

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Climate Change

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	17%	
132	Weather and Climate	0%	0%	17%	
133	Pollution Prevention and Mitigation	0%	0%	10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%	0%	10%	
206	Basic Plant Biology	0%	0%	7%	
403	Waste Disposal, Recycling, and Reuse	0%	0%	7%	
511	New and Improved Non-Food Products and Processes	0%	0%	32%	
	Total	0%	0%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	3114	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Cross-cutting research in this area is covered under the Sustainable energy planned program.

Increasing greenhouse gases in the atmosphere are predicted to increase average global temperatures and alter regional precipitation. Drought is predicted to increase with a warming global climate. Forests in the southeastern United States are expected to be particularly vulnerable to declines in precipitation.

2. Brief description of the target audience

Target audiences include the general public, agricultural and forestry producers, business owners, and policy-makers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA}	{NO DATA}	{NO DATA}	{NO DATA}
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Plan:

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	8	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Carbon stock has been evaluated above and below ground in selected treatment combinations in conjunction with Oak Ridge National Lab, Argonne National lab and the Pacific Northwest Lab. Extensive sampling of above ground biomass and below ground root biomass has been done. The data indicate considerable accumulation of carbon in the system. Soil carbon percent in the top 5 cm has increased by up to 0.9% when the initial levels in 2004 are compared to levels in 2008. (Tyler)

Year	Target	Actual
2010	{No Data Entered}	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Biorefinery lignin utilization (Harper)

Outcome #1

1. Outcome Measures

Biorefinery lignin utilization (Harper)

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

We need to utilize biorefinery lignin to make high value products to improve the economics and environmental impact of energy production.

What has been done

UT has been producing lignin from locally grown feedstocks. This lignin is being processed in a manner to tailor it to carbon fiber production.

Results

Utilization of biorefinery lignin as feedstocks for carbon fiber production can make biorefining economically feasible and contribute an additional \$4 billion annually to rural economies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
132	Weather and Climate
403	Waste Disposal, Recycling, and Reuse
511	New and Improved Non-Food Products and Processes

V(H). Planned Program (External Factors)

External factors which affected outcomes

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}