vitro from mature and juvenile explants. *Acta Horticulturae*, 520:97-102.
- Hardy, J., B.K. Behe, S.S. Barton, T.J. Page, R.E. Schutzki, K. Muzii, R.T. Fernandez, M.T. Haque, J. Brooker, C.R. Hall, R. Hinson, P. Knight, R. McNeil, D.B. Rowe, and C. Safley. Consumers' preferences for plant size, type of plant material and design sophistication in residential landscaping. *Journal of Environmental Horticulture*, 18(4):224-230.
- McNeil, R.E. Changes in the cost of production of field-grown nursery plants in USDA plant hardiness zones 5 and 6 since 1985. Part 14. IN: N.S.P. de Groot, E.H.J.M. de Kleijn, A.A. Cszinsky, and J. Weerts, eds. Proceedings, XXV International Horticultural Congress, Brussels, Belgium. *Acta Horticulturae*, 524:17-25.
- Williams, M.A., Yasuyo Johzuka, and R.M. Mulligan. Addition of nongenomically encoded nucleotides to the 3' terminus of maize mitochondrial mRNAs: Truncated *rps12* mRNAs frequently terminate with CCA. *Nucleic Acids Research*, 28(22):4444-51.
- Yu, K., T.R. Hamilton-Kemp, D.D. Archbold, R.W. Collins, and M.C. Newman. Volatile compounds from *Escherichia coli* O157:H7 and their absorption by strawberry fruit. *Journal of Agricultural and Food Chemistry*, 48:413-417.

Nutrition and Food Science

- Chow, C.K. Sustaining the development and growth of health foods. *Food Science and Agricultural Chemistry*, 2:121-134.
- Hong, J.T., and H.P. Glauert. Effect of extracellular matrix on the expression of peroxisome proliferation associated genes in cultured rat hepatocytes. *Toxicology in Vitro*, 14:177-184.
- Ibrahim, W., H. Bhagavan, R. Chopra, and C.K. Chow. Dietary coenzyme Q10 and vitamin E alters concentrations of coenzyme Q and vitamin E in rat tissues and mitochondria. *Journal of Nutrition*, 130:2343-2348.
- Ibrahim, W., U.S. Lee, H.C. Yen, D.K. St. Clair, and C.K. Chow. Oxidative stress and antioxidant status of manganese-superoxide dismutase transgenic mice. *Free Radical Biology and Medicine*, 28:397-402.
- Li, Y., H.P. Glauert, and B.T. Spear. Activation of NF- κ B by the peroxisome proliferator ciprofibrate in H4IIEC3 rat hepatoma cells and its inhibition by the antioxidants N-acetyl cysteine and vitamin E. *Biochemical Pharmacology*, 59:427-434.
- Li, Y., J. Tharappel, S. Cooper, M. Glenn, H.P. Glauert, and B.T. Spear. Expression of the hydrogen peroxide-generating enzyme fatty acyl CoA oxidase activates NF- κ B. *DNA and Cell Biology*, 19:113-120.
- Xi, S., and L.H. Chen. Effects of dietary fish oil on tissue glutathione and antioxidant defense enzymes in mice with murine AIDS. *Nutrition Research*, 20:1287-1299.

(In addition, members of the department published 14 abstracts.)

Plant Pathology

- Hartman, J.R., J.-P. Paulin, L. Parisi, and S. Thompson. INRA and apple disease research in the Loire Valley region of France. *Plant Disease*, 84:928-936.
- Lesnaw, J.A., and S.A. Ghabrial. Tulip breaking: Past, present, and future. *Plant Disease*, 84:1052-1060.
- Moon, C.D., B. Scott, C.L. Schardl, and M.J. Christensen. Evolutionary origins of *Epiclloë* endophytes from annual ryegrasses. *Mycologia*, 92:1103-1118.
- Nagy, P.D., and J. Pogany. Partial purification and characterization of *Cucumber necrosis virus* and *Tomato bushy stunt virus* RNA-dependent RNA polymerases: Similarities and differences in template usage between tobamovirus and carmovirus RNA-dependent RNA polymerases. *Virology*, 276:279-288.
- Ren, Q., T.W. Pfeiffer, and S.A. Ghabrial. Relationship between soybean pubescence intensity and soybean mosaic virus field spread. *Euphytica*, 111:191-198.
- Soldevila, A., and S.A. Ghabrial. Expression of the totivirus *Helminthosporium victoriae* 190S Virus RNA-dependent RNA polymerase from its downstream open reading frame in dicistronic constructs. *Journal of Virology*, 74:997-1003.
- Soldevila, A., and S.A. Ghabrial. A novel alcohol oxidase/RNA-binding protein with affinity for mycovirus double-stranded RNAs from the filamentous fungus *Helminthosporium (Cochliobolus) victoriae*: Molecular and functional characterization. *Journal of Biological Chemistry*. Published online on October 30 as a JBC Paper in Press (10.1074/jbc.M007701200), and can be seen at <www.jbc.org>.
- Soldevila, A., W.M. Havens, and S.A. Ghabrial. A cellular protein with an RNA-binding activity co-purifies with viral dsRNA from mycovirus-infected *Helminthosporium victoriae*. *Virology*, 251:327-333.
- Thon, M.R., and L.J. Vaillancourt. Restriction-enzyme mediated integration (REMI) used to produce pathogenicity mutants of *Colletotrichum graminicola*. *Molecular Plant-Microbe Interactions*, 13:1356-1365.
- Thornbury, D.W., and M.L. Farman. Re-use of nylon membranes for radioactive hybridizations. *Biotechniques*, 29:1250-1254.
- Vaillancourt, L.J., M. Du, J. Wang, J. Rollins, and R. Hanau. Genetic analysis of mating compatibility between two self-sterile strains of *Glomerella graminicola*. *Mycologia*, 92:430-435.
- Vaillancourt, L.J., and J.R. Hartman. Apple scab. The Plant Health Instructor. COL:10.1094/PHI-1-2000-1005-01. (This is an online "Lesson" prepared for APSnet and is located under APS educational resources.)
- Vincelli, P., E. Dixon, and D. Williams. Efficacy of fungicides for control of brown patch, anthracnose, and red leaf spot on creeping bentgrass. *Fungicide and Nematicide Tests*, 55:504-505.
- Vincelli, P., E. Dixon, and D. Williams. Efficacy of fungicides for control of dollar spot of creeping bentgrass, 1999. *Fungicide and Nematicide Tests*, 55:506-507.
- Vincelli, P., E. Dixon, and D. Williams. Efficacy of fungicides on maintenance of turf quality of creeping bentgrass, 1999. *Fungicide and Nematicide Tests*, 55:508-509.
- Vincelli, P., E. Dixon, and D. Williams. Efficacy of fungicides for control of gray leaf spot of perennial ryegrass, 1999. *Fungicide and Nematicide Tests*, 55:529-530.
- Vincelli, P., J. Henning, T. Hendrick, J. Brown, L.J. Osborne, B. Prewitt, V. Shields, D. Sorrell, K.D. Strohmeier, R. Tackett, and J.W. Wyles. Improved seedling health, yield, and stand persistence with *Aphanomyces* root rot-resistant alfalfa following natural epidemics. *Journal of Agronomy*, 92:1071-1076.
- Vincelli, P., R. Spitaleri, and J. Henning. Evaluation of selected alfalfa cultivars and breeding lines for resistance to *Sclerotinia* crown and stem rot, 1998-1999. *Biological Culture Tests for Control of Plant Diseases*, 14:22.
- Wilkinson, H.H., M.R. Siegel, J.D. Blankenship, A.C. Mallory, L.P. Bush, and C.L. Schardl. Contribution of fungal loline alkaloids to protection from aphids in a grass-endophyte mutualism. *Molecular Plant-Microbe Interactions*, 13:1027-1033.

Yoshinari, S., P.D. Nagy, A.E. Simon, and T.W. Dreher. CCA initiation boxes without unique promoter elements support *in vitro* transcription by three viral RNA-dependent RNA polymerases. *RNA*, 6:698-707.

(In addition, members of the department published 22 abstracts.)

Rural Sociology

- Burmeister, L.L. Dismantling statist east Asian agricultures? Global pressures and national responses. *World Development*, 28:443-455.
- Dyk, P., and S. Wilson. Family based social capital considerations as predictors of attainments among Appalachian youth. *Sociological Inquiry*, 69:477-503.
- Garkovich, L., P. Dyk, and W. Crist. Kentucky dairy farms and tobacco production. Research in Rural Sociology and Development: Dairy Industry Restructuring 8.
- Garkovich, L., W. Crist, and P. Dyk. Kentucky dairy farms and tobacco production. pp. 291-307. IN: *Research in Rural Sociology*, Vol. 8. Elsevier Science Inc.
- Larson, O.F., and J. Zimmerman. The USDA's Bureau of Agricultural Economics and Sociology Studies of Rural Life and Agricultural Issues. *Agricultural History*, 74:227-240.

