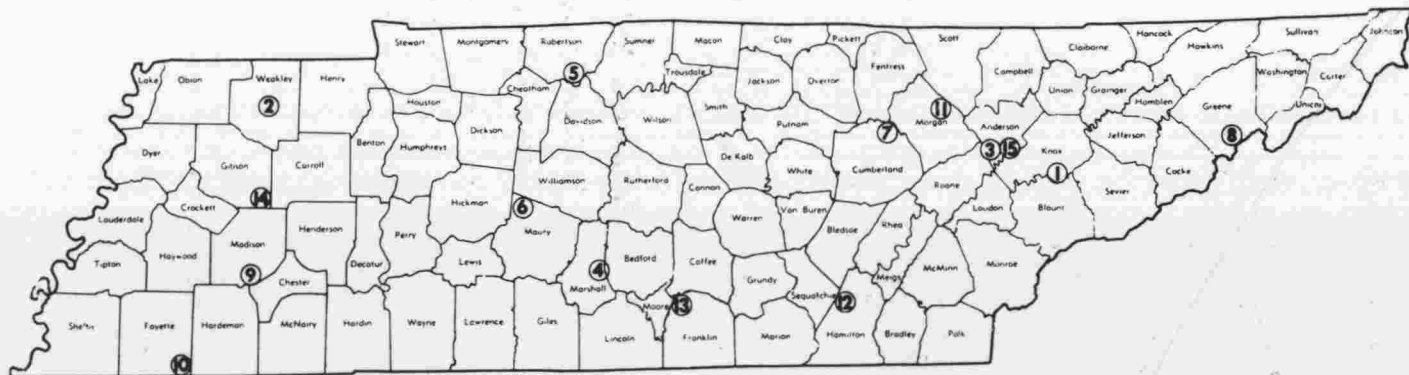


Ninety-Second
Annual Report
of the
Tennessee Agricultural
Experiment Station
1979

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- 15 Oak Ridge Forest and Arboretum*

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Ninety-Second Annual Report 1979

Tennessee Agricultural Experiment Station

Edward J. Boling.....	President of the University
W. W. Armistead.....	Vice President for Agriculture
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John I. Sewell.....	Assistant Dean

**The University of Tennessee
Knoxville**

LETTER OF TRANSMITTAL

Knoxville, Tennessee
January 2, 1980

To His Excellency, Lamar Alexander
Governor of Tennessee:

SIR: I have the honor of transmitting herewith, on behalf of the Board of Trustees of the University of Tennessee, a report of the work and expenditures of the Agricultural Experiment Station for the year 1979.

This report is submitted in accordance with the law requiring that such a report be submitted annually by the administrators of the Experiment Station to the Governor of the State.

Respectfully submitted,
Edward J. Boling, President

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Ninety-Second Annual Report

of the

Tennessee Agricultural Experiment Station

1979

FOREWORD

Included in this report are listings by departments of the following information:

- 1) Research projects active as of December 31, 1979;
- 2) Research projects terminated during the calendar year 1979;
- 3) Bulletins, articles, and reports prepared by Experiment Station staff members and published during the calendar year 1979.

In addition, this report contains the financial statement for the Agricultural Experiment Station covering the period July 1, 1978 to June 30, 1979. Also included is a list of the Experiment Station personnel for the calendar year 1979.

Active Projects

As of December 31, 1979, there were 161 Hatch (TN) projects and nine State (S) projects. Hatch projects are supported in part with Federal-Grant funds made available by Congress to the Agricultural Experiment Stations of the country under the Hatch Act Amended. State projects are supported entirely by University funds. There were 11 McIntyre-Stennis (forestry) projects.

The headquarters of the Tennessee Agricultural Experiment Station is located on the agricultural campus of the University of Tennessee at Knoxville. The UT-Comparative Animal Research Laboratory is located some 20 miles distant at Oak Ridge, Tennessee. In addition, there are other research centers which represent soil and climate conditions in the major regions of Tennessee. These other research centers are listed at the end of this report, and their locations are shown on the inside front cover.

Projects Terminated

During 1979, 43 projects were terminated. Reports on these projects have either been published or are being prepared for publication.

Publications

Published reports on research of the Tennessee Agricultural Experiment Station appear in Station Bulletins, in Tennessee Farm and Home Science, as well as in professional and technical periodicals and in various popular publications. There were nine Station Bulletins published during the year. The number of technical, semi-technical, and popular articles prepared by staff members and published during 1979 was 183. In addition, staff members published 13 Extension-type publications, regional bulletins, and special reports.

FINANCIAL STATEMENT
July 1, 1978 — June 30, 1979
The University of Tennessee Agricultural Experiment Station

	Federal Formula Funds				Federal Specific Grants	Other Funds	Total All
	Hatch Act-Amended		McIntire Stennis	Animal Health and Disease			
	Regular	Reg. Research					
Funds Available	12,486,079.32	\$513,954.78	\$235,419.95	\$37,032.70	\$94,031.97	10,683,489.76	\$14,050,008.48
Expenditures:							
Personal Services	\$2,365,594.11	\$503,103.33	\$232,330.62	\$12,932.55	\$47,419.95	\$ 4,658,132.78	\$ 7,819,513.34
Travel	13,770.40	1,606.56	1,278.47	16.00	1,604.08	244,643.61	262,919.12
Equipment	66,532.64	2,677.41	---	11,888.68	---	745,629.19	826,727.92
Land & Structures	---	---	---	---	---	126,287.04	126,287.04
Personnel Benefits	---	---	---	---	5,294.44	1,184,767.54	1,190,061.98
All Other	40,182.17	6,567.48	1,810.86	12,195.47	4,170.32	2,971,403.67	3,036,329.97
Unexpended Balances*	---	---	---	---	35,543.18	752,625.93	788,169.11
TOTALS	\$2,486,079.32	\$513,954.78	\$235,419.95	\$37,032.70	\$94,031.97	\$10,683,489.76	\$14,050,008.48

