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Farm Production Analysis Training for Small Farmers

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Farm Production Analysis Training for Small Farmers

Abstract

A partnership between Penn State Cooperative Extension and the Farm Service Agency has developed a successful production training program for more than 367 farmers. Farmers received training in producing planning and budgets, partial budgeting, and livestock and agronomic basics. Significant gains in knowledge occurred in multi-year planning, enterprise budgeting, and use of the Penn State *Agronomy Guide*. Designing workshop material for low-producing farmers proved difficult because most participants, while finding the topics helpful, also found the material too advanced. Future focus will encourage greater involvement with private-sector institutions and coordination between production and management Extension specialists.

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Introduction

A training partnership between Farm Management Extension specialists at Penn State University and the Pennsylvania Farm Service Agency of the USDA (PA/FSA) has provided a unique outreach avenue to train small-size farmers who are characterized by weak financial and production management. PA/FSA requested that production training workshops be provided as a follow-up to the highly successful financial training conducted in alternate years at approximately 15 Extension offices across Pennsylvania (Hanson, Parsons, Musser, & Power, 1998; Parsons, Hanson, Musser, Freund, & Power, 2000). The program reached 207 farms in 1998 and 172 farms in 2000.

Program Goal

The Farm Production Analysis Training Course accomplished a number of highly valuable objectives in outreach education. First, the producers were presented practical workshop planning and analysis exercises that were useful to them in their individual farm operations. The Farm

Production Analysis Training course provided an integrating framework for Extension agents and specialists to work together, pooling their expertise to address a more comprehensive management program. Farm Production Analysis Training also fostered an outreach partnership between Penn State Cooperative Extension and the USDA/FSA unit in Pennsylvania. Without FSA providing incentives for their borrowers to attend, it would have been difficult to achieve the enrollment turnout required to conduct the Farm Production Analysis Training program on a statewide basis.

Production Training Program

The Farm Production Analysis Training workshop addresses production management issues that are typical for traditional crop and livestock producers, with a special emphasis on dairy production. The course has an intense focus on production planning and workshop exercises. The core modules are:

1. Annual Production Planning,
2. Workshop Planning Exercises,
3. Partial Budgeting,
4. Livestock Production, and
5. Crop Production and review of the Penn State *Agronomy Guide*.

The daily homework assignments, listed below, indicate how the course begins with a thorough analysis of the just-completed year and then shifts to planning for the upcoming year.

- Day 1: Analysis of the past year's crop and livestock performance
- Day 2: Enterprise budgets for the year just completed
- Day 3: Project enterprise budgets for the new year
- Day 4: Capital spending plan, crop plan, and/or livestock plan for the new year
- Day 5: Prepare management behavior changes for the new year, referred to as "take-backs" and "give-aways."

The assignments are organized so that they not only build on the progress made by their completion in stages, but also comprise key components of the farm production plan for the upcoming production cycle.

Annual Production Planning

Enterprise Analysis

The planning process begins with careful evaluation of performance. Producers are asked to rate each crop enterprise with respect to yield, planting timeliness, weed control, harvest timeliness, machinery performance, and labor performance as Poor, Fair, Good, or Excellent. Then producers are challenged to briefly identify (in writing) the number-one management-related production problem of each enterprise. This done, the producer is further requested to briefly indicate how his/her management would change in the new year to better address the number-one problem. A similar enterprise evaluation is conducted for each livestock activity on the farm.

Enterprise Budgets

An enterprise budget is prepared with column entries for the year just completed, the projected costs and returns for the new year, and the actual costs and returns for the new year. These budgets are generic, with a focus on the major categories of yields, commodity prices, seed, fertilizer, chemicals, repairs, crop insurance, depreciation, fuel/oil/lube, custom hire, and "other." A similar three-column enterprise budget for livestock, with feed and supply inputs detailed, is also provided to the producers with livestock.

Capital Spending Plan

Purchases and sales of machinery, livestock, and real estate, including remodeling of facilities, are projected in terms of dollar outlays. And a brief description of asset type, year, model, etc., is included

Production Plan: Crops and Livestock

A generic production plan with categories for acres, yields, sales, and inventory carry-over is also prepared, with three separate columns in each category for past year-actual, current year-projected, and current year-actual. For livestock and dairy producers, a similar production plan is prepared with entries for animal inventories and milk and meat production and sales.