Veterinary Science

- Al-Ghamdi, G.M., V. Kapur, T.R. Ames, J.F. Timoney, D.N. Lane, and M.A. Mellencamp. Use of repetitive sequence-based polymerase chain reactions for molecular epidemiologic analysis of *Streptococcus equi* subspecies *equi*. *American Journal of Veterinary Research*, 61:699-705.
- Anzai, T., J.A. Walker, M.B. Blair, T.M. Chambers, and J.F. Timoney. Comparison of the phenotypes of *Streptococcus zooepidemicus* isolated from tonsils of healthy horses and specimens obtained from foals and donkeys with pneumonia. *American Journal of Veterinary Research*, 61:162-166.
- Bailey, E., J. Mickelson, K. Røed, G. Lindgren, W. von Haerigen, G. Guérin, J. Bjornasson, W.R. Allen, and M. Binns. First comprehensive low-density horse linkage map based on two, three-generation, full-sibling, cross-bred horse reference families. *Genomics*, 66:123-134.
- Bailey, E., L. Skow, D. Bernoco, A. DelValle, M.D.P. Scavone, A.T. Bowling, and J.D. Murray. Equine dinucleotide repeat loci LEX071 through LEX078. *Animal Genetics*, 31:286-287.
- Bair, H.D., E.T. Lyons, T.W. Swerczek, and S.C. Tolliver. Atypical specimens of helminth parasites (*Anoplocephala perfoliata* and *Thelazia lacrymalis*) of horses in Kentucky, U.S.A. *Comparative Parasitology*, 67:258-260.
- Bentz, B.G., L. Dirikolu, W.G. Carter, W. Saville, N.W. Williams, W.V. Bernard, C. Wulff-Strobel, C.B. Baker, S. McCrillis, S. Reed, J.D. Harkins, D.E. Granstrom, and T. Tobin. Diclazuril and equine protozoal myeloencephalitis (EPM): A clinical report. *Equine Veterinary Education*, 2:258-263.
- Bosken, J.M., A.F. Lehner, A. Hunsucker, J.D. Harkins, W.E. Woods, W. Karpiesiuk, W.G. Carter, J. Boyles, M. Fisher, and T. Tobin. Direct MS-MS identification of isoxsuprine-glucuronide in post-administration equine urine. *Canadian Journal of Veterinary Research*, 64:112-116.
- Cole, R.A., D.S. Lindsay, D.K. Howe, C.L. Roderick, J.P. Dubey, L. Baeten, and N.J. Thomas. Biological and molecular characterizations of *Toxoplasma gondii* isolates obtained from southern sea otters (*Enhydra lutris nereis*). *Journal of Parasitology*, 86:526-530.
- Del Piero, F., P.A. Wilkins, P.J. Timoney, J. Kadushin, H. Vogelbacker, J.W. Lee, S.J. Berkowitz, and K.M.D. La Perle. Fatal non-neurological EHV-1 infection in a yearling filly. *Veterinary Pathology*, 37:672-676.
- Dirikolu, L., A.F. Lehner, W.E. Woods, W. Karpiesiuk, W. Carter, J.D. Harkins, J. Boyles, M. Fisher, and T. Tobin. Identification of lidocaine and its metabolites in post-administration equine urine by ELISA and MS/MS. *Journal of Veterinary Pharmacology and Therapeutics*, 23:215-222.

- Fitzgerald, B.P., L.A. Davison, and C.J. McManus. Evidence for a seasonal variation in the ability of exogenous melatonin to suppress prolactin secretion in the mare. *Domestic Animal Endocrinology*, 18:395-408.
- Fitzgerald, B.P., and C.J. McManus. Photoperiodic versus metabolic signals as determinants of seasonal anestrus in the mare. *Biology of Reproduction*, 63:335-340.
- Friday, P.A., W.K. Scarratt, F. Elvinger, P.J. Timoney, and A. Bonda. Ataxia and paresis with equine herpesvirus type 1 infection in a herd of riding school horses. *Journal of Veterinary Internal Medicine*, 14:197-201.
- Hammond, S.A., F. Li, B.M. Sr. McKeon, S.J. Cook, C.J. Issel, and R.C. Montelaro. Immune responses and viral replication in long-term inapparent carrier ponies inoculated with equine infectious anemia virus. *Journal of Virology*, 74:5968-5981.
- Harkins, J.D., W. Karpiesiuk, T. Tobin, L. Dirikolu, and A.F. Lehner. Identification of hydroxypropivaciane glucuronide in equine urine by ESI + / MS/MS. *Canadian Journal of Veterinary Research*, 64:178-182.
- Harkins, J.D., N.E. Robinson, W.E. Woods, A.F. Lehner, M.D. Smith, R.S. Gates, M. Fisher, and T. Tobin. Intratracheal clenbuterol in the horse: Its pharmacological efficacy and analytical detection. *Journal of Veterinary Pharmacology and Therapeutics*, 23:251-260.
- Harrold, S.M., S.J. Cook, R.F. Cook, K.E. Rushlow, C.J. Issel, and R.C. Montelaro. Tissue sites of persistent infection and active replication of equine infectious anemia virus during acute disease and asymptomatic infection in experimentally infected equids. *Journal of Virology*, 74:3112-3121.
- Hong, C.B., A.M. Fredenburg, K.M. Dickey, M.A. Lovell, and R.A. Yokel. Glomerular lesions in male rabbits treated with aluminum lactate: With special reference to microaneurysm formation. *Experimental and Toxicologic Pathology*, 52:139-143.
- Katz, J.B., L.E. Evans, D.L. Hutto, L.C. Schroeder-Tucker, A.M. Carew, J.M. Donahue, and D.C. Hirsh. Clinical, bacteriologic, serologic, and pathologic features of infections with atypical *Taylorella equitenitalis* in mares. *Journal of the American Veterinary Medical Association*, 216:1945-1948.
- Kumar, P., and J.F. Timoney. Light and electron microscopic studies on the nasopharynx and nasopharyngeal tonsil of the horse. *Anatomia, Histologia, Embryologia*, 30:1-8.
- Kumar, P., J.F. Timoney, M.M.P. Southgate, and A.S. Sheoran. Light and scanning electron microscopic studies of the nasal turbinates of the horse. *Anatomia, Histologia, Embryologia*, 29:103-109.
- Lear, T.L., F. Piumi, R. Terry, G. Guérin, and E. Bailey. Physical mapping of horse *v-fes* feline sarcoma viral oncogene homologue: Pyruvate kinase, muscle type; plasminogen; beta spectrin, nonerythrocytic 1; thymidilate synthetase, and microsatellite LEX078 to 1q14-q15, 1q21, 31q12-q14, 15q22, 8q12-q14, 14qter, respectively. *Chromosome Research*, 8:361.
- Lehner, A.F., P. Almeida, J. Jacobs, J.D. Harkins, W. Karpiesiuk, W.E. Woods, L. Dirikolu, J.M. Bosken, W.G. Carter, J. Boyles, C. Holtz, T. Heller, C. Nattrass, M. Fisher, and T. Tobin. Remifentanil in the horse: Identification and detection of its major urinary metabolite. *Journal of Analytical Toxicology*, 24:209-215.
- Li, F., C. Leroux, J.K. Craigo, S.J. Cook, C.J. Issel, and R.C. Montelaro. The S2 gene of equine infectious anemia virus is a highly conserved determinant of viral replication and virulence properties in experimentally infected ponies. *Journal of Virology*, 74:573-579.
- Lovett, J., D.K. Howe, and L.D. Sibley. Molecular characterization of a thrombospondin-related anonymous protein homologue in *Neospora caninum*. *Molecular and Biochemical Parasitology*, 107:33-43.
- Lyons, E.T., R.L. DeLong, F.M. Gulland, S.R. Melin, S.C. Tolliver, and T.R. Spraker. Comparative biology of *Uncinaria* spp. in the California sea lion (*Zalophus californianus*) and the northern fur seal (*Callorhinus ursinus*) in California. *Journal of Parasitology*, 86:1348-1352.
- Lyons, E.T., T.R. Spraker, K.D. Olson, S.C. Tolliver, and H.D. Bair. Prevalence of hookworm (*Uncinaria lucasi* Stiles) in northern fur seal (*Callorhinus ursinus* Linnaeus) pups on St. Paul Island, Alaska, U.S.A.: 1986-1999. *Comparative Parasitology*, 67:218-223.
- Lyons, E.T., T.W. Swerczek, S.C. Tolliver, H.D. Bair, J.H. Drudge, and L.E. Ennis. Prevalence of selected species of internal parasites in equids at necropsy in central Kentucky (1995-1999). *Veterinary Parasitology*, 92:51-62.
- McConnico, R.J., C.J. Issel, S.J. Cook, R.F. Cook, C. Floyd, and H. Bison. Predictive methods to define infection with equine infectious anemia virus in foals out of reactor mares. *Journal of Equine Veterinary Science*, 20:387-392.
- McManus, C.J., and B.P. Fitzgerald. Effects of a single day of feed restriction on changes in serum leptin, gonadotropins, prolactin, and metabolites in aged and young mares. *Domestic Animal Endocrinology*, 19:1-13.
- Nadler, S.A., B.J. Adams, E.T. Lyons, R.L. DeLong, and S.R. Melin. Molecular and morphometric evidence for separate species of *Uncinaria* (Nematoda: Ancylostomatidae) in California sea lions and northern fur seals: Hypothesis testing supplants verification. *Journal of Parasitology*, 86:1099-1106.
- Nally, J., S. Artiushin, A.S. Sheoran, P.J. Burns, B. Simon, R.M. Gilley, J. Gibson, S. Sullivan, and J.F. Timoney. Induction of mucosal and systemic antibody specific SeM F3 of *Streptococcus equi* by intranasal vaccination using a sucrose acetate isobutyrate based delivery system. *Vaccine*, 19:492-497.
- Newton, J.R., K. Verheyen, N.C. Talbot, J.F. Timoney, J.L.N. Wood, K.H. Lakhani, and N. Chanter. The prevalence of *Streptococcus equi* colonisation of equine guttural pouches in three protracted strangles outbreaks rapidly controlled by detection and isolation of carrier. *Equine Veterinary Journal*, 32:515-526.
- Patterson-Kane, J.C., R.R. Tramontin, R.C. Giles and L.R. Harrison. Transitional cell carcinoma of the urinary bladder in a Thoroughbred, with intra-abdominal dissemination. *Veterinary Pathology*, 37:692-695.
- Powell, D.M., L.M. Lawrence, B.P. Fitzgerald, K. Danielsen, A. Parker, P. Siciliano, and A. Crum. Effect of short-term feed restriction and calorie source on hormone metabolic responses in geldings receiving a small grain meal. *Journal of Animal Science*, 78:3107-3113.
- Reedy, S.E., D.M. Powell, N.M. Williams, M.V. Dodson, and B.P. Fitzgerald. Thoughts on the source of tissue on subsequent cell culture success. *Methods in Cellular Science*, 22:29-32.
- Sheoran, A.S., S.S. Karzenski, J.W. Whalen, M.V. Crisman, D.G. Powell, and J.F. Timoney. Prepartum equine rotavirus vaccination inducing strong specific IgG in mammary secretions. *Veterinary Record*, 146:672-673.
- Sheoran, A.S., J.E. Nally, J.M. Donahue, B.J. Smith, and J.F. Timoney. Antibody isotypes in sera of equine fetuses aborted due to *Leptospira interrogans* serovar pomona type kennewicki infection. *Veterinary Immunology and Immunopathology*, 77:301-309.
- Sheoran, A.S., J.F. Timoney, M.A. Holmes, S.S. Karzenski, and M.V. Crisman. Immunoglobulin isotypes in sera and nasal mucosal secretions and their neonatal transfer and distribution in horses. *American Journal of Veterinary Research*, 61:1099-1105.
- Smith, R.A., D. Bolin, C.B. Hong, and P. Sharko. Highly presumptive intoxication of sheep exposed to Ozark Milkweed (*Asclepias viridis*) (Walter). *Veterinary and Human Toxicology*, 42:358-360.
- Smith, R.A., and D.G. Lang. The rapid determination of ethylene glycol and glycolic acid in biological fluids. *Veterinary and Human Toxicology*, 42:349-356.
- Swerczek, T.W., and E.T. Lyons. Paragonimiasis in a cat in Kentucky. *Veterinary Medicine*, 95:909-911.
- Swinburne, J., C. Gerstenberg, M. Breen, V. Aldridge, L. Lockhard, E. Marti, D. Antczak, M. Egglestone-Stott, E. Bailey, J. Mickelson, K. Roed, G. Lindgren, W. von Haeringen, G. Guerin, J. Bjornasson, W.R. Allen, and M. Binns. First comprehensive low-density horse linkage map based on two, three-generation, full-sibling, cross-bred horse reference families. *Genomics*, 66:123-134.
- Takai, S., T. Anzai, H. Yashio, C. Ishii, S. Tsubaki, R. Wada, and J.F. Timoney. Detection of DNA restriction fragment polymorphism in *Streptococcus equi*. *Veterinary Record*, 146:159-161.
- Timoney, P.J. The increasing significance of international trade in equids and its influence on the spread of infectious diseases. *Annals of the New York Academy of Science*, 916:55-60.

