PLANT MATERIALS
SMALL FARM DEMONSTRATION
THE KENNEDY FARM

FY 97-2000

TATTNALL COUNTY, GEORGIA

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INTRODUCTION

Reinvention of the Plant Materials program to meet today and tomorrow resource problem is necessary to be more customer responsive and customer focused. The challenge of providing timely and effective state-of-the-art plant science technology to the field office is the primary responsibility of the plant materials program. The program is responsible for developing improved plants and to transfer plant technology information. Plant Materials Centers and specialists provide a vital link in meeting NRCS' and Conservation Districts expanding role in solving natural resource issues.

The Department and the Agency is now struggling with the small and limited resource farmer issues, and the best method to deliver the technical, financial and plant technology assistance that is needed for their survival and sustainability. The NRCS Plant Materials Program stands ready to join forces with other partners to provide the plant technology needed to address natural resource problems associated with small and limited resource farmers.

The USDA-NRCS Plant Materials Program exists to meet customer needs for cost effective solutions that address natural resource problems. The Jimmy Carter Materials Center is conducting high priority studies and developing the plant technology to expand the potential and use of native perennial warm season forage grasses, as a low-input, environmentally sustainable grazing system.

Field demonstrations, plantings, and trials are conducted by plant materials specialists to promote a new or improved plant release and the technology required to establish and manage the new release. Plant material field demonstrations can positively impact the small farmers/limited resource program by providing new plant technology and improved plant varieties that will ultimately improve production, control soil erosion, and the quality of life. The plant materials centers can provide the

seed and plants and new information to demonstrate the use of plants as a valuable tool for establishing Best Management Practices (BMP's), such as, vegetative buffers, grass waterways, field border, gully and streambank stabilization, conservation tillage, filterstrips, native warm season grasses for forage improvement and provide a sustainable farm program.

BACKGROUND

There are several definitions of small farms used by various agencies. While most will admit that the survival of small farms is a major issue, the disagreement on definitions clouds the scope of the problem. For example, the presence or absence of outside employment and income earned by the operator have been used in viewing many farms as "hobby" farms rather than serious business enterprise. The definition which seems appropriate for this study and also seems to embody the cooperative extension system is as follows: "Small farm means any farm producing family net income from all sources (farm and non-farm) below the median income of the state; operated by a family dependent on farming for a significant, but necessarily a majority of its income; and on which family members provide most of the labor and management." (U.S.D.A./Extension Service)

There are approximately 2.2 million are classified as small farms. These small farms generate about 15 percent of net income received from farming. Over 100,000 small farms with less than 20,000 gross income make up about 59 percent of all farms but, only own 16 percent of agricultural land. Small farms tend to be centralized in the south where more than 75 percent of farms have a gross income less than $20,000.

The Georgia farm population has experienced tremendous changes since the 1930's. In 1930 there were 2.9 million people living in the state and the farm population was 1.4 million, representing 48 percent of the total. By 1993 the farm population decreased to 80,083 and represented only 1.2 percent of Georgia's 6.4 million people. The farm

population has declined to such an extent that every farmer, farm spouse and child could fit inside the Atlanta-Fulton County Stadium and watch a Braves game.

A decade ago, some people felt that America's small farms were obsolete, in the sense that their owner's failure to enlarge them made targets for those seeking agricultural land. Many farmers sold their farms, and took up other vocations. It was a period of transition but the movement continues even now and will into the future. Today, small farmers many of whom and are part-time operators, are perhaps the greatest resource reserve of the country.

AFRICAN AMERICAN FARMERS

As a means of employment and as a way of life, agriculture is fast becoming a cultural memory. In 1945 almost 20 percent of the farmers were black. Today, the number of black owned farms is less than three percent. The exit of blacks out of farming is not new to Georgia. The trend has existed nationwide, and currently there are less than 20,000 black farmers left in America.

