Contents

Past, Present, and Future of Conservation Tillage Systems

History and Future Challenges and Opportunities in Conservation Tillage for a Sustainable Agriculture: Research and Extension Perspective Raymond N. Gallaher	2
Conservation Tillage Development at the ABC Cooperatives in Paraná, Brazil Franke Dijkstra	12
Past, Present, and Future of Conservation Tillage: U.S.A. Farmer Perspective Lamar Black	19
Twenty-Five year Review of Conservation Tillage in the Southern U.S.: Perspective from Industry John F. Bradley	20
Making Conservation Tillage Conventional, Building a Future on 25 Years of Research: Research and Extension Perspective Rolf Derpsch	25
Conservation Tillage in Alabama's "Old Rotation" C. C. Mitchell, D.W. Reeves, and D. Delaney	30
High Residue Conservation Tillage System for Cotton Production: A Farmers Perspective H.A. Torbert, J.T. Ingram, J.T. Ingram Jr, and R. Ingram	30
Changes in Agricultural Tillage Practices in Mississippi from 1997 to 2002 J.R. Johnson, Herby Bloodworth, and Keith McGregor	42
A Whole Farm Economic Analysis of No-tillage and Tilled Cropping Systems G. B. Triplett, J. R. C. Robinson, and S. M. Dabney	48
Making No-Till "Conventional" in Tennessee H. P. Denton and D. D. Tyler	53
Conservation Tillage Tomato and Cotton Production Systems in California J. Mitchell, W. Horwath, R. Southard, J. Baker, D. Munk,	
K. Hembree, K. Klonsky, R. DeMoura, G. Miyao, and J.Solorio	59
Experiences With Conservation Tillage and No Till in Austria A. Klik, B. Frauenfeld, and K. Hollaus	62
Sod-Based Systems	
Soil Organic Carbon Content of a Typic Argiudoll in Uruguay under Forage Crops and Pastures for Direct Grazing: Effect of Tillage Intensity and Rotation System J. A. Terra and F. García Préchac	7(
Integrating No-Till into Livestock Pasture F. García Préchac, O. Ernst, G. Siri, and J.A. Terra	74
Influence of Grazing Time and Herbicide Kill Time on Grain Yield of Sorghum in a No-Till System M. da Costa, D. Rubio, and O. Ernst	81
Perennial Forage in Rotation with Row Crops in the Southeast D.L. Wright, J.J. Marois, and P. J. Wiatrak	87

Comparison of Planting Equipment for Sod-Seeded Ryegrass D.J. Lang, R. Elmore, A. Tokitkla, and M. Salem	93
Establishment of Native Grasses into Fescue Sod L.M. Tharel, J.L. Douglas, and J.R. King	96
A Multi-State Project to Sustain Peanut and Cotton Yields by Incorporating Cattle in a Sod Based Rotation J. J. Marois, D.L. Wright, J.A. Baldwin, and D.L. Hartzog	101
Nutrient Management	
Long term Application of Poultry Broiler Litter to Cotton and Corn C. C. Mitchell and W. C. Birdsong	110
Lint Yield Advantages of No-till and Poultry Litter-Based Cotton/Rye Cropping System in a Southern Piedmont Soi A Five-year Data Set D. M. Endale, H. H. Schomberg, M. L. Cabrera, J. L. Steiner, D. E. Radcliffe, W. K. Vencill, and L. Lohr	
Strip-Till Cotton Yield in Six Double Cropping Systems R.N. Gallaher	123
Making "Different" Liming and Fertilization Practices on Conservation Tillage "Conventional" Glen Harris	127
Influence of Nitrogen and Tillage on Cotton P. J. Wiatrak, D. L. Wright, J. Pudelko, and W. Koziara	131
Nitrogen Management for Cotton Grown in a High-Residue Cover Crop Conservation Tillage System M.S. Reiter, D.W. Reeves, C.H. Burmester	136
Conservation Tillage and Poultry Litter Effects on Cotton and Corn Yields: Five Year Results E. Z. Nyakatawa and K.C. Reddy	142
Yield and Nutrient Uptake of Tropical Forages Receiving Poultry Litter R. Saunders, J. Johnson, S. Edwards, and J. Douglas	148
Pest Management	
Effects of Winter and Fall Cover Crops on Plant-Parasitic Nematode Population Development KH. Wang, R. McSorley, R. N. Gallaher, and R. S. Tubbs	152
Crop Rotation Effects on Nematode Populations S.S. Hague and C. Overstreet	156
Impact of Strip-till planting using Various Cover Crops on Insect Pests and Diseases of Peanuts H.L. Campbell, J.R. Weeks, A.K. Hagan, and B. Gamble	161
Annoying Trends in Strip-Tillage Weed Control in Peanut: What are Our Options? W. C. Johnson, III, E. P. Prostko, and T. L. Grey	165
Response of Dryland Conservation Tillage Peanuts to Fungicides S.C. Phatak, A.K. Culbreath, W.D. Branch, J. R. Dozier, and A.G. Bateman	171
Glyphosate Impact On Irrigated and Dryland Roundup Ready TM Cotton C. Dale Monks, G. Wehtje, W.H. Faircloth, C. Burmester, D. Harkins,	
D.P. Delaney, L. Curtis, M.G. Patterson, R. Goodman, M. Woods, and L. Hawf	176
Impact of Cotton Rotation and Tillage Intensity at Varying Phosphorus Fertility on Certain Sorghum Insects and Grain Yield J.E. Matocha, C.F. Chilcutt, M.P. Richardson, and S.G. Vacek	180
An Evaluation of Clearfield Rice Production on a Stale Seedbed P.K. Bollich, M.E. Salassi, E.P. Webster, R.P. Regan, G.R. Romero, and D.M. Walker	