- Timoney, P.J. and W.H. McCollum. Equine viral arteritis: Further characterization of the carrier state in stallions. *Journal of Reproduction and Fertility*, Supplement, 56:3-11.
- Wolfsdorf, K.E., N.M. Williams, and J.M. Donahue. Theriogenology question of the month: Bacterial placentitis attributable to a gram-positive filamentous branching bacillus organism. *Journal of the American Veterinary Medical Association*, 216:1915-1916.

(In addition, members of the department published 63 abstracts.)

Other Research Publications

Agricultural Economics

- Bazen, E., S.R. Workman, R.A. Fleming, and R.I. Barnhisel. Nutrient transport from swine manure applications on reclaimed surface mine lands. Proceedings, American Society of Agricultural Engineering, Milwaukee, Wis.
- Bazen, E.R., A. Fleming, and S.R. Workman. Feasibility study of swine manure management on reclaimed surface mine lands. Proceedings, American Society for Surface Mining and Reclamation.
- Debertin, D.L. Diversification: A strategy for rural communities? *Kentucky Agribusiness Review*, 3:2, Summer.
- Dillon, C., W. Ramming, and G. Ibendahl. 1998 full season soybean costs and returns: Kentucky farm business management program. No. 2000-08. Department of Agricultural Economics, University of Kentucky.
- Fleming, R.A. Farmland protection: The Kentucky experience. Land Values and Planning Workshop, Proceedings, SERA-IEG 30 regional committee, Georgia Center for Continuing Education, University of Georgia, Athens. May.
- Freshwater, D. Why a coherent regulatory philosophy is important. Contractor report to the Farm Credit Administration, February.
- Freshwater, D. The new structure of agriculture. Electronic colloquium paper prepared for the Western Agrifood Institute. May.
- King, B.S., and S. Vickner. Vegetable consumption trends and opportunities. Agricultural Situation and Outlook, EMS-26, October, 75-78, John D. Anderson, ed. Department of Agricultural Economics, University of Kentucky.
- Maynard, L., G. Ibendahl, and R. Fleming. Stabilizing the dairy market. Policy paper for Farm Bureau. June.
- Maynard, L.J., S.T. Franklin, and A.M. Pasley. Better butter? Dairy products that help prevent cancer may offer win-win solution. *Kentucky Agribusiness Review*, 3(2)2000:1-2.
- Maynard, L.J. Estimating commercial potential of nutraceutical dairy products. Staff Paper No. 408. Department of Agricultural Economics, University of Kentucky.
- Maynard, L.J., and C.A. Blair. Dairy Situation and Outlook, Fall 2000. Agricultural Situation and Outlook: Fall 2000, ESM-26. University of Kentucky.
- Maynard, L.J., G. Ibendahl, and R. Fleming. Stabilizing the dairy market. Policy development and background article prepared for Kentucky Farm Bureau, June.
- Maynard, L.J. Long-run impacts of biotechnology on Kentucky agriculture: What to watch for. *Kentucky Agribusiness Review* 3, (Spring):2-3.
- Maynard, L.J., S.T. Franklin, and A.M. Pasley. Designing a survey to estimate commercial potential of nutraceutical dairy products. Presented at the annual meeting of the Kentucky Economic Association, Lexington, Ky. October 13.
- Saghalian, S., M. Reed, and M. Marchant. Monetary impacts and overshooting of agricultural prices in an open economy. Staff Paper #403. Department of Agricultural Economics, University of Kentucky. March.
- Vickner, S. Strategic price response and multimarket contact: The case of the domestic black and herbal tea industry. Staff Paper #404, (May):1-26. Department of Agricultural Economics, University of Kentucky.

- Vickner, S., and S. Koch. The role of information on price discovery in the market for Thoroughbred yearlings. Staff paper #407, (November):1-24. Department of Agricultural Economics, University of Kentucky.
- Zeuli, K. and D. Freshwater. The changing role of agricultural cooperatives in rural economics. *The Kentucky Agribusiness Review*, 3(1), Spring.

