

# Arkansas Beef Improvement Program: Workshop and Program Evaluation

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## Story in Brief

The Arkansas Beef Improvement Program (ABIP) is an Extension educational program using an integrated resource management approach to convey knowledge of beef cattle and forage management systems to producers. One educational method used to transfer ABIP knowledge included workshops. Workshops were offered through county Extension offices and consisted of two, 2.5-h programs. The teaching objectives of the workshop were to: (1) demonstrate the importance of establishing goals, (2) teach the importance of a cow-calf budget, (3) demonstrate the use of a forage analysis to determine supplementation needs, (4) demonstrate the value of cattle production records for selecting replacement and marketing cows, and (5) evaluate forage management practices to achieve production goals. An evaluation was conducted following each workshop to determine if the workshop achieved its educational objectives. Overall, participants responded that the ABIP workshop was very meaningful to their cattle operations, and 100% of the respondents liked the way the workshop was taught. An ABIP survey of all county agents and cooperators who participated in the ABIP whole farm program or any of the ABIP special projects was completed to determine if ABIP was achieving its educational objectives. A majority of cooperators and Extension agents thought their ABIP experience was most valuable (66% and 57%, respectively), and 100% and 97% of the cooperators and Extension agents, respectively, stated ABIP fulfilled their expectations. The ABIP accomplished its educational objectives and made an impact on cooperators and Extension agents. Surveys affirmed that ABIP should be a high priority Extension program.

## Introduction

Technology transfer from land grant institutions to agricultural producers may create awareness, but seldom leads to adoption (Beverly, 1988). Oftentimes, it is not the discovery of new technology but the adoption of proven technology that can greatly influence the profitability of a cow-calf operation. Economical cow-calf management is an impossible task if a logical and practical approach has not been developed for collecting and analyzing information, evaluating plans, and directing daily operations. Successful Extension programs have taught integrated resource management, where all ranch resources are evaluated before a decision is implemented (Troxel and White, 1996). This program was typically taught in 2- to 8-d workshops and attempted to teach decision-making skills rather than demonstrating specific beef cattle and forage management technologies. Appropriate management practices change over time and from farm to farm, region to region, and state to state, but the decision-making process does not change. Practicing decision-making skills in an educational workshop format is more efficient in terms of Extension resources than demonstrating decision-making skills on individual producers' farms. Therefore, the objective of this paper is to document the educational value of the county ABIP workshops, and to conduct a survey to determine if ABIP whole farms and special projects were valuable educational programs.

## Experimental Procedures

The Arkansas Beef Improvement Program (ABIP) was implemented in 1992. From 1992 to 2003, 45 of the 75 counties (60%) in Arkansas implemented at least one ABIP educational method (Figure

1). The goal of the program was to balance ranch resources to enhance the efficiency and profitability of Arkansas cattle production in an integrated resource management approach. The ABIP decision-making process involved setting goals, evaluating resources, and selecting the management practices to achieve those goals.

The ABIP used multiple educational methods to demonstrate cost-effective beef cattle and forage management practices. These methods included whole-farm programs, special projects, workshops, Extension agent training, and other educational methods (field days, newsletters, popular press articles, etc.).

Workshops were offered through county Extension offices and consisted of two, 2.5-h programs. The workshops were developed to meet the needs of both full- and part-time producers whether operating a small or large operation. Management teams such as husbands and wives, fathers and sons, owners and managers, etc., were encouraged to attend the workshop together. Workshops were limited to a maximum of 25 participants.

The workshop was a means to transfer knowledge gained from the ABIP whole-farm program and special projects. The teaching objectives of the workshop were to: (1) demonstrate the importance of establishing goals, (2) teach the importance of a cow-calf budget, (3) demonstrate the use of a forage analysis to determine supplementation needs, (4) demonstrate the value of cattle production records for selecting replacements and marketing cows, and (5) evaluate forage management practices to achieve production goals. The workshop was taught using problem-solving examples from ABIP experiences. The workshop teaching outline is given in Figure 2. An evaluation survey was completed following each workshop.