Soil Quality

Interpreting the Soil Conditioning Index M.D. Hubbs, M.L.Norfleet, D.T. Lightle	. 192
Showing Farmers the Difference: Measuring Soil Quality in Conservation Tillage and Conventional Fields Using the NRCS Soil Quality Test Kit J.W. Gaskin, J. E. Dean, R.E. Byrd	. 197
Management Effects on Clay Dispersibility of a Rhodic Paleudult in the Tennessee Valley Region, Alabama J.N. Shaw, D.W. Reeves, C.C. Truman, P.A. Mitchell	. 201
Quantifying Residue Coverage Via Satellite Remote Sensing Platforms D.G. Sullivan, J.N.Shaw, P.L. Mask, E.A. Guertal, M.L. Norfleet	. 207
Using the CENTURY Model to Simulate C Dynamics in an Intensively Managed Alabama Ultisol Christina van Santen, J.N. Shaw, and D.W. Reeves	. 213
Land Use Biodiversity Index as a Soil Quality Indicator Herby Bloodworth and Terry Sobecki	. 219
Effects of Tillage Systems on Soil Microbial Community Structure under a Continuous Cotton Cropping System Y. Feng, A. C. Motta, C. H. Burmester, D. W. Reeves, E. van Santen, and J. A. Osborne	. 222
Microbial Responses to Wheel-Traffic in Conventional and No-Tillage Systems G.B. Runion, S.A. Prior, D.W. Reeves, H.H. Rogers, D.C. Reicosky, and D.C. White	. 227
Land Use Effects on Soil Quality Parameters for Identical Soil Taxa I.G. Fesha, J.N. Shaw, D.W. Reeves, C.W. Wood, Y. Feng, M.L. Norfleet, and E. van Santen	. 233
Promotion of Plant Growth of Maize by Plant Growth Promoting Bacteria in Different Temperatures and Soils D. Egamberdiyeva, D. Juraeva, L.Gafurova, and G.Höflich	. 239
Potassium Oxalate as a Nitrification Inhibitor and Its Effect on Microbial Populations and Activities in a Calcareous Uzbekistanian Soil under Cotton Cultivation M. Mamiev, D. Egamberdiyeva, D. Berdiev, and S. Poberejskaya	. 245
Effects of Cover Crop Residue Management on the Soil Surface Invertebrate Community M. J. Tremelling, R. McSorley, R. N. Gallaher, and R. S. Tubbs	. 250
Soil Microarthropods: Bioindicators of Conservation Management Practices S. L. Lachnicht, H. H. Schomberg, G. Tillman	. 255
Impact of Deep Ripping of Previous No-tillage Cropland on Runoff and Water Quality D. M. Endale, H. H. Schomberg, A. J. Franzluebbers, R. R. Sharp, and M. B. Jenkins	. 256
Impact of Deep Ripping of Previous No-Tillage Cropland on Surface Soil Properties Alan J. Franzluebbers, Harry H. Schomberg, Dinku M. Endale, Ronald R. Sharpe, and Michael B. Jenkins	. 261
Surface-Soil Properties in Response to Silage Intensity under No-Tillage Management in the Piedmont of North Card A.J. Franzluebbers, B. Grose, L.L. Hendrix, P.K. Wilkerson, and B.G. Brock	
No-Tillage Performance on a Piedmont Soil C.W. Raczkowski, G.B. Reddy, M.R. Reyes, G.A. Gayle, W. Busscher, P. Bauer, and B. Brock	. 273
Impact of Conservation Tillage on Soil Carbon in the 'Old Rotation' G. Siri Prieto, D.W. Reeves, J.N. Shaw, and C.C. Mitchell	. 277
Soil Carbon and Nitrogen as Influenced by Tillage and Poultry Litter in North Alabama M.A. Parker, E.Z. Nyakatawa, K.C. Reddy, and D. W. Reeves	. 283
Soil Management Effects on Interrill Erodibility of Two Alabama Soils C.C. Truman, D.W. Reeves, J.N. Shaw, and C. H. Burmester	. 288