Agromony

- Argyris, J., and D.M. TeKrony. Effect of *Fusarium* infection during wheat seed development and the production of DON and seed quality. pp. 123-127. Proceedings, National Fusarium Head Blight Forum.
- Amonette, J.E., R.K. Kukkadapu, A.S. Lea, C. J. Matocha, D.L. Sparks, W.F. Bleam, and S.J. Joon. Electron paramagnetic resonance studies of mineral surface chemistry. Annual Report for Environmental Dynamics and Simulation, EMSL, U.S. DOE.
- Ball, D.M., and G.D. Lacefield. Crimson clover. Oregon Clover Committee Circular 00-2.
- Barnhisel, R.I., and R.B. Gray. Changes in morphological properties of a prime land soil reclaimed in 1979. pp. 511-519. IN: W.L. Daniels, ed. Proceedings, 17th Annual Meeting, American Society for Surface Mining and Reclamation—A New Era of Land Reclamation.
- Calvert, J.R., Don Fowlkes, P.P. Hunter, Joe Priest, Scott Whitley, Danny Peek, and David Reed. 1999 regional burley tobacco sucker control tests. Agronomy Department, University of Kentucky. April.
- Collins, M. Reducing alfalfa harvesting losses. Kentucky Alfalfa Conference, 20:40-48. February 24, Cave City, Ky.
- Diaz-Zorita, M., and J.H. Grove. The greater carbon sequestration in no-till soils depends upon its distribution with depth. Manuscript Number 00-86-0205, P.K. Bollich, ed. Proceedings, 23rd Annual Southern Conservation Tillage Conference for Sustainable Agriculture, 19-21 June, Monroe, La. Louisiana Agricultural Experiment Station.
- Diaz-Zorita, M., J.H. Grove, and E. Perfect. Sampling and sieving procedures for measuring dry aggregate size distributions. IN: J.E. Morrison Jr., ed. Proceedings, 15th International Soil and Tillage Research Organization (ISTRO-2000), 2-7 July, Ft. Worth, Texas. (CD-ROM). Texas Agricultural Experiment Station.
- Fernández-Canigia, M.V., M. Diaz-Zorita, and M.S. Coyne. Diversidad en comunidades microbianas en un Hapludol Típico. Efecto de sistemas de labranza. IN: Argentine Association of Soil Science (ed.) XVII Argentine Congress of Soil Science. AACS Commission II, 22 CD. Mar del Plata, BA, Argentina.
- Fowlkes, D.F., and R.D. Miller. Notes on burley tobacco varieties recommended for 1999. P&SS Info#11. University of Tennessee.
- Fowlkes, D.F., and R.D. Miller. Dark tobacco variety information—1999 Tennessee recommendations. P&SS Info #215. University of Tennessee.
- Fowlkes, D.F., R.D. Miller, et al. Burley tobacco production in Tennessee. University of Tennessee.
- Grove, J.H., and E.M. Pena-Yeutukhiw. Fertilizer recommendations based upon nutrient removal or soil testing: A spatial analysis. V16:123-131. IN: J. Gerwing, ed. Proceedings, 30th North Central Extension-Industry Soil Fertility Conference, Potash and Phosphate Institute, November 15-16. St. Louis, Mo.
- Kennedy, B.S., J. Calvert, Richard Hensley, Carroll Sasser Jr., and Carol Wilkinson. Regional burley variety evaluation committee report 1999. Department of Agronomy, University of Kentucky. March.
- Lacefield, G.D. Extended grazing from stockpiling. GLCI 4(3). July-August.
- Lacefield, G.D., and D. Ball. White Clover. Oregon clover commission circular 00-1.
- Lacefield, G.D., and D.M. Ball. 10 Pasos clove en el desarrollo de un programa de forraji rentable. XVI Conferencia Int. Sobre Ganado Lechero CIGAL, Mexico.
- Lacefield, G.D., and D.M. Ball. Calidad del forraje. Sy Importancia para lograr una Production eficiente. XII Conferencia Int. Sobre Ganado Lechero IGAL 2000, Mexico.

- Miller, R.D. Evaluation of plastic covers for transplant production in outdoor float beds. 2000 CORESTA Information Bulletin. Proceedings of Symposium held in Lisbon, Portugal.
- Miller, R.D., and B.S. Kennedy. Fusarium wilt problems are on the rise. IN: Wayne Harr and Tim Sickman, eds. Burley and Dark Tobacco Production Guide. Farm Progress Companies Inc., Carol Stream, Ill.
- Mundell, R.E., N.L. Taylor, and M. Collins. Quantifying pubescence on stems of red clover. Proceedings, Trifolium Conference. Pipestem, W. Va.
- Palmer, G., B. Pearce, and R.D. Miller. New burley varieties for 2001. Burley and Dark Tobacco Production Guide. Wayne Harr and Tim Sickman, eds. Farm Progress Companies Inc., Carol Stream, Ill.
- Pearce, B., G. Palmer, B. Miller, and D. Fowlkes. 2000 guide to burley tobacco varieties. University of Kentucky.
- Perfect, E., M. Diaz-Zorita, and J.H. Grove. A mass-based model for predicting homogeneous fragmentation of prefractal porous media. IN: J.E. Morrison Jr., ed. Proceedings, 15th International Soil and Tillage Research Organization (ISTRO-2000), 2-7 July, Ft. Worth, Texas (CD-ROM). Texas Agricultural Experiment Station.
- Potter, C.L., M.S. Coyne, and A. Karathanasis. Treatment efficiency of vegetated and unvegetated constructed wetlands treating domestic wastewater. Proceedings, NOWRA 2000 Annual Conference, October 31-November 2, Grand Rapids, Mich., 223-229.
- Rasnake, M. Using poultry litter on forages. pp. 21-23. Tennessee State Forage Conference, Nashville, Tenn.
- Rasnake, M., F. Sikora, and L. Murdock. Nutrient accumulation and movement in soils following the use of poultry litter. pp. 562-567. 8th International Symposium on Animal, Agricultural and Food Processing Waste, Des Moines, Iowa.
- Ruiz-Diego, C., M. Collins, D.C. Ditsch, M.S. Coyne, and J.H. Grove. Vadose zone water and crop response to poultry litter application on reclaimed surface mine land. Proceedings, American Society for Surface Mining and Reclamation, 611-619.
- TeKrony, D.M., and Randy Weisz. Planting farmer saved wheat seed: Are you really saving money? North Carolina Production Guide 2000:11-13.
- TeKrony, D., D. Van Sanford, J. Arygris and B. Kennedy. Movement of *Fusarium graminearum* in wheat spikes following greenhouse inoculation. Proceedings, National Fusarium Head Blight Forum, 288-293.
- Thomas, G.W., T.G. Mueller, R.I. Barnhisel, and N.J. Hartsock. El Papel de la agricultura de precision: Para Mejorar la productividad agricola en siembra directa. 8th Congreso Nacional de AAPRESID, 1:155-165.
- Tutt, Charles, Sandy Swanson, and Dave Van Sanford. Three year performance of wheat varieties in no-till and conventional-till trials. 2000 Wheat Science Research Report.
- Van Sanford, D.A., B. Kennedy, M. Hall, and C. Swanson. Fusarium head blight research at the University of Kentucky. Proceedings, 2000 National Fusarium Head Blight Forum, December 10-12, Cincinnati, Ohio.
- Weinberger, G.A., R.D. Miller, B.S. Kennedy, P.D. Legg, and J.R. Calvert. 1999 performance test for commercially developed lines of burley tobacco. Agronomy Department, University of Kentucky. January.
- Animal Sciences**
- Akay, V., and J. Jackson. Effect of specialty corn hybrids in the diets of lactating dairy cows. *The Farmers Pride*, 11(34):14. March 1.
- Cromwell, Gary L. Why and how antibiotics are used in swine production. Proceedings, University of Illinois Symposium Addressing Issues of Antibiotic Use in Livestock Production, Urbana, Ill., Oct. 16-17.
- Cromwell, Gary L., and Charlotte Kirk Baer. Establishing nutrient requirements of horses and other animals in an era of modeling. Proceedings, Equine Nutrition Conference for Feed Manufacturers, Kentucky Research Inc., Lexington, Ky., May 4-5.
- Cromwell, Gary L., and Charlotte Kirk Baer. Use of models in establishing the new NRC nutrient requirements of swine—How they affect the suitability requirements in the model regulations. Proceedings, American Association of Feed Control Officials Annual Meeting, Charleston, W.Va., August 10.
- Cromwell, Gary L. Paylean approved for swine. *Kentucky Pork Producers News* (March/April, 2000), pp. 16. *The Farmer's Pride* 11. March 8.
- Cromwell, Gary L. Selenium—A unique trace element. *Kentucky Pork Producers News*. (May/June, 2000), pp. 8. *The Farmer's Pride* 11:44. May 10.
- Cromwell, Gary L. Cereal by-products in starter diets for pigs. *Kentucky Pork Producers News* (July/August, 2000), pp. 10. *The Farmer's Pride* 12:1. July 5.
- Ely, D.G. Ewe nutritional management during lactation. *Sheep connection*. 2(1):6.
- Franklin, S.T., and D.M. Amaral-Phillips. Recent research in calf nutrition. Proceedings, Kentucky Dairy Conference, 33.
- Harmon, R.J. Trace mineral nutrition for dairy. pp. 22-37. Proceedings, Southern Dairy School, San Antonio, Texas.
- Harmon, R.J. From mastitis control to reproduction: Economic implications of organic trace minerals. pp. 10-25. Proceedings, 4th International Dairy Short Course, Boise, Idaho.
- Hennig, B. Forum: Vitamin E vs. PCBs. *Environmental Health Perspectives*, 108:4-5.
- Lindemann, M.D. Fat sources and vitamin supplementation—a need to re-examine sow diets? Proceedings, Manitoba Swine Seminar, 14:33-47.
- Lindemann, M.D. Space requirements for swine. *The Farmer's Pride*, September 13, 12(11):12.
- Lindemann, M.D. Space requirements for swine—Part II. *The Farmer's Pride*, November 1, 12(18):19-20.
- Liu, G. and Y.L. Xiong. Susceptibility of mixed chicken muscle/nonmuscle proteins to oxidation. XXI World's Poultry Congress Proceedings (CD-ROM), Montreal, Canada, August 20-24.
- Scaletti, R.W., and R.J. Harmon. Supplementing dietary copper to reduce the incidence of mastitis in dairy heifers. pp. 37-39. Proceedings, 2000 Kentucky Dairy Conference, University of Kentucky, Lexington.
- Xiong, Y.L., and E.A. Pena-Ramos. Antioxidative activity of hydrolyzed food proteins. pp. 366-376. 4th International Conference of Food Science and Technology, Wuxi, China, *Food of 21st Century*, China Light Industry Press, Beijing, China.
- Biosystems and Agricultural Engineering**
- Anderson, R.G., R.S. Gates, R.L. Geneve, S. Zolnier. Dynamic control for mist propagation of poinsettias. pp. 364-372. Proceedings, 15th International Congress for Plastics in Agriculture.
- Bazen, E., S.R. Workman, R.A. Fleming, and R.I. Barnhisel. Nutrient transport from swine manure applications on reclaimed mine lands. Paper No. 00-2119 presented at the 2000 Annual International Meeting of American Society of Agricultural Engineers, Milwaukee, Wis., July 9-12.
- Berberich, J.A., B.L. Knutson, H.J. Strobel, S. Tarhan, S.E. Nokes, and K.A. Dawson. Toxicity effects of compressed and supercritical solvents on thermophilic microbial metabolism. *Biotechnology Bioengineering*, 70(5):491-497.
- Berberich, J.A., B.L. Knutson, H.J. Strobel, S. Tarhan, S.E. Nokes, and K.A. Dawson. Product selectivity shift in *Clostridium thermocellum* in the presence of compressed solvents. *Industrial and Engineering Chemistry Research*, 39(12):4500-4505.
- Bridges, T.C., L.W. Turner, R.S. Gates, and D.G. Overhults. Swine performance enhancement with cooling as influenced by summer growth period and weather. Proceedings, 1st International Swine Housing Conference, October 9-11, Des Moines, Iowa. American Society of Agricultural Engineers, St. Joseph, Mich.
- Burks, T.F., S.A. Shearer, C.J. Sobolik, and J.P. Fulton. Combine yield monitor test facility development. Paper No. 00-1084. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.