The characteristics of black operators described in rural Economic Research Service studies have remained essentially the same. Black operators represented less than 1 percent of the 1.9 million American farmers in 1992, down from 14 percent in 1920; however, they represented 43 percent of all minority farmers. A composition sketch of the 33,000 black farmers in 1982 revealed that more than 90 percent were in the South.

In the South, black farmers were (and still remain) concentrated in an area which corresponds to the Black Belt beginning in Virginia and extending down through the Carolina's, Georgia and Florida to Texas. Many have disappeared from the Census of Agriculture, either because they are no longer farming their small acreage or do not bring in enough farm income to qualify as farmers by current definitions.

The small black farmer has rarely been included in special projects, targeted areas for special funding, priority and special watershed areas. These special programs usually provide special funds for field trials educational programs and demonstrations that exhibit new farm technology. However, they are rarely conducted on small minority owned farms. Small farms have unique ecosystems. The ecosystems are very rare because they have been unchanged for over 50 years. They contain small fields, hedgerows with native and natural vegetation that protect lakes and streams, provide habitat for wildlife, rabbits, squirrels, and even coveys of quail can be abundantly found in these systems. Small farmers usually apply less fertilizers and pesticides on their crops, therefore, water quality is good and the ecosystems are much healthier. Therefore, the streams leaving these farms are cleaner than those leaving watersheds

that includes larger farms. Small farmers are special, and sadly the number of farms is declining. Back in the mid-1950's, there were over 4 million farms in the United States. Today, some 45 years later, there are about 1.5 million farms.

IMPACT AND OPPORTUNITY

Livestock production is the most important value-added industry in the United States. To sustain this industry, forages are produced on more than half of the land area of the country. This is also a major agricultural enterprise in the southeastern part of the nation. Current livestock production systems in this region rely heavily on forages and grain whose production requires high inputs of synthetic fertilizers. Herbicides and insecticide with known adverse effects on the ecosystem.

Warm-season perennial indigenous grasses such as switchgrass (Panicum virgatum L.) indiangrass (Sorghastrum Nutans, L.) and eastern gammagrass (Tripsacum dactyloids, L.), have a wide range of ecological adaptation. These native grasses have the potential of producing high quality forage using less commercial N fertilizer in a low-input, environmentally sustainable system.

This demonstration is expected to show the potential of warm-season native grasses as an alternative source of forage in the southeast for small farmers. It can also be expected that the use of cool-season legumes to interseed warm-season grasses will not only increase total forage biomass production but also constitutes an efficient, inexpensive, non-polluting source of N for the succeeding grasses. This approach will thus reduce N required by succeeding crop.

RATIONALE

Current economic and market conditions call for research on new ways and/or opportunities to increase efficiency and profit of farm activities while preserving or improving the integrity of the biosphere's vital resources: soil, air and water. Indeed, during the past decade, increasing concerns for economic viability and ecological sustainability of agriculture have produced and accelerated search for alternative farming.

This small farm demonstration will enable these small farmers with site specific information on the management of native grasses for production of good quality pasture and hay in a sustainable, low-input system. In addition, this demonstration will lay the foundation for continuing and strengthening relationships with small farmers as the need arises for technical assistance.

Objectives:

1. Demonstrate the use of adapted grasses and legumes to improve forage production and quality, and to extend the grazing period.

2. Demonstrate the potential of warm season native grasses, such as, switchgrass (Panicum virgatum, L.) indiangrass (Sorghustram nutans, L.) and eastern gamagrass (Tripsacum dactyloids) to improve forage programs for small farmers.

3. Conduct training, and educational programs, seminars, tours and technology transfer to small farmers on plant materials for forage improvement, pasture and hayland management,proper grazing utilization and rotational grazing.

