

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Forage Production and Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---------|-----------------------------------|-----------------|-----------------|----------------|----------------|
| 205 | Plant Management Systems | 40% | | | |
| 307 | Animal Management Systems | 40% | | | |
| 402 | Engineering Systems and Equipment | 20% | | | |
| | Total | 100% | | | |

V(C). Planned Program (Inputs)

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

| Year: 2010 | Extension | | Research | |
|------------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| Plan | 3.2 | 0.0 | 0.0 | 0.0 |
| Actual | 4.0 | 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 |
| 140415 | 0 | 0 | 0 |
| 1862 Matching | 1890 Matching | 1862 Matching | 1890 Matching |
| 145868 | 0 | 0 | 0 |
| 1862 All Other | 1890 All Other | 1862 All Other | 1890 All Other |
| 0 | 0 | 0 | 0 |

V(D). Planned Program (Activity)

1. Brief description of the Activity

Forage Production and Management will use multiple delivery methods to reach the target audience: regional three-day schools on management-intensive grazing; pasture-based dairying core group meeting and "pasture walks"; winter feeding systems and summer pasture program using demos, clinics, and tours.

Fescue toxicosis and management workshops; Missouri Forage and Grassland Council Forage Conference; field days at outlying research centers; MU forage websites and multistate websites (cooperating with Oregon State University), electronic guides; CDs with prepared presentations; in-service training (ISEs) for regional staff; news releases for the general public; and popular press articles.

2. Brief description of the target audience

The primary target audience includes Missouri forage and livestock producers. These are mainly producers of beef and dairy cattle, although the program does address forages for other livestock, such as sheep, goats and horses, and non-livestock forage producers, such as hay producers and wildlife conservationists. The program also targets industry and government, as it presents current science, technology and training to agricultural business and policymakers.

V(E). Planned Program (Outputs)

1. Standard output measures

| 2010 | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---------------|------------------------|--------------------------|-----------------------|-------------------------|
| Plan | 6000 | 10000 | 500 | 0 |
| Actual | 4012 | 64000 | 1800 | 0 |

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

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

| 2010 | Extension | Research | Total |
|---------------|-----------|----------|-------|
| Plan | 0 | 0 | |
| Actual | 0 | 0 | 0 |

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide in-service training session (s) for regional Extension specialists on an annual basis.

| Year | Target | Actual |
|-------------|---------------|---------------|
| 2010 | 1 | 2 |

Output #2

Output Measure

- Develop or revise guide sheets on an annual basis for regional Extension specialists to use in producer meetings.

| Year | Target | Actual |
|-------------|---------------|---------------|
| 2010 | 4 | 1 |

Output #3

Output Measure

- Revise Missouri publication M168, Missouri Dairy Grazing Manual.

| Year | Target | Actual |
|-------------|---------------|---------------|
| 2010 | 1 | 0 |

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

| O. No. | OUTCOME NAME |
|--------|--|
| 1 | Nine hundred (900) producers will annually attend a management-intensive grazing (MiG) school. |
| 2 | Five thousand (5,000) Missouri producers will increase their awareness of stockpiling and summer pasture management for beef cattle. |
| 3 | Two hundred (200) Missouri farmers will increase their knowledge of fescue toxicosis. |

Outcome #1

1. Outcome Measures

Nine hundred (900) producers will annually attend a management-intensive grazing (MiG) school.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

| Year | Quantitative Target | Actual |
|-------------|----------------------------|---------------|
| 2010 | 0 | 0 |

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Management-intensive grazing is based on moving a herd of cattle from paddock to paddock, thereby intensifying the grazing pressure on a small area for a few days before allowing it to rest for several weeks. This practice results in more even distribution of manure, more legume persistence, and less application of commercial fertilizers. The benefit to producers is improved economic and environmental status of a livestock operation.

What has been done

In 2010, the University of Missouri teamed up with the Natural Resource Conservation Service to hold 24 multiday workshops for 711 producers.

Results

If 2010 is like the previous 11 years, nearly all of these producers will adopt various practices taught in these workshops, and half of these producers will receive cost-share funds to improve their fencing and watering facilities. The investments in pasture improvements as a result of this program in 2010 alone, and only on Missouri farms, are likely to exceed \$5 million.