- Burks, T.F., S.A. Shearer, and J.P. Fulton. Assessment of fertilizer application accuracy with the use of navigational aids. Paper No. 00-1154. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Carter, S., and S. Nokes. Quantification of biomass and phytase production for solid-state fermentation with *Aspergillus niger* on wheat bran. Paper No. 00-8013. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Chinn, M., and S. Nokes. Temperature control of a solid state cultivation deep bed reactor. Paper No. 00-8002. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Duncan, G., and B. Furnish. Burley bale moisture/storage study. Report on research study submitted to Council for Burley Tobacco. December 1999. 43 pp.
- Edwards, D.R. U.S. confined animal waste management: Experiences and issues. Proceedings, 2000 Livestock Waste Management Conference, Tainan, Taiwan, October 25-26.
- Fulton, J.P., S.A. Shearer, M.E. Anderson, T.F. Burks, and S.G. Higgins. Simulated application errors for granular materials for fixed and variable-rate application. Paper No. 00-1153. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Gates, R.S., J.L. Taraba, K. Liberty, A.J. Pescatore, A.H. Cantor, M.J. Ford, and D.J. Burnham. Dietary manipulation for reduced ammonia emission and TAN in broiler litter. Proceedings, 2nd Int. Conference on Air Pollution from Agricultural Operations.
- Gates, R.S., A.J. Pescatore, M.J. Ford, K. Liberty, A.H. Cantor, and D.J. Burnham. Dietary manipulation of crude protein and amino acids for reduced ammonia emission from broiler litter. Proceedings, National Poultry Waste Management Symposium, 378.
- Gates, R.S., J.L. Taraba, K. Liberty, A.J. Pescatore, A.H. Cantor, M.J. Ford, and D.J. Burnham. Dietary manipulation for reduced ammonia emission and TAN in broiler litter. pp. 147-156. Proceedings, 2nd International Conference on Air Pollution from Agricultural Operations, Des Moines, Iowa, October 9-11.
- Gates, R.S. Statistics and modeling concepts for EMMS data. Instructor, Professional Development Workshop. SE-301 Environmental Physiology (Sponsor). Presented at the Annual International Meeting of the American Society of Agricultural Engineers.
- Gates, R.S., A.J. Pescatore, J. Taraba, A.H. Cantor, K. Liberty, M.J. Ford, and D. Burnham. Dietary manipulation of crude protein and amino acids for reduced ammonia emission from broiler litter. Paper No. 00-4024. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Golden, V., L.W. Turner, G. Coleman, and R.S. Gates. Equine response to environmental factors: A literature review and recommendations for design and environmental modification. Paper No. 00-4074. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Harkins, J.D., C. Holtz, J. Boyles, W.E. Woods, A.F. Lehner, W. Carter, W. Karpiesiuk, R.S. Gates, M. Fisher, and T. Tobin. Behavioral and cardiac effects of clenbuterol, terbutaline, and furosemide in the horse: An overview. Association of Racing Commissions, International Meeting on Clenbuterol Analyses, July. Chicago, Ill. 1999.
- Jiang, Y., L.G. Wells, and R.A. Rohlf. Modeling unsaturated soil behavior in triaxial tests. Paper No. 00-1143. Annual International Meeting, American Society of Agricultural Engineers, St. Joseph, Mich.
- Johnson, M.F.G., J.M. Zulovich, J. Wurm, R.S. Gates, and L. Turner. Desiccant system's potential for swine facilities applications. Proceedings, 1st International Swine Housing Conference, October 9-11, Des Moines, Iowa. American Society of Agricultural Engineers, St. Joseph, Mich.
- Krishna, C., and S. Nokes. Microbial phytase production by solid state fermentation. Paper No. 00-8012. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Mach, C., R.S. Gates, D.G. Colliver, J.W. Buxton, and R.G. Anderson. Implementation and results from a steady state vapor pressure deficit crop to air controller. Paper No. 00-4088. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Patterson, J.M., and S.E. Nokes. Incorporation of chlorothalonil persistence on processing tomato into TOM-CAST. *Agricultural Systems Journal*, 64(3):171-181.
- Payne, F.A. Optical sensors for monitoring coagulation, particulates, and performance of separators. *Quarterly Newsletter of the Australian Cheese Technology Program*, 4(3):1-4.
- Payne, F.A. "Say Cheese." Technology highlight article in the American Society of Agricultural Engineers magazine: Resource, August 1999, 9-10.
- Puma, M., H. Xin, R.S. Gates, and D. Burnham. Feeding and drinking patterns and growth performance of individual broilers at selected cycling air temperature and drinking water temperatures. Paper No. 00-4068. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Rohlf, R.A., X. Zeng, and L.G. Wells. Simulating deformation of an excess spoil fill. Proceedings, ASCE/GI Geo-Denver 2000 Conference, August.
- Rohlf, R.A., and L.G. Wells. Boundary value problems associated with unsaturated soil collapse testing. Proceedings, Asian Conference on Unsaturated Soils, Singapore, May.
- Senay, G.B., A.D. Ward, J.G. Lyon, N.R. Fausey, S.E. Nokes, and L.C. Brown. The relations between spectral data and water in a crop production environment. *International Journal of Remote Sensing*, 21(9):1897-1910.
- Taraba, J.L., R.S. Gates, L.W. Turner, and A. Lee. Ventilation, feed and loading methods effects on hydrogen sulfide emissions from swine slurry. pp. 204-210. Proceedings, 2nd International Conference on Air Pollution from Agricultural Operations, Des Moines, Iowa, October 9-11.
- Tarhan, S., S. Nokes, H. Strobel, K. Dawson, and B. Knutson. A kinetic model of cellobiose fermentation by resting (nongrowing) *Clostridium thermocellum* JW20 Cells. Paper No. 00-8001. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Turner, L.W., R.S. Gates, J.L. Taraba, J. Usry, and J. Monegue. Dietary manipulation of crude protein and amino acids for reduced NH₃ emission from swine waste. Paper No. 00-4025. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Warner, R.C., and A. Hootkany. The influence of construction equipment on the saturated hydraulic conductivity of compacted soil liners. 2000 Kentucky Nonpoint Source Conference, Kentucky Division of Water, Natural Resources and Environmental Protection Cabinet, Bowling Green, Ky., May 23-25.
- Warner, R.C., F. Camargo, and M. Anderson. Automatic monitoring systems for reclamation design, surface mining reclamation approaches to bond release. Cumulative Hydrologic Impact Assessment, Office of Surface Mining, Western Regional Coordinating Center, Office of Technology Transfer, Billings, Mont., August 27-September 1.
- Warner, R.C. New developments in SEDCAD+ for GIS, electronic permitting workshop, OSM Western Regional Coordinating Center, Office of Technology Transfer, Billings, Mont., May 10-11.
- Warner, R.C. Sediment storage design considerations for temporary structures—SEDCAD and RUSLE, surface mining reclamation approaches to bond release. Cumulative Hydrologic Impact Assessment, Office of Surface Mining, Western Regional Coordinating Center, Office of Technology Transfer, Billings, Mont., Aug 27-Sept 1.
- Wells, L.G., S.A. Shearer, and L.W. Murdock. Assessment of remote sensing for implementation of precision tillage. Paper No. 00-1097. American Society of Agricultural Engineers, St. Joseph, Mich.
- Wells, L.G., S.A. Shearer, J.P. Fulton, and L.W. Murdock. Assessment of remote sensing for implementation of precision tillage. Paper No. 00-1084. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.
- Wilkerson, E., R.L. Geneve, and R.S. Gates. Image analysis for indication of seed germination. Paper No. 00-3025. Annual International Meeting, American Society of Agricultural Engineers, Milwaukee, Wis.