*ABIP Survey.* Seventy-four surveys (43 cooperators and 31 Extension agents) were mailed to past ABIP cooperators (whole-farm and special project cooperators) and Extension agents. Three weeks following the mailing of the survey, another survey was

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mailed to those who had not returned the first survey. Because cooperators and Extension agents attended and participated in ABIP educational activities, separate surveys were developed for each group.

*Analysis.* Where statistical analysis was not appropriate, means  $\pm$  SD were used to describe the data. An analysis of variance was performed with the GLM procedure of SAS (SAS Inst., Inc., Cary, N.C.) to analyze responses to the ABIP workshop survey. Chi-square (Cochran and Cox, 1957) was used to analyze survey data to determine if cooperators or Extension agents shared more information about what they learned from ABIP.

## Results and Discussion

Twenty ABIP workshops were conducted with an average attendance of 24. Although the responses for some questions were different ( $P < 0.05$ ) across counties (cow-calf budget, mineral supplementation and cow herd performance) and across years (cow-calf budget, supplemental feeding, mineral supplementation and cow herd performance), the data were pooled and are summarized in Table 1. Even though there were significant differences in the responses for these questions (across counties and across years), all of the means were greater than 4.2 (1 = none to 5 = very). Therefore, these differences of means were deemed insignificant in terms of program delivery and producer acceptance. There were no differences in response for the other questions across counties or across years ( $P > 0.10$ ). When asked how meaningful the topics to their cattle operation were, responses averaged  $> 4.4$ . When asked if they liked the way the workshop was taught, 100% of the respondents indicated "yes." The workshop participants were also asked if they planned to implement the management practices taught in the workshop (Table 1). The responses to implementing the practices taught in the workshop were very high (66 to 91%). The workshop participants who had implemented these management practices prior to attending the ABIP workshop answered "yes" to these questions. In addition, no effort was made to contact workshop participants to determine if the management practices were actually implemented. Some of the participants responded "no" to those management practices that did not apply to their operation. It was interpreted that the workshop evaluation documented that participants enjoyed and gained from participating in the ABIP workshops.

*ABIP Survey.* The survey response rate was 79.7% (67.4% cooperator response rate and 96.8% Extension agent response rate). The results of the survey are reported in Tables 2, 3, and 4. Summary of questions and results that were common between the cooperator survey and Extension agent survey are presented in Table 2. Summaries of those questions and results that were unique to the cooperator survey and Extension agent survey are given in Tables 3 and 4, respectively. No differences were noted between the responses of cooperators and Extension agents as to the type of ABIP information shared with others except that Extension agents shared more information about the Arkansas Steer Feedout Program than did

cooperators ( $P < 0.05$ ). Since all cooperators in ABIP did not participate in the Arkansas Steer Feedout Program, it would be expected that fewer cooperators would share this information than Extension agents. Overall, a majority of cooperators and Extension agents thought their ABIP experience was most valuable (66% and 57%, respectively), and 100% and 97% of the cooperators' and Extension agents' ABIP expectations were fulfilled.

The unique questions asked cooperators are reported in Table 3. Overall, the ABIP experience helped build cooperator confidence, which should improve their chances for success.

Extension agents used ABIP results in a variety of educational methods (Table 4). The most common methods used were county programs (87%) and county newsletters (80%). Although a majority of Extension agents used ABIP results at a field day (60%), not all Extension agents had a field day associated with their ABIP activity. The Extension agents in the current study (82%) and in a Texas study (88%; Troxel and White, 1996) agreed that the integrated resource management educational experience helped them to become a more effective Extension employee. Extension personnel in the Texas study (Troxel and White, 1996) and in the current study indicated that these types of programs should be a high priority for Extension Services.