*Includes Carryover Obligations

AGRICULTURAL BIOLOGY

Proj. No.	Research Project Titles
TN 438 (S-74)	Ecology, Bio-economics and Management of Arthropod Pests of Soybeans.
TN 467 (S-102)	An Integrated System for the Suppression of the Boll Weevil.
TN 468 (S-105)	Host Plant Resistance in Cotton to Insects, Mites, Nematodes and Diseases.
TN 469 (S-76)	Nature and Extent of Variation in Root-Knot and Cyst Nematodes.
TN 473	Biology and Ecology of Culicidae and Tabanidae.
TN514	Biosystematics and Biological Control of Coccoidea Species in Tennessee.
TN 525 (S-90)	Rhizosphere Ecology as Related to Plant Health and Vigor.
TN 527 (S-70)	Virus Corn Diseases and Sorghum.
TN 533	Identification and Pathogenicity of Selected Plant-Parasitic Nematodes in Tennessee.
TN 536	Role of Face Flies in Epidemiology of Infectious Bovine Keratoconjunctivitis (IBK).
TN 537	Control of Lepidopterous Pests on Field Corn.
TN 544	Management of Vegetable Insect Pests.
TN 545	Ecology and Control of Forage and Pasture Insect Pests.
TN 557	Susceptibility of Cotton Cultivars to Seedling Pathogens.
TN 571	Evaluation of Insecticides for Use on Minor Crops in Tennessee.
TN 573	Control of Tobacco Insects.
TN 578	Etiology and Control of Small Grain Diseases.
TN 580	Diseases of Ornamentals and Nursery Crops.
TN 590	Detection and Control of Soybean Diseases.
TN 591	Breeding for Disease Resistance in Dark Tobacco.
TN 594	Etiology, Ecology, and Control of Cotton Diseases.
TN 595	Biology, Ecosystem Dynamics, and Control of Soybean Diseases.
S 87	Pesticide Impact Assessment Research and Data Analysis.

Projects Concluded in 1979

TN 395	Effect of Soil Environmental Conditions on Occurrence and Quantity of Cotton Seedling Pathogens.
TN 415	Breeding Disease Resistant Dark Tobacco.
TN 418	Diseases of Small Grains.
TN 419	Diseases of Ornamentals and Nursery Crops.
TN 420	Etiology and Control of Vegetable Diseases.
TN 421	Control of Tobacco Insects.
TN 423	Biology and Control of Cotton Diseases.
TN 431	Detection and Control of Soybean Diseases.

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AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

Proj. No.	Research Project Titles
TN 385	The Impact of Demographic Changes of Tennessee Rural Population.
TN 432C	Alternative Systems of Swine Production.
TN 443	Economics of Producing and Marketing Woody Ornamentals in the South.
TN 451	Economic Analysis of Selected Technologies for Producing Burley Tobacco.

- TN 465 Analysis of Factors Affecting the Short-Run and Long-Run Demand for Broiler Meat at Wholesale and Retail Market Levels.
- TN 466 Marketing Performance of Selected Milk Pricing Systems for the Southern Region.
- TN 484 Assessed Needs Among Elderly in Rural Tennessee.
- TN 486 Alternative Structures for Increasing Efficiency in Inter-and Intra-Regional Grain Marketing Systems.
- TN 488 Price Discovery and Informational Flows for Major Agricultural Commodities in the Southern Region.
- TN 489 Supply, Pricing, and Marketing Alternatives for Cattle, Beef Systems in the South.
- TN 492 Efficiency of Identification, Assembly and Transportation of Cotton to Mills and Export Outlets.
- TN 493 Impact of Farmers Home Administration Financing on Rural Housing.
- TN 495 The Potential Use of Futures Market Pricing Strategies for Tennessee Agricultural Products.
- TN 496 Social Organization for Development of Low-Income Rural Counties.
- TN 497 Analysis of Domestic Food Demand and Consumption Behavior.
- TN 499 Soybean Production Systems in Tennessee.
- TN 509 Farm Adjustment Opportunities on Commercial Farms in Tennessee.
- TN 523 Organization and Efficiency of the Fruit and Vegetable Production—Marketing Subsector in the South
- TN 529 Flexibility of Beef Production from Forage in Tennessee.
- TN 530 Legal Techniques Available to Farmers in the Management, Accumulation and Disposal of Capital Assets.
- TN 553 Housing for Low- and Moderate-Income Families.
- TN 554 Rural Economies and the Structure of the Agricultural Production Sector in Tennessee.
- TN 556 Farm Organization and Its Effect on Rural Society.
- TN 588 Alternative Farm Resource Management Systems in Tennessee.
- TN 603 The Socioeconomic Structure of Agriculture: Impacts and Sources of Change.
- TN 606 Analyses of Land Values and Related Critical Financial Ratios.

Projects Concluded in 1979

- TN 382 The Impact of Demographic Changes on Tennessee Rural Population.
- TN 388 Social and Psychological Factors Related to Managerial Success.
- TN 439 Tennessee Rural Change Perspectives.
- TN 464 Supply-Price Relations for Energy, Petrochemicals and Related Inputs for Tennessee Beef Industry.
- TN 519 The Effects of Changing Food Prices and Other Intervening Variables on Food Acceptance.