Entomology

- Held, D.W., D.A. Potter, R.S. Gates, and R.G. Anderson. Can atmospheric gases disinfest greenhouse propagules of arthropod pests? Entomological Society of America, Atlanta, Ga. Honorable Mention—President's Prize, Section F. 1999.
- Held, D.W., D.A. Potter, R.S. Gates, and R.G. Anderson. Can atmospheric gases disinfest greenhouse propagules of arthropod pests? Proceedings, Southern Nursery Association Research Conference, 45:137-140.
- Held, D.W., T. Eaton, M. Rogers, J. Gels, and D.A. Potter. Evaluation of acetamiprid (TADS 12462) and fipronil for control of adult Japanese beetles, 1999. *Arthropod Management Tests*, 25:394-395.
- Held, D.W., T. Eaton, M. Rogers, J. Gels, R. López, E. Eliason, and D.A. Potter. Comparison of Mach2 (halofenozide), Merit (imidacloprid), and Meridian (CGA 293, 343:thiamethoxam) applied for control of white grubs in turf, 1999. *Arthropod Management Tests*, 25:361.
- Potter, Michael F., and Ricardo T. Bessin. Termites and public attitudes. *Pest Control Technology*, 28(2):38-43, 46, 48, 50, 52, 56.
- Potter, Michael F., and Anne E. Hillery. The new termite killers. *Pest Control Technology*, 28(5):54, 55, 58-63.
- Potter, Michael F., Thomas Myers, and Charles Asberry. A watery termite tale. *Pest Control Technology*, 68(2):54, 56, 60.

Forestry

- Barton, C.D., E.A. Nelson, R.K. Kolka, K.W. McLeod, W.H. Conner, M. Lakly, D. Martin, J. Wigginton, C.C. Trettin, and J. Wisniewski. Restoration of a severely impacted riparian wetland system: The Pen Branch project workshop summary. *Ecological Engineering*, 15:3-5.
- Borchers, J.G., C.A. Backman, A.F. Cross, D.W. Gilmore, M.H. Pelkki, O.E. Rhoades, C.C. Trettin, and D.J. Zarin. Taiga oil and native cultures in western Siberia: The 1996 Young Investigator Program Report on Forest Sustainability. National Research Council, Washington, D.C. 61 pp.
- Graves, D.H., J.M. Ringe, M.H. Pelkki, R.J. Sweigard, and P. Warner. High value tree reclamation research. pp. 413-421. Proceedings, 6th International Conference on Environmental Issues and Management of Waste in Energy and Mineral Production, SWEMP 2000. May 30-June 2, Calgary, Alberta, Canada.
- Hilpp, G.K., and M.H. Pelkki. Multi-market competition for yellow-poplar trees in eastern Kentucky. pp. 337-342. Proceedings, Symposium on Systems Analysis in Forest Resources, Traverse City, Mich., May 28-31, 1997. USDA North Central Experiment Station General Technical Report NC-205.
- Kerkhoff, A.J., B.T. Milne, and D.S. Maehr. Toward a panther-centered view of the forests of south Florida. *Conservation Ecology*, 4(1):online <<http://www.consecol.org/vol4/iss1/>>.
- Larkin, J.L., T.G. Barnes, M. Depoy-Smith, and D.S. Maehr. A comparison of avian communities occupying native and exotic grasslands in Kentucky. IN: C. Schurle, ed. The 14th Annual North American Prairie Conference, Mason, Iowa.
- Maehr, D.S. Large carnivores in an island paradise? *Wild Earth*, 9(4):56-61.
- Maehr, D.S. Continental conservation: Scientific foundations of regional reserve networks—A review. *Wildlife Society Bulletin*, 27:1121-1124.
- Pelkki, M.H., and G.J. Arthaud. Exploring enhancement to dynamic programming. pp. 303-307. Proceedings, Symposium on Systems Analysis in Forest Resources, Traverse City, Mich., May 28-31, 1997. USDA North Central Experiment Station General Technical Report NC-205.
- Pelkki, M.H., and G.J. Arthaud. Metadata standards for forestry and natural resources. pp. 193-197. Proceedings, Symposium on Systems Analysis in Forest Resources, Traverse City, Mich., May 28-31, 1997. USDA North Central Experiment Station General Technical Report NC-205.
- Ringe, J.M. Invited book review of *Paper Cuts: Recovering the Paper Landscape* by J.N. Abramovitz and A.T. Mattoon. *Journal of Natural Resources and Life Sciences Education*, 29(1):7.

Horticulture

- Anderson, R.G. Single-stem cut flowers—a greenhouse production system. pp. 402-410. Proceedings, 15th International Congress for Plastics in Agriculture and 29th National Agricultural Plastics Congress.
- Anderson, R.G., R.S. Gates, R.L. Geneve, and S. Zolnier. Dynamic control for mist propagation of poinsettias. pp. 364-372. Proceedings, 15th International Congress for Plastics in Agriculture and 29th National Agricultural Plastics Congress.
- Dunwell, W.C. Hosta propagation. Combined Proceedings International Plant Propagator's Society, 50.
- Durham, R.E., J.R. Hartman, J.P. Johnson, and W.M. Fountain. The University of Kentucky Home Landscape IPM Program. Proceedings, Southern Nursery Association Research Conference, 45:435-437.
- Finneseth, C., S. Kester, R.L. Geneve, K. Pomper, and D. Layne. Propagation of pawpaw (*Asimina triloba*). Combined Proceedings, International Plant Propagator's Society, 50.
- Fulcher, A., K. Keeney, W. Dunwell, and R.L. Geneve. Horticulture information preferences of master gardeners. Proceedings, Southern Nursery Association Research Conference, 45:427-431.
- Geneve, R., R. Gates, S. Zolnier, J. Owen, and S. Kester. A dynamic control system for scheduling mist propagation of poinsettia cuttings. Combined Proceedings, International Plant Propagator's Society, 49:56-59. 1999.
- Geneve, R.L. Root formation in relationship to auxin uptake in cuttings treated by the dilute soak, quick dip and talc methods. Combined Proceedings, International Plant Propagator's Society, 50.
- Hale, B.S., R.L. Geneve, and R. Anderson. *Passiflora* (passion flower) species and cultivars for use as summer climbers in the southern landscape. Proceedings, Southern Nursery Association Research Conference, 45.
- Ingram, D.L. One strategy for industry investments in a state's nursery/landscape research program. Proceedings, Southern Nursery Association Research Conference, 45:261-262.
- Jones, T., W. Turner, and J. Strang. Supersweet corn evaluations in eastern Kentucky, 2000. pp. 142-146. *Midwestern Vegetable Variety Trial Report for 2000*, Bul. No. 798, Purdue University.
- McNiel, R.E. Focus: Are you keeping up with the Jones? *Nursery Views*, 30(3):18-19.
- McNiel, R.E., P.A. Weston, and B.C. Eshenaur. Viburnum beetle: Threat to propagation, production and the landscape. Combined Proceedings, International Plant Propagator's Society, 50.
- McNiel, R.E., P.A. Weston, and B.C. Eshenaur. Viburnum beetle: A serious threat to the landscape. Proceedings, Southern Nursery Association Research Conference, 45:144-146.
- Rowell, B., R. Terry Jones, W. Nesmith, A. Satanek, and J.C. Snyder. Bacterial spot tolerance, yield, and quality of bell and specialty pepper cultivars. p. 25. Proceedings, National Pepper Conference, October 1-3, Lafayette, La.
- Rowell, B. Selecting pepper varieties and bacterial leaf spot resistance. Proceedings, Ohio Fruit and Vegetable Growers Congress, February 10-12, Cincinnati, Ohio.
- Rowell, B. Yields and disease resistance of fall-harvested transgenic and regular summer squash. Proceedings, Ohio Fruit and Vegetable Growers Congress, February 10-12, Cincinnati, Ohio.
- Rowell, B., R.T. Jones, W. Nesmith, A. Satanek, and J.C. Snyder. Bell and specialty pepper evaluations for bacterial spot resistance, yield, and quality. pp. 65-76. *Midwestern Vegetable Variety Trial Report for 2000*, Bul. No. 798, Purdue University.
- Strang, J., A. Satanek, T. Jones, K. Oakley, D. Lowry, D. Slone, and J. Snyder. Supersweet corn evaluations in central Kentucky, 2000. pp. 138-141. *Midwestern Vegetable Variety Trial Report for 2000*, Bul. No. 798, Purdue University.
- Strang, J., A. Satanek, D. Slone, and J. Snyder. Seedless and seeded watermelon cultivar evaluation. pp. 205-207. *Midwestern Vegetable Variety Trial Report for 2000*, Bul. no. 798, Purdue University.