Projected Production Progress: Year-End

Finally, each producer is asked to briefly prepare a statement addressing the following categories

for the new year production cycle:

1. Major production goals,
2. New changes in the production system to be implemented, and
3. Financial progress anticipated.

The closing exercise in the own-farm planning process is to prepare at least two "take-backs" and two "give-aways" that assist the producer in improving his/her management performance in the upcoming production cycle.

Workshop Planning Exercises

The workshop exercises focus on applied issues that require decisions during the course of the production cycle. The first exercise appraises the current and future machinery needs of the operation, for each major implement item, including current fit to production needs, projected date of future upgrade, and type/characteristics of future replacement item.

The second exercise projects how the farm operation could best increase production to 150% of current capacity. The rationale for this is that producers frequently are observed to increase yields of corn/milk and expand the number of acres/cows so that combined output growth of 50% is achieved over a 5-year period. Workshop participants analyze yield and production units 5 years ago, current levels, and projections for 5 years into the future. This is followed with trend analysis of investment and debt for these respective three time periods.

The third workshop exercise requires producers to identify how they could increase the degree of production specialization--doing fewer things better. Producers consider options of reducing own equipment inventories, using more custom hire applications, and redesigning cropping and livestock systems to become more focused on the highest revenue producing unit.

The fourth exercise is particularly aimed at small farmers. They are encouraged to think "outside the box" in evaluating five ways to compete with large farmers: updating technology, practicing cash flow budgeting to control costs, use of a family spending plan, recognizing key elements of the management style they employ, and use of a debt reduction plan. These exercises enrich the peer-learning processes fostered by the workshop heuristic approach.

Partial Budgeting

In this section of the course, producers analyze an investment decision for their operation in terms of the four traditional categories in this approach:

- Added costs,
- Added receipts,
- Reduced costs, and
- Reduced receipts.

The key to the success of this analysis is for the producer to narrow the focus to a change that is needed to strengthen the upcoming production cycle.

Livestock Production

The impetus from Pennsylvania's large number of small-size dairy producers led to the development of a dairy production component to the course that was prepared and is taught by Extension dairy specialists. This component focuses on topics of dairy management basics, but also includes such features as:

- Personal goals,
- Management of debt-per-cow,
- Economies of size,
- Herd management goals,
- Feeding and nutrition,
- Pre-calving management, and
- Reproduction.

The importance of the "basics" in management can never be over-emphasized, particularly with small-size producers.

Crop Production

The Penn State *Agronomy Guide*, a comprehensive compendium of information for soil testing, fertilization requirements, soil preparation, characteristics of seed varieties, erosion control, alternative tillage systems, etc., provides the base for this segment of the course. Again, Extension agronomy agents lead this component of the workshop. Farmers are led through exercises in reading soil tests, calculating nutrients available from manure, and designing fertilizer and pesticide program for specific fields and crops.

Participant Evaluation Results

All participants were asked to complete nearly identical pre-and post-workshop evaluations to appraise changes in knowledge and viewpoint. Nearly 80% of the participants found multi-year production planning to be moderately or very important, post-workshop, compared to a 31% pre-workshop level (Table 1 (A)).

Interestingly, enterprise analysis, one of the most traditional approaches to farm management, registered the largest increase in knowledge, increasing from 20.1 to 75.2% (Table 1 (B)). It is also encouraging that knowledge of the *Agronomy Guide*, a traditional source of crop production information, increased substantially in the "moderate" and "excellent" categories (Table 1 (C)).

The last question in Table 1 (D) was only asked on a post-workshop basis. The response of participants was very positive, with 71.1% indicating budgeting/planning tools would be helpful to for their farm to survive. These results indicate that farmers benefit greatly from outreach production programming that focuses on budgeting/planning.

