

BioEconomy *Update*

Winter 2005

<http://www.valuechains.org/> • <http://www.biowa.us/>

Volume 3.1

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Biobased Projects Receive Grants

The BioEconomy Working Group (BWG), a part of the Value Chains Partnerships for Sustainable Agriculture project, recently awarded funds for six new research projects in Iowa. These research projects focus on supporting new and existing value chains for more sustainable agriculture. A value chain is described as a string of companies or collaborating players who work together to satisfy market demands for specific products or services.

“This year we awarded grants to a wide range of projects. The researchers in these projects are all determined to find new and innovative ways to use biorenewable resources in Iowa which will further our bioeconomy,” Jill Euken, Industrial Liaison for the BioEconomy Initiative at ISU, said.

Flax, a widely cultivated plant with pale blue flowers, seeds that yield linseed oil, and slender stems that can be used for textile fiber, is the center of two of the research projects. Despite the growing



Flax, shown here, is the center of two projects that were recently awarded BWG grants.

need and interest for flax in Iowa, it is not currently widely grown in the state.

The first grant was awarded to a group that will investigate the oil and fiber characteristics of several varieties of flax grown in several different environments within Iowa. The results of this project will provide an evaluation of the upper Midwestern growing conditions for northern-adapted flax varieties identified as having high omega-3 fatty acid content or oil-fiber dual use when grown in Canada.

The second group will provide Iowa flax growers with information and experience to improve their ability to negotiate available contracts and pursue additional marketing avenues for oilseed and food flax. Additionally, the researchers will investigate marketing opportunities for flax straw and fiber co-products.

Another crop being researched through BWG funding is switchgrass. Prairie Land Bio-Products in Centerville will address the need for bringing biobased material to the plastics industry as a filler material. Using switchgrass as an additive will presumably reduce the cost of the end product and increase the percentage of recycled material used. In addition to producing a data sheet used by plastic molders that use switchgrass in their applications, the results of the project will demonstrate the process, market, and feasibility of blending biomass with plastic resins.

Naturally Iowa, LLC, a consortium of dairy farmers and producers who produce a line of “natural” and/or “organic” products, is working with ISU to research yogurt quality when packaged in PLA versus PET containers. Through their grant funding, the group will

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Anex Wins Over \$3 Million in Grants

Robert Anex, associate professor of agricultural and biosystems engineering at Iowa State University, was recently awarded two grants in 2004 that collectively totaled more than three million dollars.

The first grant, awarded by the USDA, is supporting research that will determine if corn stover may one day be as valuable as the kernels themselves. The goal is to determine if corn stover can be a primary feedstock for the bioeconomy. Researchers are working toward that goal by studying corn breeding and physiology, harvest and storage technologies, and systems evaluation and integration.

The National Science Foundation's Biocomplexity in the Environmental Program awarded \$1.85 million to fund Anex's second project. The objective of

this project is to assess the potential ecological, economic, and social impacts of a large-scale transition to the use of biomass-derived feedstock for the production of energy, fuels, and products. The researchers hope to improve understanding of the interactions between the economic, social, biological, and environmental components of the emerging bioeconomy.

Researchers from various centers around the nation are collaborating with Anex to complete these projects. These centers include the World Resources Institute, Pennsylvania State University, Dartmouth College, University of Wisconsin-Madison, the USDA Dairy Forage Research Center, and the USDA Corn Insect and Crop Genetics Research Unit. Industry partners involved in the first grant are John Deere and Genencor International.

BIOWA Presents to Congressional Fellow

Matt Carr, a Congressional Fellow on the United State Senate Committee on Agriculture, Nutrition, and Forestry, recently visited Iowa to learn more about the bioeconomy from key leaders. He was in Iowa to collect information and gather ideas for the Energy Title of the next United States Farm Bill.

Carr began his visit to Iowa with a stop in Cedar Rapids at Genencor, International. There he met with Georg Anderl, general manager of the Cedar Rapids facility and chair of the BIOWA board. After arriving in Ames, Carr met with Robert Brown, director of the Office of Biorenewables Programs. Brown presented information about how the BioEconomy Initiative at Iowa State University (ISU) is working to develop the bioeconomy with a graduate program and research platforms.

Several members from BIOWA, including Jeff Stroburg, CEO of West Central Cooperative and treasurer of the BIOWA board of directors, had the opportunity



Matt Carr (right) listens while Jeff Stroburg and others discuss ideas to further the bioeconomy in the United States.

to speak with Carr as well. These members presented suggestions for federal initiatives designed to spur the development of biorenewables in the United States.

Carr also discussed the bioeconomy with Lou Honary, director of Ag-Based Industrial Lubricants; Stanley Johnson, Vice Provost for ISU Extension; Floyd Barwig, director of the Iowa Energy Center; and Norm Olson, project manager of the Biomass Energy Conversion Center.