Nutrition and Food Science

- Chow, C.K. Nutritionists and development of health foods. pp. 153-177. Proceedings, Symposium on the Regulation and Development of Health Foods, National Taiwan University, Taipei, Taiwan.
- Glauert, H.P., J.C. Tharappel, E.Y. Lee, L.W. Robertson, and B.T. Spear. Effect of PCBs on the activation of the transcription factors AP-1 and NF-kB. *Central European Journal of Public Health*, 8:17-18.

Plant Pathology

- Bachi, P.R., J.W. Beale, J.R. Hartman, D.E. Hershman, W.C. Nesmith, and P.C. Vincelli. Plant diseases in Kentucky—Plant Disease Diagnostic Laboratory summary, 1999. UK Department of Plant Pathology.
- Hartman, J.R., S. Kihl, and L. Vaillancourt. Isolation of *Sphaeropsis sapinea* from landscape Austrian Pines. *KNLA Nursery Views*, 30:18-19.
- Hershman, D. Effect of tillage and previous crop on wheat head scab. *PPFS-AG-SG-9*.
- Hershman, D. Wheat streak mosaic virus in Kentucky. *PPFS-AG-SG-8*.
- Hershman, D., D. Van Sanford, and D. TeKrony. NCR-184 2000 Kentucky state report. Proceedings, 2000 National Fusarium Head Blight Forum, 314.
- Gleason, M.L., J.K. Iles, and J.R. Hartman. Hard to resist (flowering crabapples). *American Nurseryman*, 191:38-42.
- Vincelli, P. Fungicidal control of gray leaf spot. *Golf Course Management*, June:68-74.

Rural Sociology

- Garkovich, L. Land use at the edge: The challenges of urban growth for the South. *The Rural South: Preparing for the Challenges of the 21st Century*. Southern Rural Development Center, Mississippi State, Miss.
- Haleman, D., J. Zimmerman, M. Sargent, and D. Billings. The impact of welfare reform on Kentucky's Appalachian counties. University of Kentucky Appalachian Center, Lexington, Ky.
- Hustedde, R., and B. King. Strengthening civic engagement in decision-making. *The Rural South: Preparing for the Challenges of the 21st Century*. Southern Rural Development Center, Mississippi State, Miss.

Veterinary Science

- Bailey, E. Horse genomics. *AgBiotech Net*, 2:1-4.
- Chambers, T.M. i.A.N. Invited book review of *Veterinary Virology* (Murphy et al., 3rd ed, Academic Press, 1999). *ASM News*, 66:637.
- Cothran, E.G., and F. Singer. Analysis of genetic variation in the Pryor Mountain wild horse herd. pp. 91-104. IN: F.J. Singer, and K.A. Schoenecker, *Managers' Summary—Ecological Studies of the Pryor Mountain Wild Horse Range 1992-1997*. Fort Collins, Colo., U.S. Geological Survey, Midcontinent Ecological Science Center.
- Donahue, J., and B. Smith. Equine leptospirosis. *Equine Practice*, 22:4.
- Dwyer, R.M. Bits and Pieces. *The Horse Journal*, August:10.
- Dwyer, R.M. Botulism: A shaky proposition. April:14.
- Dwyer, R.M. Drugs and show horses. *Equine Disease Quarterly*, 9:3.
- Dwyer, R.M. Equine rabies: Old disease, new risks. *Equine Disease Quarterly*, 8:4.
- Dwyer, R.M. Foal diarrhea. *The Horse*, March:57-62.
- Dwyer, R.M. Nurse mares. *Equine Disease Quarterly*, 8:3-4.
- Dwyer, R.M. An ounce of prevention. *The Horse Journal*, February:14.
- Dwyer, R.M. When should I call the vet? *The Horse*, June:122.
- Howe, D.K. Equine protozoal myeloencephalitis and the prospects for an effective vaccine. *Equine Disease Quarterly*, 8:2-3.
- Lear, T.L. Equine genome project. *Equine Disease Quarterly*, 8:3.
- Powell, D.G. Disease risks associated with the movement of horses. 27th Asian Racing Conference, Singapore.
- Powell, D.G. Equine infectious disease: A global perspective. *Veterinary Practice News, Equine Practice Supplement*. Winter:14-15.
- Powell, D.G., and P.J. Timoney. An unwelcome visitor. *Equine Disease Quarterly*, 8:3-4.
- Timoney, P. The significance of emerging diseases. *The Horse*, 17:39-41.
- Timoney, P.J. EVA—The silent threat. *Equus*, 267:26-31.
- Timoney, P.J., J. Traub-Dargatz, E.N. Ostlund, K.R. Lake, and C.A. Koprak. NAHMS equine '98 study highlights industry's lack of awareness of EVA. *Equine Disease Quarterly*, 9:4.
- Williams, N.M. Disease conditions in geriatric horses. *Equine Disease Quarterly*, 8:4-5.
- Williams, N.M. Disease conditions in geriatric horses. *Equine Practice*, 22:32.
- Williams, N.M. Fractures in horses. *Equine Disease Quarterly*, 8:5-6.
- Williams, N.M., and J.M. Donahue. Nocardiform placentitis. *Equine Disease Quarterly*, 9:5-6.

Ph.D. Dissertations

Agricultural Economics

- Hasan, Mohamad Fadhil. Government interventions and competitiveness: The case of the Indonesian palm oil industry.
- Johansson, Tulin Ozdemir. Interactions between economic growth and environmental quality: A county-level analysis.

Agronomy

- Devarenne, Timothy P. Molecular and biochemical characterization of squalene synthase from *Nicotiana tabacum*: A putative regulatory step in the sterol biosynthetic pathway.
- Duan, Ran. Relationship between yield and number of recombination events in soybean breeding.
- Teutsch, Christopher D. Soil, plant, and animal interactions on reclaimed mine-land pastures in southeastern Kentucky.
- Wei, Xiaochen. Studies on the biosynthesis and metabolites of pyridine alkaloids in *Nicotiana* species.
- Yang, Xintong. Genetic diversity among parents and performance of single and three-way crosses in winter wheat.

Animal Sciences

- Imwalle, Dennis Bradley. Endocrine control of bull sexual behavior.
- Gill, Amy Michelle. Effect of feeding frequency on behavior, feed digestibility, and cecal fermentation pattern in stabled horses and ponies.
- Slim, Rabih. Effects of polychlorinated biphenyls on vascular endothelial cell dysfunction: Modification by dietary lipids.
- Swanson, Kendal Carl. Mechanisms regulating pancreatic α -Amylase expression and secretion in ruminants.
- Tabeide, Zahra. Effect of immunoglobulin and milk fat globule membrane on culture agglutination.
- Traylor, Steven Leon. Assessment of nutrient bioavailability in meat and bone meal for pigs and chicks.
- Warren, Lori Kay. The effect of level and type of dietary fiber on the hydration status of horses in response to dehydration and endurance exercise.
- Washburn, Brian Eric. Ecological relationships among eastern cottontail rabbits, tall fescue, and native warm-season grasses.

