

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Water Gardens (Aquaculture) (Langston University)

- Reporting on this Program
Reason for not reporting
{No Data Entered}

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
401	Structures, Facilities, and General Purpose Farm Supplies		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.2	0.0	0.3
Actual Paid	0.0	0.1	0.0	0.1
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
0	32351	0	11107
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	26360	0	26360
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	97418	0	154046

V(D). Planned Program (Activity)

1. Brief description of the Activity

Studies were conducted on water garden filtration utilizing native submergent aquatic vegetation and on biological filter design for koi ponds.

2. Brief description of the target audience

All aquaculture farmers in Oklahoma.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	100	25	25	25

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Research Projects completed on Water Gardens

Year	Actual
2014	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of farmers learning water garden techniques.
2	Number of farmers using water garden techniques.
3	Farmers who improve the water quality of their water gardens and reduce operational costs.

Outcome #1

1. Outcome Measures

Number of farmers learning water garden techniques.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Development of the Oklahoma water garden industry is dependent on producing high quality Koi fish. Also, aesthetically pleasing and efficient production systems are needed. Filtration systems for ornamental ponds are derived from technologies developed for municipal waste treatment and/or swimming pools. While treatment cost is secondary for municipalities, both capital and operating costs are primary concerns for owners of private ornamental ponds. Costs can be reduced by using systems that rely on low pressure, high volume pumps. The cost reduction can be enhanced by combining technologies to maximize performance for solids removal and biotransformation of organic waste materials.

What has been done

During 2014, we conducted the Annual Langston University Aquaculture Day and participated in the meeting of the Kansas Aquaculture Association. Presentations were made during those conferences regarding the opportunities for aquaculture production and sales in Oklahoma and surrounding states. Filter systems for ornamental ponds were also designed.

Results

Potential impacts of newly designed filter systems will be reductions in the capital invested and operating costs for producers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #2

1. Outcome Measures

Number of farmers using water garden techniques.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Development of the Oklahoma water garden industry is dependent on producing high quality Koi fish. Also, aesthetically pleasing and efficient production systems are needed. Filtration systems for ornamental ponds are derived from technologies developed for municipal waste treatment and/or swimming pools. While treatment cost is secondary for municipalities, both capital and operating costs are primary concerns for owners of private ornamental ponds. Costs can be reduced by using systems that rely on low pressure, high volume pumps. The cost reduction can be enhanced by combining technologies to maximize performance for solids removal and biotransformation of organic waste materials.

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4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #3

1. Outcome Measures

Farmers who improve the water quality of their water gardens and reduce operational costs.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Development of the Oklahoma water garden industry is dependent on producing high quality Koi fish. Also, aesthetically pleasing and efficient production systems are needed. Filtration systems for ornamental ponds are derived from technologies developed for municipal waste treatment and/or swimming pools. While treatment cost is secondary for municipalities, both capital and operating costs are primary concerns for owners of private ornamental ponds. Costs can be reduced by using systems that rely on low pressure, high volume pumps. The cost reduction can be enhanced by combining technologies to maximize performance for solids removal and biotransformation of organic waste materials.

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4. Associated Knowledge Areas

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

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

External factors did not affect outcomes.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Development of best management practices for the water garden industry.

Key Items of Evaluation

Sharing best management practices with clientele.