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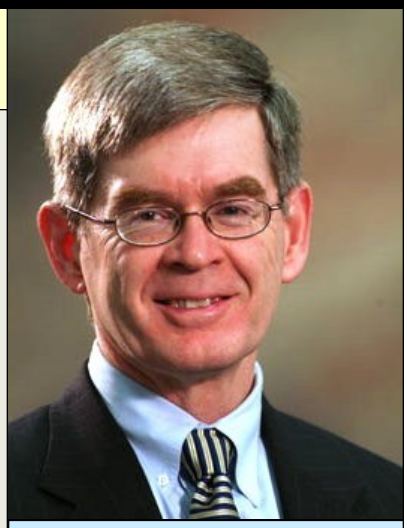
U.S. Department of Transportation

SunGrant INITIATIVE South Central Region

Project Title: ***Evaluation of the Energy and Cost Advantages of Modules for Packaging and Transporting Biomass Energy Crops***

Dr. Stephen Searcy



Project Goal

This project evaluated the potential of a biomass logistics system based upon large packages of chopped biomass.

Project Outcomes

- Biomass modules would be a viable, and likely lowest cost, means for collecting, storing and transporting biomass feedstock to a biorefinery.
- This project demonstrated the ability to form modules of over to 7 Mg of dry matter, load that module in two minutes or less and store it up to 12 months without significant change in shape or dimension.
- Comparison of the logistics costs between the biomass module system silage and baling systems using IBSAL simulation software indicated the module system is the lowest cost alternative. These results provided a strong basis for continued development of this system.
- The laboratory and field data collected during these efforts have provided a set of machine performance parameters that must be achieved for this system to be successful. The parameters include the ability to compress the biomass into a package that will maintain an anaerobic environment for an extended period and will provide the residual compressive forces required to achieve the target density.

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