Cover Crops and High Residue Systems

Influence of Cover Crops and Tillage on Barnyardgrass Control and Rice Yield D.L. Jordan and P.K. Bollich	. 296
Root Growth and Soil Strength in Conservation and Conventional Till Cotton W.J. Busscher and P.J. Bauer	. 300
Legume Cover Crop Development by NRCS and Auburn University Jorge A. Mosjidis and Charles M. Owsley	. 305
Partitioning of Dry Matter and Minerals in Sunn Hemp A.J. Marshall, R.N. Gallaher, K.H. Wang, and R. McSorley	. 310
Agronomic and Genetic Attributes of Velvetbean (<i>Mucuna</i> sp.): An Excellent Legume Cover Crop for use in Sustainable Agriculture L. J.A Capo-chichi, D.B. Weaver, and C.M. Morton	. 314
Conservation Management Practices in Mississippi Delta Agriculture: Implications for Crop Production and Environmental Quality M.A. Locke, R.M. Zablotowicz, R.W. Steinriede, and S.M. Dabney	. 320
High-Residue Conservation System for Corn and Cotton in Georgia R. D. Lee, D.W. Reeves, R. Pippin, and J. Walker	. 327
Development of Management Systems	
Tillage Techniques for Gardens and Small-scale Vegetable Production C. C. Mitchell and C.E. Elkins (retired)	. 332
Research in North Carolina with Reduced Tillage Systems for Peanut (1997-2001) D.L. Jordan, P.D. Johnson, A.S. Culpepper, J.S. Barnes, C.R. Bogle,	
G.C. Naderman, G.T. Roberson, J.E. Bailey, and R.L. Brandenburg	. 336
Soybean Varieties Response to Tillage Systems Normie W. Buehring, Robert R. Dobbs, and Mark P. Harrison	. 341
Sequence and Rotation Effects on Pest Incidence and Yield of Winter Wheat and Canola Double-Cropped with Pearl Millet and Soybean G.D. Buntin, B.M. Cunfer, D.V. Phillips, and J.R. Allison	. 342
Conservation Rotations for Cotton Production and Carbon Storage D. W. Reeves and D. P. Delaney	. 344
Effects of Conventional Tillage and No-Tillage on Cotton Gas Exchange in Standard and Ultra-Narrow Row System S.A. Prior, D.W. Reeves, D.P. Delaney, J.F. Terra	
Effect of Crop Rotation/Tillage Systems on Cotton Yield in the Tennessee Valley Area of Alabama, 1980-2001 C.H. Burmester, D.W. Reeves, and A.C.V. Motta	. 354
Comparison of Tillage Type and Frequency for Cotton on Piedmont Soil Harry H. Schomberg, George W. Langdale, Alan J. Franzluebbers, and Marshall Lam	. 358
Enhancing Sustainability in Cotton with Reduced Chemical Inputs, Cover Crops, and Conservation Tillage G. Tillman, H. Schomberg, S. Phatak, P. Timper, and D. Olson	. 366
Cover Crops and Tillage Combinations for Wide and Ultra Narrow Row Cotton D.P. Delaney, D.W. Reeves, C.D. Monks, M.G. Patterson, G.L. Mullins, and B.E. Gamble	. 369
Forage Yield of Ten No-Tillage Triple Crop Systems in Florida R.S. Tubbs, R.N. Gallaher, K-H. Wang, and R. McSorley	. 371
Tillage, Weed Control Methods and Row Spacing Affect Soil Properties and Yield of Grain Sorghum and Soybean U.R. Bishnoi and D. Mays	. 376

Optimizing Conservation Tillage Production: Soil Specific Effects of Management Practices on Cotton, Soybean, and Wheat Philip J. Bauer, James R. Frederick, and Warren J. Busscher	382
Effects of Taller Wheat Residue After Stripper Header Harvest on Wind Run, Irradiant Energy Interception, and Evaporation R.L Baumhardt, R.C. Schwartz, and R.W. Todd	
The Potential of No-till Rice Production in Arkansas M.M. Anders, K.A.K. Moldenhauer, J. Gibbons, J. Grantham, J. Holzhauer, T.E. Windham, and R.W.	McNew 392
Influence of Irrigation and Rye Cover Crop on Corn Yield Performance and Soil Properties H.J. Mascagni, Jr., L.A. Gaston, and B. Guillory	397
Cover Crops and Conservation Tillage in Sustainable Vegetable Production S.C. Phatak, J.R. Dozier, A.G. Bateman, K.E. Brunson, and N.L. Martini	401
Using Soil Moisture To Determine When to Subsoil R.L. Raper and A.K. Sharma	404
APPENDIX A. Previous Conferences	411
APPENDIX B. Award Recipients	413
Author Index	414