

# Biobased Products and Processing

Biobased Products and Processing

## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Biobased Products and Processing

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
502	New and Improved Food Products			35%	
511	New and Improved Non-Food Products and Processes			35%	
605	Natural Resource and Environmental Economics			10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.			20%	
<b>Total</b>				100%	

## V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	0.5	0.0	13.2	0.0
<b>Actual</b>	0.0	0.0	13.2	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	410792	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	423087	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	340004	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Several products are being produced and marketed by private industry, LLC, or grower cooperatives in Montana. The Institute has developed additional collaborative relationships with MSU TechRanch and MSU TechLink to facilitate technology transfer from BPI to the private sector. These collaborators have expertise in incubating new businesses and new products, as well as assisting existing enterprises in product expansion.

The Institute will:

- Conduct outreach activities related to biobased products
- Develop systems that ensure food safety and agricultural security
- Develop value-added, agriculturally based end-use products
- Establish biobased product and food science education and research programs
- Enhance partnerships among faculty across the Montana university system, producers, agricultural industry and other educational institutions across the region
- Provide mechanisms to enhance agricultural production practices to enhance product quality
- Use technology and biotechnology to improve plant and animal production systems

**2. Brief description of the target audience**

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**V(E). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	100	50	0	0
2008	750	750	0	0

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

**Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	1
2008:	7

**Patents listed**

- Strobel. Munumbicins, wide spectrum antibiotics from Streptomyces. U.S. Patent #7,259,004 (2008)
- Strobel, G.A. Use of M. albus in treating human wastes. U.S. provisional patent and full Patent #7,259,004. License to Phillips Environmental Products. (2007)
- Strobel, G.A. A Naphthlene producing endophytic fungus M. vitigenus. U.S. Patent #7,267,975 (2007)
- Strobel, G.A. Pestacin and isopestacin novel antioxidants. U.S. provisional patent, now full patent pending as Patent #7, 192,939. License pending to HMV of Salt Lake City, Utah. (2007)
- Strobel, G.A. Endophytic Gliocladium Species and Methods of Producing Volatile Compounds and Hydrocarbons (provisional patent submitted 10/07). License pending to SGI of San Diego, California. (2007)
- Strobel, G.A. The genetic systems controlling hydrocarbon production in Gliocladium (provisional patent 10/07). MTA with Eli Lilly Co. (2007)
- Strobel, G.A. Volutellin A, an immunosuppressive peptide from Volutella sp. (provisional application) (2007)

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	0	5	
2008	0	5	5

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

New business partnerships created

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	2	0

**Output #2**

**Output Measure**

Number of research citations

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	6	10

**V(G). State Defined Outcomes**

<b>O No.</b>	<b>Outcome Name</b>
1	Number of SBIR funding proposals submitted to federal agencies
2	Number of opportunities and value-added programs introduced in Montana through continued education, research, and partnering
3	Number of new products with value-added potential evaluated per year within Montana
4	Number of new food safety recommendations developed for consumers, which add value to Montana's agricultural products
5	New or expand business and/or partnerships created inside and outside of Montana

**Outcome #1**

**1. Outcome Measures**

*Not reporting on this Outcome for this Annual Report*

**2. Associated Institution Types**

**3a. Outcome Type:**

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

- Economy
- Appropriations changes
- Public Policy changes

**Brief Explanation**

Normal delays in the development of biocontrol products and the challenges needed to obtain product registrations at the USEPA extend the time needed for innovative research to become commercially viable products. With the granting of emergency uses for biocontrol products, the time to market has been substantially reduced.

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

**1. Evaluation Studies Planned**

- Retrospective (post program)
- During (during program)

**Evaluation Results**

The success of the Biobased Products and Processing projects has been demonstrated in the substantial and growing interest from agricultural producers and consumers. The general acceptance of ethanol-based biofuels has increased the interest in the production of camelina. Growers are adjusting acres of small grains to accommodate this new crop. A major challenge at this juncture is the lack of chemical products labeled for use on alternative crops and the fluctuating prices offered for small grains. Montana is collaborating with other states through the IR-4 program to obtain labels for pesticides used in camelina.

**Key Items of Evaluation**

Evaluations are on-going through interactions at winter meetings.