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AGRICULTURAL ENGINEERING

Proj. No.	Research Project Titles
TN 432B	Alternative Systems of Swine Production.
TN 445	Minimizing Energy and Labor in Harvesting and Curing Air-Cured Tobacco.
TN 480	Hydrologic/Water Quality Models for Agriculture and Forestry (contributing to Regional Proj. S-108).
TN 494	Evaluation of Selected Physical Properties Affecting Handling of Tennessee Vegetables.
TN 516	The Effect of Cotton Fiber Physical Properties on Dust Levels and on Yarn Characteristics.
TN 522	Abrasive Band Cutting Device for Severance of Soybean Plants.
TN 543	Management Practices for Erosion and Sedimentation Control.
TN 546	Engineering Systems and Energy Needs for Cotton Production (contributing to Regional Proj. S-134).
TN 560	Animal Waste Utilization and Treatment Systems (contributing to Regional Proj. S-144).
TN 577	Curing, Storing and Feeding High Value Hay in Large Packages.
TN 587	Use of the Earth as an Energy Source or Sink for Heating and Cooling Buildings.
TN 602	Energy Reduction for On-Farm Processing of Agricultural Products (contributing to Regional Proj. S-147).
TN 604	Optimize Efficiency of Energy Utilization in Agricultural Housing Systems (contributing to Regional Proj. S-149).
R11-1415-13	E. I. duPont deNemours Grant — Application of Titanium Dioxide on Agricultural Land.
R11-1415-17	A Modular Dryer for Large Hay Packages Using Solar Heated Air.
SEA 58-7B30-9-82	

Projects Concluded in 1979

TN 379	Development of Compatible Erosion-Control Practices and Machinery Systems.
TN 477	Minimum Tillage Equipment for Corn and Vegetable Crops.

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ANIMAL SCIENCE

Proj. No.	Research Project Titles
TN 284	Factors Affecting the Rates of Genetic Improvement of Dairy Cattle.
TN 432A	Alternate Systems of Swine Production.
TN 433	Pre- and Post-Weaning Management of Beef Calves.
TN 449	Reproductive Efficiency in the Bovine Male.
TN 457	Complete Feed Rations Using Home Grown Forages for Dairy Cattle.
TN 459	Beef Production of Different Size Cows Giving Different Amounts of Milk on Different Pastures.
TN 462	Winter Feeding Dry Brood Cows for Efficient Beef Production.
TN 463	Improvement of Reproductive Performance in Cattle.
TN 471	Development of Improved Feeder Calf Classification Procedures.
TN 474	Effect of Feeding Regimen in Gestation on First Lactation of Dairy Heifers.
TN 475	Effect of Plane of Nutrition on Mammary Gland Development in Dairy Heifers.
TN 478	Quantitation of the Selenium and Vitamin E Requirements of Swine.
TN 479	Factors Influencing Iron Utilization for Prevention of Iron Deficiency Anemia in Swine.
TN 481	Breeding Methods for Beef Cattle in the Southern Region (contributing to Regional Proj. S-10).
TN 482	Genetic Methods of Improving Dairy Cattle for the South (contributing to Regional Proj. S-49).
TN 498	Etiology and Control of Hypomagnesemic Tetany in Ruminants Utilizing Cool Season Grasses (contributing to Regional Proj. S121).
TN 503	Mycoplasma Gallisepticum and Mycoplasma Synoviae Infections in Commercial Egg Producing Flocks.
TN 504	Endocrine Relationship in the Mastitis Metritis Agalactia (MMA) Complex in Pigs.
TN 511	Hormonal Relationships in Egg Shell Formation (contributing to Regional Proj. S131).
TN 512	Alternatives for Finishing Cattle in Tennessee.
TN 515	Endocrine Factors Associated with Transport of Molecules into and out of the Uterus.
TN 528	Factors Affecting Nutrient Consumption and Digestibility of Grazed and Harvested Forages.
TN 529	Flexibility of Beef Production from Forages in Tennessee.
TN 531	Induced Pauses in Laying Hens.
TN 535	Absorption of Minerals in Large Animals.
TN 538	Effect of Heterosis on Nutritional Efficiency of Beef Production.

TN 539	Evaluation of Overseeding Systems for Improvement of Pastures for Beef Production.
TN 541	Relationships of Morphological Development of Joints and Long Bones to Skeletal Soundness of Growing Swine.
TN 551	The Etiopathology of Avian Glaucoma.
TN 552	Vitamin Injections for Beef Cows.
TN 559	Nutritional Systems for Swine to Increase Reproductive Efficiency (contributing to Regional Proj. S145).
TN 563	Management of Purchased Feeder Pigs.
TN 567	Biochemical and Histological Evaluation of Thiamin Effects on Land Intoxication in Cattle.

Proj. No.**Research Project Titles**

TN 598	Adrenocorticotrophin Involvement in Stress Related Early Embryonic Mortality in Swine.
TN 607	Development of Low-Protein Broiler Diets.
S-2	Swine Testing and Evaluation.
S-59	Bull Evaluation.
S-79	Exotic Breeds of Sheep to Increase Lamb Production in Tennessee.
S-82	Nutritive Value of Agricultural and Industrial Waste Products.

Projects Concluded in 1979

TN 460	Effect of Initial Weight and Winter Feeding Level on Subsequent Performance of Slaughter Beef Heifer.
TN 461	Maximum Utilization of High Quality Forages for Dairy Cattle.

Bulletins, Articles, and Reports — 1979

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TN 520 (S-126)	Career Projections and Attainment of Low-Income Youth: Changes Over Time.

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TN 513	Role Perception of Working and Non-Working Mothers in Rural and Urban Areas.