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A Closer Look: Eco Lips

It all started with a gift from his girlfriend ten years ago. The creative, health-oriented woman gave her boyfriend, Steve Shriver, an organic lip balm that she made in her kitchen. The two married and began manufacturing the lip balm in their Cedar Rapids kitchen. “When we began, we had a small distribution in Iowa City and started a private label body care program,” Shriver said. Today, two years after selling the private label Raining Rose, Shriver is the President and CEO of Eco Lips, a company specializing in organic lip balm. Raining Rose, also based in Cedar Rapids, continues to manufacture natural body care products.

Eco Lips organic lip balm is available in two flavors (mint and berry) and a Sport SPF 30 (unflavored) in several different packaging options to integrate easily into any retail setting. “We use only the purest ingredients — no petroleum, GMO ingredients, animal products, or harsh chemicals. This is the only way to moisturize and protect the lips,” Shriver said. The lip balm is produced with organic soy oil, organic jojoba oil, and organic beeswax. The company buys the soy oil from three sources; the majority of it coming from Iowa suppliers.

Eco Lips products have been popular in Canada, Japan, Australia, and the United Kingdom, but are beginning to become more popular in the United States thanks to a surprise appearance on the *The Late Show with David Letterman*. The Hello Deli, a convenience store near the show, had an Eco Lips display on the counter and during one of the segments of the show, Letterman asked questions about Eco Lips and then proceeded to spontaneously award an

Eco Lips to the contestant participating in the segment. Since that unexpected promotion, sales in the United States have increased. “We have been successful because we were able to recognize a niche market for organic lip balm, produce the product, and offer it at a competitive price,” Shriver said.

Another way that Shriver and his seven employees at Eco Lips are spreading the word about their products is through the Federal Biobased Products Preferred Procurement

Program (FB4P).

The lip balms were recently submitted to the FB4P for biobased testing and evaluation at Iowa State University (ISU). The program, defined in the Farm

Security and Rural Investment Act of 2002 (FSRIA), will assist federal agencies in purchasing biobased products that meet standards established by the FSRIA.

“The federal government represents the single largest consumer of products and services in the world, supporting a wide variety of activities and using products from nearly every sector of the manufacturing market,” said ISU Center for Industrial Research and Service Industrial Specialist Steven Devlin. “Currently, we have several thousand troops and personnel deployed around the world, often in harsh sun and wind intensive environments. Providing lip balm with SPF protection is just one way our government is supporting those federal employees.”

Eco Lips products can be purchased in most natural foods stores, including Wild Oats Markets. In Iowa, the products are also available in Handi-Mart stores and Hy-Vee Food Stores. For more information, including ordering information, visit their website at: <http://www.ecolips.com>.



Project Supporters

The BioEconomy Working Group is a working group of the Value Chain Partnerships for Sustainable Agriculture (VCPISA) project funded by the W. K. Kellogg Foundation at Iowa State University. Financial support comes from five key partners: Leopold Center, Iowa Energy Center, Cargill-Dow, BLOWA, and the US Department of Energy.

BWG Awards Six Grants

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determine if the use of PLA containers with the product "Spoonless Yogurt Live" yields equal or better qualities in terms of flavor, nutritional value, and food safety.

The fifth grant was awarded to Thomas Schechinger of Iron Horse Farms. Schechinger will research whole plant characteristics of corn varieties and develop a white paper to stimulate a new way of thinking about the corn crop. He will also evaluate and share the potential win-win advantages and disadvantages to various links in the value chain, and will include an example, which highlights economic, social, and environmental benefits of plant characteristics.

The final group that was awarded a BWG grant will identify potential collection sites along the Iowa Northern Railway. The identified sites will serve as collection and storage sites for crop residuals, alternative crops, and waste streams. Moreover, the group will begin to develop a corn stover logistics system that will be capable of moving 80,000 tons to 500,000 tons of corn stover to a processing facility.

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Program Focuses on Biorenewables

The Biorenewable Resources and Technology (BRT) Graduate Program at Iowa State University (ISU) offers students advanced study in the use of plant and crop-based resources in the production of biobased products. This program, the first in the nation to offer degrees, currently has 16 enrolled students and through summer 2004, has graduated six students.

Students take interdisciplinary courses on campus in biorenewable resources and other areas such as plant science. Coursework includes a fundamentals course that is offered on campus and through Engineering Distance Education (EDE). Offering the fundamentals course through EDE allows the program to reach students in other parts of the country who are interested in biorenewable resources.

Now, through a six university partnership, BRT students are able to study biorenewable resources with international experts in Europe. The new international program allows graduate students in the BRT program to enroll in an intensive two-week program or to study abroad at one of the European universities for up to six months.

The BRT program was developed in 2002 to provide advanced training for students in the areas related to biobased products. Also, the program facilitates interdisciplinary research focused on these technologies and their implementation while preparing students to address challenges involved in transitioning to a biobased economy in Iowa and other regions of the world. For more information about the BRT program, please visit the website at: www.biorenew.iastate.edu/graduate/.

Funding for the BioEconomy Update is provided by the W.K. Kellogg Foundation

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