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U.S. Department of Agriculture
National Institute of Food & Agriculture

SunGrant INITIATIVE
South Central Region

Project Title: ***Sustainable Feedstock Production for Bioenergy***

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Plant & Soil Sciences

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$39,978
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01/29/2013
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07/31/2015

Other Sources of Funding:
Oklahoma State University will meet the matching requirement.

Rationale:
The primary goal of this project is to utilize low productivity soils to grow feedstocks for bioenergy production. To be sustainable, these marginal or degraded farm lands would have biochar product returned to the field to increase, 1) water holding capacity, 2) organic matter, 3) infiltration rates, and 4) nutrient content. The return of biochar to low productivity soils used for feedstock production would create a sustainable system to produce bioenergy. The rehabilitation of marginal or abandoned farm land for bioenergy production would leave prime farmland for food and feed production. Thus, the tradeoff of food for fuel would be avoided.

Expected Project Outcomes

1) Methods and procedures to bind biochar with an inexpensive material to increase biochar density for easier handling.
2) The ability to use existing farm equipment to handle and land apply aggregated biochar.
3) Development of soil fertility BMPs for biochar nutrient recycling on low-productivity soils in the South Central region for the production of perennial grass feedstocks for bioenergy production.
4) Improvements of soil tilth and water holding capacity for low productivity soils through applications of biochar.
5) A comprehensive Extension program for the dissemination of BMPs for the production of bioenergy feedstocks on low productivity soils in the South Central region.