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TN 569	Platelet Function in Hypomagnesemic Ruminants.
TN 585	Selection of Mutant Germplasm for Crop Improvement.
TN 586	Mineral-Hormonal Interrelationships to Hypomagnesemia in Ruminants.
0210*	Late Somatic Effects of Energy Pollutants.
2655*	Plant Biomass and Energy Conservation.

*U.S. Department of Energy project numbers.

Proj. No.	Projects Concluded in 1979
TN 390	Comparative Metabolism of Micro- and Macro-Elements in Animals.
TN 401	Mutagenesis and the Development of Mutant Germplasm in Economic Plants.
TN 410	Species Comparison of Pre- and Post-Natal Utilization of Mineral Elements.

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Proj. No.	Research Project Titles
TN 450	Effect of Vegetarian Diets on Bone Density and Nutrient Intakes of Aging Women.
TN 500	Functional Properties of Plant Proteins as Influenced by Other Ingredients of Formulated Foods.
TN 501	Effect of Dietary Sulfur on Protein Metabolism.
TN 502	Metabolic Alterations in Obesity.
TN 507	Influence of Dietary Protein on Renal Function, Protein Status and Longevity of Male Rats.
TN 519	The Effects of Changing Food Prices and Other Intervening Variables on Food Acceptance.
TN 542	Effects of Xenobiotics on Sulfur Metabolism.
TN 572	Factors Affecting Food Habits of Adolescents and Young Adults.
TN 605	Nutritional Health of Adolescent Females.
TN 611	Interrelationship Between Food Restriction and Metabolism of Drugs and Chemicals.

Project Concluded in 1979

TN 384	Patterns of Food Intake and Nutritional Health of Girls.
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Proj. No.	Research Project Titles
TN 437	The Influence of Processing Factors in Dry-Cured Ham Quality.
TN 452	Use of Protein Isolates and Vegetable Fats in Manufactured Meat Products.
TN 453	Utilization of Acid Cheese Whey for Food Products.
TN 505	Utilization of Modified and Unmodified Proteins in Baked Goods.
TN 508	Quality Evaluation of Vegetable Cultivars and Development of Food Products.
TN 524	Marketability and Acceptability of Beef Produced Under Forage and Forage Grain Management Systems.
TN 547	Quality and Shelf Life of Food Products in the Marketing Channels.
TN 558	The Use of Nonfat Dry Milk for the Manufacture of Mozzarella Cheese.
TN 592	Control of Aflatoxin and Related Mycotoxins in Agri Commodities Processed Foods and Finished Foods.

TN 593	Antimicrobial Properties of Naturally Occurring Compounds and Currently Approved Food Additives.
TN 596	Lipids and Their Relationship to Food Quality.
TN 600	Physical Chemical and Histological Traits of Muscle Associated With Composition and Palatability.
S 88	Pesticides in/on Raw and Processed Foods.

Projects Concluded in 1979

TN 393	Flavor Precursors in Protein Concentrates and Isolates.
TN 394	Histological and Histochemical Relationships of Muscle to Meat Quality and Cutability.
S 73	Pesticides in/on Raw and Processed Foods.

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Proj. No.	Research Project Titles
TN 107	Relationship of Soil and Other Site Factors to Forest Composition and Productivity.
TN 470	Breeding Strategies for Genetic Improvement of Commercial Forest Trees in the South.
Tn 491	Freshwater Food Animals.
TN 521	Culture and Management of Selected Game Fishes.
TN 599	Applied Physiology of Economically Important Fishes.
TN 601	Reclamation of Drastically Disturbed Soils.

M-S 16	Economic Importance of Tennessee's Forest Resource and Wood Products Industries.
M-S 19	Regeneration of Dendroctonus-killed Pine Stands in East Tennessee.
M-S 21	Development of Systems Analytic and Simulation Techniques for Renewable Resources Management.
M-S 22	Prescribed Fire for Site Preparation and Improved Pine Productivity in Tennessee Forests.
M-S 23	Breeding of Upland Hardwoods.
M-S 24	Breeding of Coniferous Trees.
M-S 25	Defect Estimation of East Tennessee Hardwoods.
M-S 26	Controlling Strip Mine Runoff.
M-S 27	Natural History of Large Mammals in the Southern Appalachian Forests.
M-S 28	Wood Quality Evaluation by Gamma-Ray Densitometry.
M-S 29	Economic Impact of Death Taxes on Tennessee's Timber Resources.
M-S 30	Effects of Manipulating Forest Habitats Upon the Physical Condition of Bobwhite Quail.
M-S 31	Cultural Techniques for Improving the Survival and Growth of Trees.
M-S 33	Visual Preferences of Recreationists During On-Site Engagements in Forest Environments.
S 30	The University of Tennessee Arboretum.
S 84	Implications for Wildlife of Land Use Patterns and Habitat Alterations in Tennessee.

Projects Concluded in 1979

TN 207	Forest Tree Fertilization.
M-S 9R	Characteristics of Juvenile and Branch Wood in Selected Eastern Hardwoods.
M-S 17	Attitudes and Preferences Related to Forest Recreation Opportunities.
M-S 20	Fragmentation of Large Forest Ownerships and Its Impact on Tennessee's Forest Economy.
S 70	Forest Cutting and Water Yield.
S 83	Strip Mine Revegetation.

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ORNAMENTAL HORTICULTURE AND LANDSCAPE DESIGN

Proj. No.	Research Project Titles
TN 370	Shade Tree Cultivars.
TN 425	Pesticide Evaluation, Their Residual Effects and Photo-Toxicity in Turfgrasses.
TN 426	Cultural and Mechanical Management and Evaluation of Turfgrasses.
TN 534	Production Systems of Nursery Stock.
TN 581	Chemical Control of Plant Growth in Florist Pot and Bedding Plants.
TN 584	Histochemical Characterization of Cytoplasmic Globules in Plants.