Biosystems and Agricultural Engineering

- Gholamimrhabadi, Abolfazl. An Assessment of Factors Affecting the Competency of Agricultural Mechanization Programs and Teachers in the Islamic Republic of Iran.

Entomology

- Blank, Kenneth W. Identification, isolation, and characterization of *Clostridium bifermentans* Strain 10-A, a mosquito larvicidal bacterium.
- Lawrence, Kendra Lynn. Role of spiders and other generalist predators in the trophic dynamics of the forest-floor leaf-litter food web.
- Raymond, Charles Britt. Predatory interactions within a guild of predaceous heteroptera common in soybean, and their effect on survival of a soybean pest.
- Spohn, Bryan Gordon. Factors influencing the evolution of pheromone communication in the cabbage looper, *Trichoplusia Ni* (Hübner) (Lepidoptera: Noctuidae).

Nutrition and Food Science

- Ibrahim, W. Studies on the mechanism of oxidative damage: Role of superoxide and iron.
- O'Brien, M.L. Effects of peroxisome proliferators on antioxidant enzymes, vitamins, and redox-sensitive transcription factors in rats and hamsters.
- Zhao Y. Modulation of tumor necrosis factor-alpha expression by eicosapentaenoic acid.

Plant Pathology

- Wang, Jinghong. *dmaW* encoding tryptophan dimethylallyltransferase in ergot alkaloid biosynthesis from Clavicipitaceous fungi.

Rural Sociology

- Veeraghanta, S. Life on the margins: The Jenu-Kuruba and their forests.
- Redlin, M. Living on the dragon's back: Agriculture, environment, and rural identity in deep rural Montana.

Veterinary Science

- Burnett, S. Hale. Development of a competitive reverse transcription polymerase chain reaction assay for quantitation of equine interferon gamma, interleukin-2, interleukin-4, and glyceraldehyde-3-phosphate dehydrogenase.
- Holland Jr., R.E., Effect of passive transfer of maternal antibodies on early foal vaccination with inactivated equine influenza antigen.
- Lin, C.B. Mechanism of equine influenza virus mediated cytotoxicity.
- McManus, C.J. Effect of food restriction and pharmacological repartitioning of energy intake on reproductive activity in the mare.

M.S. Theses

Agricultural Economics

- Botts, Aleta Gale. Approaches and effects of two farm reorganization projects in Ukraine.
- Cruz, Stefanie Beth. An economic analysis of Kentucky dairy farm abatement cost.
- Hancock, Samuel Jesse. Limiting risk through agricultural cooperatives.
- Harvey, Andrew G. The simultaneous occurrence of changes in poverty, income, educational attainment, and employment: An endogenous model of regional progress.
- Kumako, Kuami Mawunyo. Applying rainfall insurance in developing countries: The case of Morocco; a feasibility analysis.
- Miriti, M'Kiara Kimathi. Sub optimality: The economic dilemma of public welfare relief and its relevance to recent welfare reform—a market perspective on poverty and income transfer programs.

Agronomy

- Ewing, Justin M. Effects of weed management strategies on winter wheat in Kentucky.
- Ferrell, Jason A. Comparison of glyphosate with other herbicides for in-season weed control in corn.
- Ipsilantis, Ioannis. Chromium effects on bulk soil and rhizosphere microbial communities and Cr bioremediation in the rhizosphere of *Brassica juncea* and by Cr reducing bacteria.
- Munshaw, Gregory C. Management strategies during the establishment year enhance production and fitness of seeded bermudagrass stolons.
- Peyyala, Rebecca. The value of increased pubescence density for yield and resistance to SMV in soybean.
- Pinkston, Warren W. Effect of nozzle size and pressure on coverage of artificial targets and tobacco leaves.
- Ruiz-Diego, Carmen. Groundwater and crop response to poultry litter application on reclaimed surface-mined land.
- Settles, Joseph E. Response of native plant communities one year after herbicide treatment, mowing, or burning in powerline rights-of-way.

Animal Sciences

- Anandappa, Marienne Angela. Trans-2-Hexenal: Its antibacterial activity and its potential as an alternative fumigant for produce.
- Edgington, Charlie B. Effects of copper supplementation on immune function in holstein heifers fed endophyte-infected or endophyte-free tall fescue hay.
- Funk, Dona Lee. Investigations into the use of gonadotropin-releasing hormone in estrus synchronization protocols for fixed-time inseminations of beef cattle.
- Howell, Julie Ann. Tissue distribution of Na⁺-dependent glutamate transporters in sheep and cattle and differential tissue expression of GLT-1 and EAAC1 in growing versus non-growing lambs.
- O'Connor, Cara Irene. The effect of fish oil supplementation on exercising horses.
- Portocarrero, Susana Maria. Evaluation of microbial population and shelf stability of country-cured ham.
- Smith, Roger Dwayne. Effects of social conditions on sexual behavior, luteinizing hormone concentrations, and testosterone concentrations in yearling beef bulls.
- Wolf, Charlie. The effectiveness of "Good-Fry" (a frying oil containing rice bran oil and sesame seed oil) on the percent trans fatty acids formed during restaurant frying.

Biosystems and Agricultural Engineering

- Camenisch, Gregory A. A mechanical harvesting and housing system for small burley tobacco crops.
- Carter, Seaborn B. Effects of temperature and substrate water content on phytase production in solid state fermentation.

- Chinn, Mari S. Temperature control of a solid state cultivation deep bed reactor for the production of xylanase by *Trichoderma Longibrachiatum*.
- Collins-Camargo, Francis. Evaluation of enhanced water quality through passive dewatering systems utilizing sand filters: A field and large scale laboratory study.
- Dawal, Eric. Evaluation of sediment basin effectiveness using a laboratory scale basin and field basins.
- Hallany, Jihad. Evaluation of passive dewatering system for small storms using a laboratory sediment basin.
- Mach, Christian. Design, implementation, and evaluation of an algorithm to control crop to air vapor pressure deficit in a sunlit plant growth chamber.
- Weber, Diana. Relative contribution of sediment from upland and channel erosion.

Entomology

- Adams, Aaron Scott. Interactions between prescribed fire and herbivory: Effects on oak regeneration.
- Griffin, Marisa Lynn. Ovipositional behavior of the 12-spotted lady beetle, *Coleomegilla maculata*: Choices among plant species and potential factors affecting those choices.
- Held, David Wayne. Evaluation of controlled atmosphere anoxia treatments as a potential control tactic for greenhouse propagules.
- Hemmann, Daniel John. Evolution of behavioral response to a mutant sex pheromone blend in the cabbage looper moth, *Trichoplusia ni*.
- Hoy, Heather Lynn. Continuous *in vitro* culture of *Microplitis croceipes* teratocytes and the role of larval secretory products.
- Huang, LingKang. Identification and isolation of genes related to the replication of *Campoplex sonorensis* ichnovirus.
- Morrison, Cynthia B. Effects of transplant date and management strategies on selected tobacco pests.
- Newton, Blake L. The ecology of the harvestman *Phalangium opilio*, a predator of lepidopteran eggs in central Kentucky soybean.

Horticulture

- Wilson, Tina. Influence of film coatings on germination of shrunken-2 sweet corn.

Plant Pathology

- Chaky, Jennifer L. The influence of spore attachment and surface wettability and rigidity on germination in *Colletotrichum graminicola*.
- Craven, Kelly D. Evolution of *Epichloë/Neotyphodium* species, fungal symbionts of grasses.
- Heist, E. Patrick. Development of tissue culture systems with *Peronospora tabacina* and various *Nicotiana* species to study growth of pathogen in callus and to examine interactions with host roots.

Rural Sociology

- Jao, J. Ethnic inequalities and educational attainment in Taiwan.
- Kershaw, D. Spirit and the farm: Sustaining the legacy in a new millennium.

Veterinary Science

- Holtz, Cedric. Weight distribution on an equine hoof: The postural signature device.
- Smith, Kimberly. The relationship between oxytocin and prostaglandin PGF_{2α} at the expected time of luteolysis in mares.

Financial Statement

Statement of Current General Fund Income and Expenditures Fiscal Year 2000

INCOME

Federal Funds:	
Hatch Amended	\$3,941,624.00
Hatch Multistate	869,791.00
McIntire-Stennis	418,946.00
Animal Health	61,254.00
Total Federal Funds	\$5,291,615.00
State Funds	24,518,338.00
Total Funds	\$29,809,953.00

EXPENDITURES

	Federal	State	Total
Personal Services	\$4,133,806.00	\$15,776,377.00	\$19,910,183.00
Travel	97,469.00	203,536.00	301,005.00
Equipment	420,226.00	688,074.00	1,108,300.00
Other Operating Expenses	640,114.00	7,850,351.00	8,490,465.00
Total Expenditures	\$5,291,615.00	\$24,518,338.00	\$29,809,953.00

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