

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Sustainable Energy

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment	20%		0%	
601	Economics of Agricultural Production and Farm Management	80%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.9	0.0	1.0	0.0
Actual Paid Professional	0.1	0.0	0.4	0.0
Actual Volunteer	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
8830	0	67451	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
21338	0	33931	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
25170	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Energy Crop Research Projects

Renewable energy workshops

2. Brief description of the target audience

- Agriculture: Service Providers
- Agriculture: Crop Producers
- Agriculture: Farmers

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	142	0	0	0

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	8	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Research Projects

Year	Actual
2013	19

Output #2

Output Measure

- Workshop - single session

Year	Actual
2013	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	the number of individuals who implement recommended practice(s) beginning energy crop production or increasing yield and/or quality of existing crops contributing to a sustainable, cost effective energy source

Outcome #1

1. Outcome Measures

the number of individuals who implement recommended practice(s) beginning energy crop production or increasing yield and/or quality of existing crops contributing to a sustainable, cost effective energy source

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	27

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Oilseed-type sunflower is a relatively new crop for the state of Vermont, with the potential to add value to farms. Unfortunately, bird and insect pests have limited the overall yield potential with seed and oil yields traditionally lower than national averages. Birds have decimated up to 80% of growers' sunflower fields, migrating through and quickly decreasing yields. Insect pests like the Banded Sunflower Moth have proven devastating to seed yields and quality by feeding on the meal inside seeds.

What has been done

To address issues of pest predation, UVM Extension initiated on-farm research trials evaluating sunflower planting dates ranging from mid-May to late June. Later planting dates resulted in higher seed and oil yields and, often, greater test weights, indicating better seed quality. UVM Extension began recommending to some growers that selecting a shorter-season variety and planting in June, as opposed to earlier in the spring, may help to mitigate pest pressures.

Results

One grower took UVM Extension's crop recommendations delaying planting by several weeks, and his calculated seed yield was 3410 lbs per acre, highest in the statewide survey and well above the national average of 1733 lbs per acre. Vermont's continued participation in the National Sunflower Survey has allowed for the tracking of yield data across years and the resources to conduct research and outreach has enabled UVM Extension's continued work on Integrated Pest Management in sunflower. In Vermont this has resulted in an increase in average seed yield enabling the crop to be considered a viable option for diversified farmers in the region.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Oilseed producers were surveyed at the annual oilseed producer meeting and online to identify if information generated and delivered by the UVM oilseed program has improved yield and quality of the crop. Farmers indicated that UVM programs helped them improve yield and quality by reducing pest pressure, assisting with variety selection and other agronomic practices.

Key Items of Evaluation