Projects Concluded in 1979

TN 392	Mutation Breeding in Vegetatively Propagated Flowering Pot Plants and Garden Perennials.
TN 429	Chemical Control of Plant Growth in Florist Pot Plants and Bedding Plants.

Bulletins, Articles, and Reports — 1979

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PLANT AND SOIL SCIENCE

Proj. No.

Research Project Titles

- | | |
|--------|--|
| TN 406 | Small Grain Improvement Through Breeding (wheat, oats, barley, and rye). |
| TN 408 | Corn Improvement. |
| TN 412 | Interfacial Reactions in Soils. |
| TN 414 | Field Crop Variety Evaluation. |
| TN 417 | Fruit Crop Investigations. |
| TN 428 | Soil Survey and Its Relation to Behavior of Different Soils Under Various Uses. |
| TN 444 | Forage Crops Ecology and Management. |
| TN 476 | Soybean Breeding. |
| TN 483 | Forage Grass Genetics and Breeding. |
| TN 487 | Minimum Tillage and Double Cropping on Weed Populations and Persistence and Fate of Herbicides (contributing to Regional Proj. S-110). |
| TN 490 | Diagnosis and Correction of Manganese and Molybdenum Problems in Legumes (contributing to Regional Proj. S-117). |
| TN 506 | Burley Tobacco Genetics and Breeding. |

- TN 510 Weed Control in Economic Crops.
- TN 518 Plant Germplasm — Its Introduction, Maintenance and Evaluation (contributing to Regional Proj. S-9).
- TN 526 Viruses and Mycoplasma-like Organisms Causing Diseases of Corn and Sorghum (contributing to Regional Proj. S-70).
- TN 540 Soil and Crop Management Systems for Soil Conservation and Erosion Control.
- TN 555 Mycotoxins of Corn and Other Feed Grains (contributing to Regional Proj. S-132).
- TN 561 Corn Yield as Affected by Plant Environment.
- TN 562 Effect of Soil, Soil Fertility Level, Added Nutrients, and Season on Crop Yield.
- TN 564 Effects of Applied Wastes on Soils and Crops.
- TN 565 Availability of Secondary Nutrients in Tennessee Soils.
- TN 570 Cotton Production Practices.
- TN 574 Cotton Seed and Fiber Development.
- TN 575 Plant Response to Herbicides and Antidotes.
- TN 576 Plant Growth Regulator Effects on Fruit, Vegetable and Agronomic Crops.
- TN 582 Vegetable Crop Production.
- TN 583 Fertilization and Cultural Practices to Improve Tobacco Safety.
- TN 589 Effects of Soil pH Levels on Crop Growth.
- TN 597 Development and Evaluation of Rootstocks for Peaches (contributing to Regional Proj. S-97).

Projects Concluded in 1979

- TN 399 Soil and Plant Nutrient Status and Environmental Factors in Relation to Crop Yields.
- TN 400 Effect of Plant Environment on Its Photosynthetic Capability.
- TN 402 Cotton Seed and Fiber Development.
- TN 403 Cotton Production and Varietal Adaptation.
- TN 404 Forage Crop Production and Metabolic Patterns Under Different Management and Environmental Conditions.
- TN 407 Selectivity and Mode of Action of Herbicides and Antidotes.
- TN 409 Development and Evaluation of Rootstocks for Peach (contributing to Regional Proj. S-97).
- TN 411 Vegetable Crop Production.
- TN 413 Liming and Its Effect on Nutrient Availability.
- TN 416 Plant Growth Regulator Effects on Fruit, Vegetable, and Agronomic Crops.

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TEXTILES AND CLOTHING

Proj. No.

Research Project Title

TN 485

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 R. M. Hayes, Assistant Professor, Jackson
 M. J. Hood, Graduate Research Assistant

¹In cooperation with U.S. Department of Agriculture.

P. E. Hoskinson, Associate Professor,
Jackson
L. S. Jeffery, Associate Professor
D. C. Jones, Graduate Research
Assistant
N. S. Kearney, Jr., Graduate Research
Assistant
J. M. Kennedy, Graduate Research
Assistant
H. C. Kincer, Assistant Professor
W. A. Krueger, Associate Professor
G. M. Lessman, Associate Professor
R. J. Lewis, Associate Professor
D. A. Lietzke, Associate Professor
J. E. Lothrop, Graduate Research
Assistant
J. K. McDaniel, Graduate Research
Assistant
W. J. McLaurin, Assistant Professor
D. W. Monks, Graduate Research
Assistant
C. A. Mullins, Associate Professor,
Crossville

B. C. Nichols¹, Associate Professor,
Greeneville
J. R. Overton, Associate Professor,
Jackson
W. L. Parks, Professor
D. V. Peterson, Graduate Research
Assistant
V. H. Reich, Associate Professor
J. H. Reynolds, Professor
K. M. Ross, Graduate Research
Assistant
L. N. Skold, Professor
D. B. Smith, Graduate Research
Assistant
W. E. Stevens, Graduate Research
Assistant
J. M. Stewart¹, Associate Professor
D. D. Tyler, Assistant Professor,
Jackson
D. R. West, Assistant Professor
C. S. Williams, Graduate Research
Assistant
J. D. Wolt, Assistant Professor

TEXTILES AND CLOTHING

Anna Jean Treece, Professor and Head of
Department
Irene L. Barnes, Graduate Research