## Implications

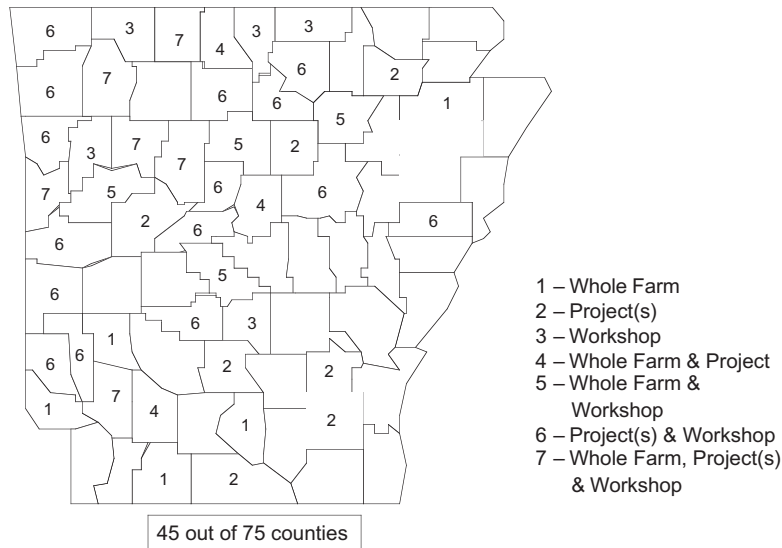
The ABIP workshops were very successful in conveying ABIP knowledge. Educational methods that included hands-on problem solving were appreciated by producers and Extension personnel. Overall, the ABIP verification programs (whole farms and special projects) were successful. This educational approach provided learning opportunities for the producer and Extension personnel. Extension personnel affirmed that these types of programs should be a high priority for Extension Service.

## Acknowledgments

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## Literature Cited

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**Fig. 1. ABIP Participation by County.**

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| <p>Session 1</p> <p>Cow-Calf Budgets</p> <ul style="list-style-type: none"> <li>• Establish goals</li> <li>• Monitor changes in the herd composition</li> <li>• Complete a cow-calf budget</li> <li>• Measure returns and direct costs of a cow-calf operation</li> </ul> <p>Nutrition: Supplemental Feeding</p> <ul style="list-style-type: none"> <li>• Identify the nutritional requirements of different groups of cattle</li> <li>• Formulate feed supplements based on forage analysis</li> <li>• Determine the cost of supplemental feeding</li> </ul> <p>Nutrition: Minerals and Vitamins</p> <ul style="list-style-type: none"> <li>• Mineral and vitamin requirements</li> <li>• Identify mineral and vitamin deficiencies of forages and supplements</li> <li>• Design a mineral-vitamin supplement</li> <li>• Recommendations for feeding mineral-vitamin mixes</li> </ul> <p>Session 2</p> <p>Cow Herd Performance</p> <ul style="list-style-type: none"> <li>• Overview of the cow herd performance testing program</li> <li>• Identify the requirements for participating in cow herd performance program</li> <li>• Use cow herd performance records to select heifers and cull cows</li> </ul> <p>Management Calendar</p> <ul style="list-style-type: none"> <li>• Controlled breeding season – managing cattle by production status</li> <li>• Nutrition, reproduction, health and genetic management</li> </ul> <p>Pasture Management</p> <ul style="list-style-type: none"> <li>• Identify seasonal forage requirements of the cow herd</li> <li>• Forage production practices to meet forage demands</li> <li>• Identify principles of designing a flexible grazing system</li> </ul> |
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**Figure 2. Teaching outline for the ABIP workshops.**

**Table 1. Summary of the ABIP workshop evaluations.**

| How meaningful were the following topics to your cattle operation?                          |                  |                          |           |
|---|------------------|--------------------------|-----------|
| Cow-calf budget   | 233 <sup>a</sup> | 4.4 ± .8 <sup>b, c</sup> |           |
| Forage testing  | 229              | 4.5 ± .7                 |           |
| Supplemental feeding  | 220              | 4.5 ± .7                 |           |
| Mineral supplementation   | 233              | 4.5 ± .7                 |           |
| Cow herd performance  | 203              | 4.4 ± .7                 |           |
| Forage production planning  | 197              | 4.6 ± .7                 |           |
| Grazing systems   | 202              | 4.5 ± .7                 |           |
| Controlled breeding season  | 208              | 4.4 ± .7                 |           |
| Timing of management practices  | 204              | 4.4 ± .7                 |           |
| Do you plan to implement one or more of the management tools that were taught? <sup>d</sup> |                  |                          |           |
| Topic:  | Yes (%)          | No (%)                   | Maybe (%) |
| Cow-calf budget   | 70.6             | 2.8                      | 26.6      |
| Forage test   | 81.5             | 1.2                      | 17.3      |
| Supplemental feeding  | 81.9             | 3.2                      | 14.9      |
| Mineral supplementation   | 91.1             | 2.4                      | 6.5       |
| Cow herd performance  | 66.1             | 2.4                      | 31.5      |
| Forage production planning  | 78.4             | 1.4                      | 20.2      |
| Grazing system  | 78.6             | 2.8                      | 18.5      |
| Controlled breeding season  | 78.2             | 2.4                      | 19.4      |
| Timing management practices   | 73.4             | 1.2                      | 25.4      |

<sup>a</sup>Number responding.