4. Associated Knowledge Areas

| KA Code | Knowledge Area |
|----------------|---------------------------|
| 205 | Plant Management Systems |
| 307 | Animal Management Systems |

Outcome #2

1. Outcome Measures

Five thousand (5,000) Missouri producers will increase their awareness of stockpiling and summer pasture management for beef cattle.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

| Year | Quantitative Target | Actual |
|-------------|----------------------------|---------------|
| 2010 | 0 | 0 |

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Winter and midsummer feed accounts for about 70 percent of the cost of producing beef in the north-central United States. Beef producers have little control over output prices, so efforts to substantially improve profitability depend on finding new and innovative ways to reduce input costs, especially those for winter feed and summer pasture. Although the nature of systems-level research is complex, the program strategically attacks the problem from several angles.

What has been done

The curriculum was expanded to reflect new research results on stockpiled tall fescue for fall calving cow-calf pairs, to the importance of retaining ownership of calves through the stocker phase and ways to cope with high feed prices. In addition, grazing wedge software was developed to help beef producers plan and manage their pasture systems.

Results

More than 27,000 producers have adopted the techniques developed through this program. From 1998 to 2006, the percentage of producers using stockpiled tall fescue for winter feeding has doubled, from 26 percent to more than 54 percent. The increased use of stockpiled tall fescue saved the state's beef producers \$31 million dollars in 2010. Additionally, the programmatic efforts on retained ownership of fall-born calves through spring are being implemented on several farms in Missouri.

4. Associated Knowledge Areas

| KA Code | Knowledge Area |
|----------------|---------------------------|
| 205 | Plant Management Systems |
| 307 | Animal Management Systems |

Outcome #3

1. Outcome Measures

Two hundred (200) Missouri farmers will increase their knowledge of fescue toxicosis.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

| Year | Quantitative Target | Actual |
|-------------|----------------------------|---------------|
| 2010 | 0 | 0 |

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fescue toxicosis costs the Missouri beef industry \$160 million each year. It also costs the Missouri dairy and horse industry, though the economic impact has not been quantified for Missouri. The losses come from reduced calving rate and gain as a result of toxins produced by a fungus living inside the plant. Fescue toxicosis is the most detrimental forage-livestock disorder in Missouri and surrounding states.

What has been done

Some of the largest conferences in 2010 included long lectures with question/answer sessions regarding this livestock disorder. From January through December, this topic was presented to well over 400 cattlemen and agricultural advisors. In 2011, new programs will be implemented to educate larger crowds.

Results

This is a new program, and its impact is not yet quantifiable. Based on comments after each presentation, many of the producers planned on adjusting their management to reduce toxicity. Such adjustments included planting clovers and annual lespedeza, testing for the toxic fungus, and ensuring their cattle do not consume seedheads of tall fescue grass. (The seedheads contain high levels of toxin.) In addition, some producers planned to plant nontoxic varieties of tall fescue.

4. Associated Knowledge Areas

| KA Code | Knowledge Area |
|----------------|---------------------------|
| 205 | Plant Management Systems |
| 307 | Animal Management Systems |

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

High feed grain prices have altered the economic landscape such that forage management is more lucrative than ever. Producers using management-intensive grazing techniques are much better positioned than are their confinement counterparts to manage high feed prices.

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

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

Evaluation Results

Listed above.

Key Items of Evaluation

More than 27,000 producers have adopted the techniques developed through their participation in the Winter Stockpiling program. From 1998 to 2006, the percentage of producers using stockpiled tall fescue for winter feeding has doubled, from 26 percent to more than 54 percent. The increased use of stockpiled tall fescue saved the state's beef producers \$31 million dollars in 2010. Additionally, programmatic efforts to encourage retained ownership of fall-born calves through spring are being implemented on several farms in Missouri.

If 2010 is like the previous 11 years, nearly all of these producers will adopt various practices taught in the 24 grazing workshops, and half of these producers will receive cost-share funds to improve their fencing and watering facilities. The investments in pasture improvements as a result of this program in 2010 alone, and only on Missouri farms, are likely to exceed \$5 million.