Assistant
Betsy C. Westlake, Graduate Research
Assistant

PERSONNEL CHANGES

Appointments

William R. Abner, Graduate Research
Assistant in Animal Science, September
10, 1979
John R. Adams, Graduate Research As-
sistant in Agricultural Economics, March
20, 1979
Jeffrey D. Arnold, Graduate Research As-
sistant in Animal Science, September 7,
1979
Bobby D. Banks, Graduate Research As-
sistant in Animal Science, June 15, 1979
Irene L. Barnes, Graduate Research
Assistant, Department of Textiles and
Clothing, September 1, 1979.
J. M. Black, Graduate Research Assistant
in Food Technology and Science, January
1, 1979

Roy B. Card, Graduate Research Assistant
in Forestry, Wildlife, and Fisheries,
January 1, 1979
Ricky J. Carlisle, Graduate Research As-
sistant in Plant and Soil Science, March
12, 1979
W. J. Cheatham, Assistant Professor in
Agricultural Engineering, November 26,
1979.
D. M. Churchville, Graduate Research As-
sistant in Food Technology and Science,
September 1, 1979
P. A. Cope, Graduate Research Assistant in
Ornamental Horticulture and Landscape
Design, September 1, 1979
Sherry Cunningham, Graduate Research
Assistant in Agricultural Biology, March
26, 1979

¹In cooperation with U.S. Department of
Agriculture

- John R. Davis, Graduate Research Assistant in Plant and Soil Science, July 1, 1979
- P. M. Davidson, Assistant Professor in Food Technology and Science, August 1, 1979
- J. W. Day, Assistant Professor in Ornamental Horticulture and Landscape Design, July 1, 1979
- S. A. Devine, Graduate Research Assistant in Food Technology and Science, June 15, 1979
- Dennis E. Deyton, Assistant Professor in Plant and Soil Science, September 17, 1979
- F. A. Draughon, Assistant Professor in Food Technology and Science, April 16, 1979
- Guy Dyer, Graduate Research Assistant in Animal Science, June 13, 1979
- W. R. Dyer, Graduate Research Assistant in Food Technology and Science, June 15, 1979
- Jerry E. Freeny, Graduate Research Assistant in Plant and Soil Science, January 1, 1979
- Dale M. Garner, Graduate Research Assistant in Agricultural Economics, September 17, 1979
- Billy B. Greene, Graduate Research Assistant in Animal Science, September 17, 1979
- R. S. Guinn, Research Associate in Agricultural Engineering, July 1, 1979
- W. E. Hart, Graduate Research Assistant in Agricultural Engineering, September 17, 1979
- Lanny W. Hass, Graduate Research Assistant in Agricultural Economics, September 17, 1979
- Richard N. Heitmann, Assistant Professor in Animal Science, August 31, 1979
- Keith Henegar, Graduate Research Assistant in Agricultural Biology, September 17, 1979
- C. E. Hill, Graduate Research Assistant in Ornamental Horticulture and Landscape Design, March 26, 1979
- David Hodge, Graduate Research Assistant in Animal Science, July 1, 1979
- Charles M. Irwin, Graduate Research Assistant in Animal Science, June 18, 1979
- W. M. Johnson, Graduate Research Assistant in Food Technology and Science, September 17, 1979
- Donald C. Jones, Graduate Research Assistant in Plant and Soil Science, June 18, 1979
- Henry G. Kattesh, Assistant Professor in Animals Science, January 22, 1979
- Noble S. Kearney, Jr., Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- Charles D. Keiser, Graduate Research Assistant in Agricultural Economics, March 15, 1979
- Thomas M. Keith, Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- Robert Kelly, Graduate Research Assistant in Agricultural Biology, September 17, 1979
- Marcia Keyserling, Graduate Research Assistant in Agricultural Biology, January 1, 1979
- Edward L. Lach, Jr., Graduate Research Assistant in Agricultural Economics, September 17, 1979
- Dearl D. Lampley, Graduate Research Assistant in Animal Science, September 17, 1979
- Robert P. Larkin, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 17, 1979
- Kevin T. Leahy, Graduate Research Assistant in Animal Science, September 17, 1979
- David A. Lietzke, Associate Professor in Plant and Soil Science, October 1, 1979
- Alan D. Lyons, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 17, 1979
- Judith K. McDaniel, Graduate Research Assistant in Plant and Soil Science, January 1, 1979
- Cary D. McDonald, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, June 15, 1979
- Michael R. McLaughlin, Assistant Professor in Agricultural Biology, July 1, 1979
- Wayne J. McLaurin, Assistant Professor in Plant and Soil Science, May 29, 1979