Table 1.
Participant Evaluation of Training Components (n=95)

	Before	After
A. Your view of the importance of multi-year production planning		
Not important	7.10%	1.20%
Not very important	15.50%	0.00%
Somewhat important	46.40%	18.80%
Moderately important	21.40%	56.50%
Very important	9.50%	23.50%
B. Your knowledge of enterprise analysis		
Minimal	18.00%	1.10%
A bit	20.20%	2.30%
Somewhat important	41.60%	20.50%
Moderately important	16.90%	64.80%
Excellent	3.40%	11.40%
C. Your knowledge of the <i>Agronomy Guide</i>		
Minimal	39.10%	1.10%
A bit	12.60%	2.30%
Somewhat	18.40%	23.00%
Moderate	21.80%	47.10%
Excellent	8.00%	26.40%
D. Budgeting and planning tools that will help your farm survive		

Not likely		2.20%
Not very likely		4.40%
Uncertain		22.20%
Likely		56.70%
Highly Likely		14.40%

Table 2 shows that farmer participants were more "satisfied" or "highly satisfied" with the more production-based components of the workshop, including the livestock and agronomy sections. Given the increasing importance of business management practices in a globalized market economy, this result reinforces the view that continued focus on budgeting/planning will be important in Extension programming.

Table 2.
Satisfaction with Core Workshop Sections

	Highly Dissatisfied	Dissatisfied	So-So	Satisfied	Highly Satisfied	Mean
Business	0.00%	6.20%	38.30%	42.00%	13.60%	3.63%
Livestock	0.00%	3.60%	19.00%	56.00%	21.40%	3.95%
Agronomy	0.00%	2.40%	19.00%	47.60%	31.00%	4.07%

Participant evaluations from 2000, when compared with the previous instruction cycle in 1998, provided some evidence that the course was viewed to be useful to producers (Table 3 (A)) and that the course materials had been improved (Table 3 (B)). However, it is very evident that this type of in-depth workshop is demanding of the participants. For example, in both years more than 90% of the participants found the level of the course was "too advanced" (Table 3 (C)). Also, about four out of five producers believed that the 5-day course was too long (Table 3 (D)) and that the budgets and plans prepared for their own farms amounted to too much outside work (Table 3 (E)).

Table 3.
Evaluations from 1998 vs. 2000

	1998 N=73	2000 N=95
A. Topics covered were helpful for my business		
Yes	76.4%	78.9%
Partially	19.4%	21.1%
No	4.2%	0.0%
B. The suitability of the instruction materials was		
Excellent	41.1%	53.2%
Sufficient	56.2%	45.7%
Poor	2.7%	1.1%

C. The level of the course was		
Appropriate	4.2%	5.3%
Too Advanced	94.4%	92.6%
Too Easy	1.4%	2.1%
D. The length of the course was		
Appropriate	30.1%	13.7%
Too Much	68.5%	84.2%
Too Little	1.4%	2.1%
E. The amount of outside work was		
Appropriate	11.1%	14.0%
Too Much	81.9%	86.0%
Too Little	6.9%	0.0%

Discussion of Production Management Training in 2002

The outreach workshop described above is viewed by participants to be highly successful. In addition, there is little question that this type of in-depth management training with focus on enterprise analysis and planning will become more important to producers in the future. However, it is recognized that most farmers are not particularly interested in upgrading or do not believe they have the time to substantially upgrade their management processes. A one-on-one focus, with application of the FINPACK financial and production management software or MARKETEEER marketing software, would be ideal if county Extension agent resources were adequate (Penrose, Smith, & Vollborn, 1999; Suvedi, Lapinski, & Campo, 2000). Integration of Web site resources also represents an option for the future (Walker & Holden, 2000).

Given these heuristic parameters, our focus will be several-fold as we prepare for the next round of Pennsylvania production management training in 2002.

- First, the support of private sector institutions to encourage farmer participation will be pursued. Partnerships in outreach education with PA/FSA can be extended to other agribusinesses, lenders, and cooperatives.
- Second, thorough preparation of the county Extension agents is critical. The personal tie-in between the workshop participant and the county agent instructor makes the educational experience positive and enjoyable for everyone involved.
- Third, the materials themselves can be "polished" so as to continue the trend towards higher quality and more professional materials with each training cycle.
- Finally, course materials, particularly exercises, can be partially shifted to the Internet.

There is no easy remedy or solution for increasing the benefits of management training other than to maintain a steadfast focus on the detail and quality of the Outreach education product,

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