4. Demonstrate the use of alternative watering systems for livestock.

5. Demonstrate the use of vegetation buffers for water quality improvement.

6. Reduce tillage operations by converting from annual grasses to perennial warm-season grasses.

7. Strengthen relationships though improved communication and coordination.

8. Encourage participation in USDA programs.

9. Demonstrate good animal health and nutrition to small farmersn by inoculating to prevent diseases, worming the animals as needed, use implants, and provide supplemental feed requirements based on the (GLA) grazing land nutritional balancer.

Kennedy-Farm Characteristics

Name of Owners: Avg. Age: 40	Handy Kennedy [Father (retired)] Mike Kennedy Charles Kennedy Benjamin Kennedy
Major Enterprise:	Beef Cattle (130 brood cows) Catfish Production Goats Fish ponds Horses
Pasture and Hayland	:pensacola bahia grass coastal bermuda small grain (grazed) millet
Crops	:sugar cane (syrup) sweet potatoes vegetable crops pecans pine trees (pulp & saw timber) soybeans (small acreage) corn (cattle feed)

The Kennedy Farm is located at Cobbtown in the northwestern corner of Tattnall County. The tract is bordered by Candler County and is within a 1/4 of a mile from Toombs and Emanuel Counties. The area is 15 miles from Metter, 22 miles from Reidsville which is the countyseat and 9 miles from Lyons. The business district of the area is at Reidsville, Vidalia, Lyons and Metter. Collins and Cobbtown also provide materials and supplies needed by farmers in the area. This is a large farming community where onions, tobacco, cotton and beef cattle are the major enterprises. Swine, goats, peanuts, soybeans, corn and small grain are also important enterprises in the area.

The Kennedy Farm is adjacent to the Ohoopee River. The Ohoopee River Watershed drains land in Candler, Tattnall, Emanual, Montgomery, Treulen, Toombs and Johnson counties. The farm is located in upland of the Coastal Plains. About 1/2 of the farm consist productive soils such as Tifton, Fuquay, Dothan, Cowarts, and Carnegie with wetland drains running thur such as Rutledge and Osier. The other 1/2 of the farm consist of sandridge soils low in productivity such as Kershaw and Kurebs.

The Ohoopee River influence the soils in the area. The soil along this river tends to be very sandy and low in productivity. Most of the adjacent the river is in woodland but there are many cropland fields and pasture near the river.

SMALL MINORITY FARM DEMONSTRATION

FY-97 PROGRAM EMPHASIS

	Acres	Planting Rates	Amount Needed	Cost	Total Cost
1. Eastern Gamagrass	30 ACS	14#	420	$7.00	$2,940
2. Alamo Switchgrass	10 ACS	8#	80	6.00	480
3. Indiangrass	10 ACS	6#	60	6.00	360
4. Amclo Arrowleaf Clover	12 ACS	10# Fall 97	120	2.00	240
5. GA-5 Tall Fescue	10 ACS	30#	300	1.50	450
6. Cherokee Clover	12 ACS	10#	120	2.00	240
7. Lime & Fertilizer	60 ACS 10-10-10	500 (F) 1(T)	30,000 15 Tons 6 Tons	180/T 180	2,700 180
8. Labor Land Preparation Fertilization Planting Seed	60 ACS	25/AC.		1,500	1,500
9. Fence (Equipment) Electric				2,000	2,000
10. Alternative Watering Systems (Rotational Grazing)				2,000	2,000
11. Stream Crossing				500	500