- Deborah D. McRae, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 17, 1979
- John B. McRae, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, January 1, 1979
- W. T. Mahoney, Graduate Research Assistant in Agricultural Engineering, January 1, 1979
- Douglas R. Metzler, Graduate Research Assistant in Animal Science, September 17, 1979
- Cregg D. Miyat, Graduate Research Assistant in Agricultural Economics, September 17, 1979
- David W. Monks, Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- John A. Mullins, Jr., Research Associate in Forestry, Wildlife, and Fisheries, July 9, 1979
- Gary Palmer, Graduate Research Assistant in Agricultural Biology, September 17, 1979
- David V. Peterson, Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- Lydia J. Petersson, Research Associate in Agricultural Economics, July 2, 1979
- Basil E. Pinker, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 17, 1979
- A. R. Post, Graduate Research Assistant in Food Technology and Science, October 1, 1979
- Christopher K. Reynolds, Graduate Research Assistant in Animal Science, September 17, 1979
- John M. Richardson, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, July 1, 1979
- Kelly R. Robbins, Assistant Professor in Animal Science, July 23, 1979
- J. W. Roberts, Research Assistant in Ornamental Horticulture and Landscape Design, August 21, 1979
- Katye M. Ross, Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- Ben T. Rudd, Graduate Research Assistant in Agricultural Economics, March 19, 1979
- Nancy E. Sanders, Graduate Research in Animal Science, September 4, 1979
- Bruce M. Saul, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, July 1, 1979
- Robert Simpson, Graduate Research Assistant in Agricultural Biology, June 13, 1979
- Daniel B. Smith, Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- Stuart Stein, Graduate Research Assistant in Agricultural Biology, September 17, 1979
- William E. Stevens, Graduate Research Assistant in Plant and Soil Science, September 17, 1979
- Clinton S. Strohmeir, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, January 1, 1979
- Mark S. Tisa, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, January 1, 1979
- Frank Wartman, Graduate Research Assistant in Agricultural Biology, January 1, 1979
- L. J. Washam, Graduate Research Assistant in Food Technology and Science, January 1, 1979
- Glenn R. Wehner, Graduate Research Assistant in Animal Science, September 1, 1979
- Dennis R. West, Assistant Professor in Plant and Soil Science, July 20, 1979
- Glen D. Whipple, Assistant Professor in Agricultural Economics, December 17, 1979
- Charles S. Williams, Graduate Research Assistant in Plant and Soil Science, June 15, 1979
- Peter A. Williams, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 17, 1979
- Jeffery D. Wolt, Assistant Professor in Plant and Soil Science, April 16, 1979
- Terry L. Worley, Graduate Research Assistant in Animal Science, September 17, 1979

Terminations

- Kenneth W. Bell, Graduate Research Assistant in Plant and Soil Science, August 21, 1979
- Roger D. Billingsley, Graduate Research Assistant in Animal Science, August 24, 1979
- C. C. Brandt, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, August 31, 1979
- P. J. Bredderman, Associate Professor, Comparative Animal Research Laboratory, June 30, 1979
- J. W. Brown, Administrative Assistant, Comparative Animal Research Laboratory, August 10, 1979
- William F. Brown, Graduate Research Assistant in Animal Science, July 20, 1979
- George J. Buntley, Associate Professor in Plant and Soil Science, February 28, 1979
- S. L. Cantrell, Graduate Research Assistant in Food Technology and Science, August 31, 1979
- C. B. Claiborne, Graduate Research Assistant in Food Technology and Science, March 12, 1979
- James E. Clark, Graduate Research Assistant in Agricultural Economics, July 14, 1979
- A. B. Cole, Graduate Research Assistant in Food Technology and Science, December 31, 1979
- J. P. Conn, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 14, 1979
- E. E. Cox, Graduate Research Assistant in Food Technology and Science, September 14, 1979
- J. L. Crawford, Graduate Research Assistant in Food Technology and Science, December 31, 1979
- George K. Criner, Graduate Research Assistant in Agricultural Economics, September 8, 1979
- Gary E. Day, Graduate Research Assistant in Plant and Soil Science, December 31, 1979
- William F. Drake, Graduate Research Assistant in Plant and Soil Science, February 28, 1979
- Richard E. Estell, Graduate Research Assistant in Animal Science, August 15, 1979
- James T. Fain, Graduate Research Assistant in Animal Science, June 30, 1979
- Robert R. Fincher, Graduate Research Assistant in Plant and Soil Science, August 15, 1979
- Richard C. Fudge, Graduate Research Assistant in Animal Science, March 30, 1979
- Daniel N. Good, Graduate Research Assistant in Plant and Soil Science, August 31, 1979
- Gerald F. Graham, Graduate Research Assistant in Agricultural Economics, June 1, 1979
- R. S. Guinn, Graduate Research Assistant in Agricultural Engineering, June 30, 1979
- P. M. High, Graduate Research Assistant in Agricultural Engineering, December 31, 1979
- Joe H. Hope, III, Graduate Research Assistant in Plant and Soil Science, September 18, 1979
- W. W. Huang, Biostatistician, Comparative Animal Research Laboratory, May 31, 1979
- D. A. Hutsell, Graduate Research Assistant in Food Technology and Science, May 31, 1979
- Barbara Ininns, Graduate Research Assistant in Animal Science, April 30, 1979
- George K. Jeffers, Graduate Research Assistant in Agricultural Biology, January 13, 1979
- Pedro R. Jones, Graduate Research Assistant in Agricultural Biology, August 15, 1979
- R. G. Jordan, Systems Analyst, Comparative Animal Research Laboratory, April 30, 1979
- Thomas M. Keith, Graduate Research Assistant in Plant and Soil Science, October 31, 1979
- B. J. Kelman, Assistant Professor, Comparative Animal Research Laboratory, August 3, 1979