<sup>b</sup>Mean ± SD.

<sup>c</sup>1 = none to 5 = very.

<sup>d</sup>Number responding = 248.

**Table 2. ABIP survey questions and results common to both cooperators and Extension agents.**

| Item:   | Cooperators             | Extension agents |
|---|-------------------------|------------------|
| How many years were you involved in ABIP?   | 3.1 ± 1.54 <sup>a</sup> | 3.1 ± 1.42       |
| What information have you shared with other producers that you learned from ABIP? |                         |                  |
| a. have not shared information with others  | 0%                      | 0%               |
| b. importance of budget information   | 35%                     | 43%              |
| c. steer feedout information  | 17% <sup>b</sup>        | 43% <sup>b</sup> |
| d. importance of planning   | 62%                     | 53%              |
| e. importance of establishing ranch or production goals                           | 52%                     | 57%              |
| f. importance of pasture/hay meadow management                                    | 72%                     | 67%              |
| g. importance of forage testing   | 76%                     | 90%              |
| h. importance of soil testing   | 66%                     | 67%              |
| i. importance of beef cattle nutrition  | 69%                     | 70%              |
| j. importance of cow herd performance   | 55%                     | 70%              |
| With hindsight, how valuable was your participation in ABIP?                      |                         |                  |
| a. no value at all  | 0%                      | 0%               |
| b. some value   | 0%                      | 0%               |
| c. about average value  | 4%                      | 11%              |
| d. better than average value  | 30%                     | 32%              |
| e. most valuable  | 66%                     | 57%              |
| Did ABIP fulfill your expectations?   |                         |                  |
| Yes   | 100%                    | 97%              |
| No  | 0%                      | 4%               |

<sup>a</sup> Mean ± SD.

<sup>b</sup> Value for cooperators differed from value for Extension agents ( $P < 0.035$ ).

**Table 3. Survey questions and results unique to cooperators.**

| Item:   | Response                  |
|---|---------------------------|
| How has ABIP affected your outlook on ranching? |                           |
| a. improved changes for success                 | 3.9 ± 0.74 <sup>a,b</sup> |
| b. satisfaction with accomplishments            | 4.3 ± 0.54                |
| c. more realistic expectations                  | 4.0 ± 0.92                |
| d. enjoy ranching more                          | 3.8 ± 0.91                |
| e. can improve ranch resources                  | 4.1 ± 1.00                |
| f. improve pride of management                  | 4.2 ± 0.71                |
| g. daily activities have purpose                | 3.7 ± 1.08                |
| h. involve family more with ranching            | 3.6 ± 1.36                |

<sup>a</sup>0 = not sure; 1 = low outlook to 5 = high outlook.

<sup>b</sup>Mean ± SD.

**Table 4. Survey questions and results unique to extension agents.**

| Item:  | Response                 |
|--|--------------------------|
| How have you used ABIP results in your Extension program?                    |                          |
| a. newsletters   | 80%                      |
| b. field days  | 60%                      |
| c. newspaper articles  | 57%                      |
| d. radio   | 43%                      |
| e. county programs   | 87%                      |
| Has participating in ABIP helped you be a more effective Extension employee? | 4.1 ± 0.8 <sup>a,b</sup> |
| What priority should Extension place on ABIP verification-type programs?     | 4.6 ± 0.7 <sup>c</sup>   |
| How many years have you been an Extension employee?                          | 17.1 ± 9.4               |

<sup>a</sup>0 = not sure; 1 = no to 5 = very.

<sup>b</sup>Mean ± SD.

<sup>c</sup>0 = not sure; 1 = none to 5 = high.