TOTAL (Labor, Fertilizer, Lime, Seed & other materials) **$13,140**

FY-97 BUDGET

		FARMER (In-Kind)	NRCS GA	FVSU	PMC	Pennington
1. Land, Preparation, Fertilization, Irrigation, Planting, Facing, Chemical, etc.	60As	$6,000				
2. Lime	6T 180					
3. Fertilizer (10-10-10)	18T		2,700			
4. Seed: Eastern Gamagrass	420#		1,470	1470		
Alamo switchgrass	80#		240	240		
Indiangrass (Americus)	60#				360	
GA 5 Tall Fescue	300					450
Cherokee Clover	12ACS	240				
Amclo arrowleaf clover (Fall 97)	12 ACS				240	
Amclo arrowleaf clover (Fall 96)	12 ACS				240	
5. Herbicides (Native Grasses)	50 ACS		250	250		
6. Technical Assistance			3,500	3,500		
7. Brochures (Field Day)			250			
8. Summary Report (Brochure)			1,500	1,500		
9. Fencing Equipment			2,000			
10. Alternative Watering System			2,000			
11. Stream Crossing			500			
12. Video Program				7,000		
Sub Totals		**6,240**	**14,410**	**13,960**	**840**	**450**
Project Total		**$35,900**				

FARMER - Kennedy Farm
NRCS - Natural Resources Conservation Service
FVSU - Fort Valley State University Cooperative Extension Program
PMC - Jimmy Carter Plant Materials Center
PENN - Pennington Seed Company

POTENTIAL PARTNERS

USDA-Natural Resources Conservation Service

Coastal Georgia RC&D

Fort Valley State University Cooperative Extension Program

Pennington Seed Company

Georgia Soil & Water Conservation Commission

Ogeechee Soil & Water Conservation District

Tattnall County Small Farmers

Federation of Southern Cooperative

University of Georgia Cooperative Extension Program

**Proposal Prepared by Donald Surrency, Plant Materials Specialist for Georgia, South Carolina, and Alabama.

ACCOMPLISHMENTS

Pasture Planting	Acres	Date
Grasses and Legumes		October 1996
Arrowleaf clover	(30 acres)	
Annual Rye	(30 acres)	
Georgia 5 tall Fesue	(30 acres)	
Eastern gamagrass	(15 acres)	May 1997
Arrowleaf clover	(60 acres)	November 1997
Cherokee clover	(60 acres)	
Georgia 5 tall fesue	(20 acres)	
Planting	(2 acres)	

Training

Grass/Legumes no-till planting for forages Reidsville High School (approx. 30 people attended)	January 1997
Native grasses for forage Field trip to Jimmy Carter PMC (Kennedy's and DC)	March 1997
Field Day (Demonstration) Kennedy Farm Cobbtown, GA	November 1997

Conservation Practices completed 1997

Pasture Planting
Agro-forestry/Alley Cropping
No-Till Pasture Interseeding

Activities Planned For FY-97 & 98

Action Item	Purpose	When	Who
1. Farmers visit PMC (Kennedy Bros.)	*Tour PMC/Native Grass Projects	March 26, 1997	DC, PMS, AC, PMC, Mgr.
2. Training Session on Native & Non-Native Grasses/Legumes	Provide information Establishment of native grass and cool season legumes	March 4, 1997	DC, PMS, FVSU-Ext, GLCI, VO-AG
3. Plant Native Grasses -DEMO-/Trial	Field demonstration will serve as training site for other small farmers in the area. Plant the following: Switchgrass, Eastern gamagrass, Indian grass. Kennedy Farm.	April 15, 1997	DC, PMS, FVSU-EXT. UGA-EXT GLCI Pennington Seed
4. Field Day	Small farmers will visit Kennedy Farm to observe native grass plantings. Specialists will discuss the importance of using native grasses, establishment techniques, management, production, growth curves, rotational grazing, alternative watering facilities, stream crossing, fencing riparian areas, fertility requirements, importance of using cool-season legumes with warm season grases.		DC, AC, PMS, GLCI, FVSU-EXT, UGA-EXT, Pennington Seed
5. Cool Season Legume & Grasses Planting	Plant (no-till) GA-5 Tall Fescue in Bermuda grass pastures. Plant cool-season legumes to provide winter grazing and to provide supplemental nitrogen.	October 1997	DC, AC PMS, GLCI FVSU-EXT, UGA-EXT, Pennington Seed