- S. Kincaid, Research Associate in Ornamental Horticulture and Landscape Design, August 10, 1979
- William R. Knight, Graduate Research Assistant in Plant and Soil Science, May 4, 1979
- Maurice R. Landes, Graduate Research Assistant in Agricultural Economics, March 10, 1979
- Dale J. Leuck, Research Associate in Agricultural Economics, September 29, 1979
- Randy R. Lyle, Graduate Research Assistant in Animal Science, June 13, 1979
- V. J. McDonald, Jr., Information Officer, Comparative Animal Research Laboratory, August 24, 1979
- Charles D. Manning, Graduate Research Assistant in Plant and Soil Science, March 20, 1979
- D. R. Maxedon, Graduate Research Assistant in Food Technology and Science, August 31, 1979
- D. M. Merryman, Graduate Research Assistant in Agricultural Engineering, April 1, 1979
- Timothy S. Moore, Graduate Research Assistant in Agricultural Economics, July 14, 1979
- Bradley Mullens, Graduate Research Assistant in Agricultural Biology, February 1, 1979
- H. J. Norman, Graduate Research Assistant in Agricultural Engineering, April 1, 1979
- Bobby G. Nutt, Graduate Research Assistant in Animal Science, August 31, 1979
- Carolyn L. Orr, Graduate Research Assistant in Animal Science, August 24, 1979
- Jerry K. Parker, Graduate Research Assistant in Animal Science, June 30, 1979
- M. G. Pearsall, Graduate Research Assistant in Food Technology and Science, January 1, 1979
- S. Peng, Graduate Research Assistant in Ornamental Horticulture and Landscape Design, March 15, 1979
- A. L. Platt, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, August 31, 1979
- H. B. Quigley, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, December 31, 1979
- Teresa Ragain, Graduate Research Assistant in Agricultural Biology, February 1, 1979
- Nancy Ramsey, Graduate Research Assistant in Animal Science, September 14, 1979
- J. C. Rennie, Associate Professor, Forestry, Wildlife, and Fisheries, October 1, 1979
- Richard S. Ritter, Graduate Research Assistant in Animal Science, June 4, 1979
- D. M. Robie, Assistant to the Director, Comparative Animal Research Laboratory, February 9, 1979
- Ronald H. Rogers, Graduate Research Assistant in Plant and Soil Science, March 20, 1979
- Gilbert N. Rhodes, Jr., Graduate Research Assistant in Plant and Soil Science, August 15, 1979
- Dennis B. Seaton, Graduate Research Assistant in Plant and Soil Science, January 31, 1979
- G. Elizabeth Self, Graduate Research Assistant, Department of Textiles and Clothing, August 31, 1979.
- D. Shannon, Graduate Research Assistant in Animal Science, September 14, 1979
- J. D. Shannon, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, September 30, 1979
- Ronald R. Sharpe, Graduate Research Assistant in Plant and Soil Science, October 19, 1979
- Carl. R. Siegrist, Jr., Graduate Research Assistant in Agricultural Economics, March 31, 1979
- G. E. Spalding, Associate Professor, Comparative Animal Research Laboratory, November 30, 1979
- Felix J. Spinelli, Graduate Research Assistant in Agricultural Economics, October 3, 1979
- C. S. Strohmeir, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, December 31, 1979
- Clyde L. Viers, Graduate Research Assistant in Plant and Soil Science, March 16, 1979
- E. K. Vollmar, Graduate Research Assistant in Food Technology and Science, January 1, 1979

Deborah K. Wagner, Graduate Research Assistant in Agricultural Economics, September 20, 1979

J. T. Walker, Instructor in Agricultural Engineering, February 1, 1979

William H. Wall III, Graduate Research Assistant in Plant and Soil Science, August 15, 1979

E. E. Watson, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, August 31, 1979

J. Keith Watson, Graduate Research Assistant in Agricultural Biology, January 12, 1979

Dennis J. Weller, Graduate Research Assistant in Agricultural Economics, September 6, 1979

W. E. Whitworth, Graduate Research Assistant in Forestry, Wildlife, and Fisheries, June 30, 1979

Elaine K. Wiedemann, Assistant Communications Specialist, June 5, 1979

Changes of Titles

Karl M. Barth, to Professor in Animal Science, July 1, 1979

Walter J. Bergfield, to Business Manager, Comparative Animal Research Laboratory, July 1, 1979

B. L. Bledsoe, to Professor and Associate Head of Agricultural Engineering, July 1, 1979

M. J. Constantin, to Professor and Associate Director, Comparative Animal Research Laboratory, July 1, 1979

George C. Creswell, to Supervisor, Comparative Animal Research Laboratory, July 1, 1979

Ralph W. Dimmich, to Professor in Forestry, Wildlife, and Fisheries, July 1, 1979

John A. Gillies, to Research Associate in Agricultural Economics, July 2, 1979

John P. Hitchcock, to Associate Professor in Animal Science, July 1, 1979

H. O. Jaynes, to Professor in Food Technology and Science, July 1, 1979

Ruth C. Johnson, to Research Associate in Agricultural Economics, November 12, 1979

C. C. Melton, to Professor in Food Technology and Science, July 1, 1979

Robert H. Orr, to Associate Professor in Rural Sociology, July 2, 1979

Charles D. Pless, to Professor in Agricultural Biology, July 1, 1979

F. D. Tompkins, to Associate Professor in Agricultural Engineering, July 1, 1979

Retirements

J. A. Corrick, Assistant Professor in Animal Science, January 5, 1979

S. L. Hansard, Professor, Comparative Animal Research Laboratory, June 30, 1979

Leonard M. Josephson, Professor in Plant and Soil Science, June 30, 1979

W. J. Kopp, Professor, Comparative in Animal Research Laboratory, October 12, 1979

Reba Lawson, Assistant Professor in Agricultural Engineering¹, August 24, 1979

Horace C. Smith, Associate Professor in Plant and Soil Science, June 30, 1979

Maxwell E. Springer, Professor in Plant and Soil Science, June 30, 1979

Homer D. Swingle, Professor in Plant and Soil Science, January 15, 1979

Anna Jean Treece, Professor and Head, Department of Textiles and Clothing, August 31, 1979.

John H. Turner¹, Associate Professor in Plant and Soil Science, July 31, 1979

Smith Worley, Jr.¹, Associate Professor in Plant and Soil Science, August 31, 1979

Returned from Leave

D. M. Ostermeier, Associate Professor in Forestry, Wildlife, and Fisheries, June 18, 1979

F. W. Woods, Professor in Forestry, Wildlife and Fisheries, August 6, 1979

Transfer

M. S. Edington, from Editor, Comparative Animal Research Laboratory, to

Managing Editor in Graduate School of Biomedical Sciences, July 1, 1979

¹In Cooperation with U. S. Department of Agriculture