Activities For 1998

Activities Planned	Who
Training Session:	FVSU Extention
Calibration of Equipment	PMC assist. Mgr.
Commercial fertilizer vs. Chicken Litter	FVSU Extension
Managing Native Grasses	PM Spec.
Rotational grassing	FVSU Ext.
Aquaculture (Growing catfish for Market)	FVSU Ext.
Fencing	Regional Grazing Specialist, State Specialist

Pasture Planting (Spring 1998)	Amount
Alamo switchgrass/indiangrass/little bluestem	25 acres
Eastern gamagrass	25 acres
Perennial Peanut	2 acres
Browsing Area for Goats	5 acres
Alamo switchgrass	12 acres
Tifton 9 Bahiagrass	5 acres

Pasture Planting (Fall 1998)

Georgia 5 tall fesue/cherokee clover no-tilled into eastern gamagrass
Eastern gamagrass (fall planting)

Water Supply

Alternative water sources (Rotational Grazing)

GIS

Remote Sensing Application for Small Farm Planning.	Alabama A&M Univ. Dr. Tammy

Farm Field Day/Tour
May 1998
October 1998

Partnership

Set up partnerships/cooperative agreements with tractor and implement companies, seed, fertilizer and chemical companies to provide tractor, equipment, special promotion on seed, fertilizer and farm chemicals for exhibit and demonstration purposes

Contacts for 1998

Contacts will be made with the following:

John Deere
Ford
KMC
Tye
Pentington Seed Company
Georgia Cattlemen's Association
State Soil & Water Conservation Commission
George Farm Bureau
Monsam to
Con Agra
Cargill
CASE

Practices for 1998

Practices Planned for 1998

Pasture Planting
Hayland and Pasture Management
Rotational Grazing
Buffer Strips
Field Borders
Fencing
No-till Interseeding
Irrigation Water Management
Conservation Tillage
Critical area stabilization
Wildlife Habitat Management
Stream crossing
Heavy use area

Activities for 1999

Activities Planned

Training Session:	Economics of forages	NRCS
	Applying for USDA Programs	NRCS

Determine economics of using warm season grasses
Managing practice applied.

Pasture Planting

Perennial peanut	10 acres

Technology Transfer

Tours
Spring 1999
Fall 1999

Brochure - Plant Materials Demo Benefits Small Farmers

Video
News Article
Technical Papers
Economic of Conservation Practices for Small Farmers

Planned Activities for 1999

Activities

Small Farm Expo - Fall 1999
Interseeding cool season legumes and grasses
Irrigation Demo
Planting Perennial Peanuts for Grazing
Planning Wildlife Plots

Technology

Tours
Brochures and Papers on Small Farm Project
Video
News articles
Magazine art

Practices Planned for 1999

Pasture Planting	Acres			
	97	98	99	2000
1. Establish Eastern gamagrass for Forage and				
2. Interseed Cherokee Clover, Arrowleaf Clover and Georiga 5 Tall fescue to provide cool-season grazing				
3. Rotational Grazing System				
4. Establish Perennial Peanut for warm-season grazing				
5. Intall a Solar Water System for Rotational Grazing System				
6. Install a Ram Water System for Rotational Grazing System				
7. Establish a Eastern gamagrass variety Trial - Pete & Iuka Varieties				
8. Establish Tifton 9 Bahiagrass for grazing & hay production				

Catfish Production

1. Renovate catfish ponds for commercial production

Wildlife Upland Habitat

1. Establish wildlife plantings for dove deer and turkey in designated fields and field borders

- native grass buffers

- Amquail lespedeza
- dove proso millet
- browntop millet
- Big O crabapple
- Aztec maximillian sunflower

* Kobe lespedeza
* browntop millet
* partridge pea
* velvet beans
* eqyptian wheat
* GA wildlife delight
* buckwheat
* ABC deer, turkey mix
* American jointvetch

Rotational Grazing

Activities for 2000

Activities Planned

Small Farm Tour
May 2000
October 2000

Technology Transfer

Tours
Brochures
Video
News articles
Magazine articles