

Agricultural Economics Curriculum

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Development Partners Include:



Lesson 1. Activity 5 – Case Study: Part 1

Introduction

Megan is a freshman taking agriculture in an Oklahoma high school. A year ago, her grandparents gave her a weaned heifer. She showed her heifer at several shows and saved her premium checks. Megan would now like to build a small breeding herd. By combining money from part-time summer jobs and her premium checks, she has saved \$500 to put toward the purchase of a bred cow.

Megan's parents currently let her graze her heifer at no cost, so she has avoided paying most production expenses. Though grazing is free, she does pay for other feed and veterinary expenses on her heifer. Her FFA advisor, Mr. Blake, encouraged her to continue to develop this small production project into a cattle Supervised Agricultural Experience (SAE). He recommended that she start keeping financial and production records. He gave her a copy of the SAE Record Keeping Activity booklet as a starting point.

To finance the investment in a bred cow, Megan will need to take out a youth farmer loan. She will also need to take out an operating loan to pay for feed and veterinary expenses. The bank's loan officer told Megan that in order to be considered for a loan that she must organize a business plan. Specifically, she will need to provide:

- 1) an **enterprise budget**,
- 2) a **cash flow budget**, and
- 3) a **balance sheet**.

For Part 1 of this Case Study, you will apply what you have learned about developing an enterprise budget and budget analysis. In later lessons, you will complete the other parts of the business plan requested by the bank.

Materials

Students will need to have the following materials to complete this exercise:

- Pencil
- Computer with access to Excel® or other spreadsheet program - or -
- Calculator

Student Instructions

To demonstrate how an enterprise budget is constructed, return to Megan's SAE project. She currently owns a heifer and she is looking to purchase a bred three-year-old cow. Because her parents let her graze her cattle at no charge, she will only be paying for purchased feeds and veterinary supplies. She plans to purchase a bred cow in January that will calve in February.

The calf will be weaned when it reaches six months of age in October and sold in December. The calf will need an ear tag (\$1), two rounds of vaccinations ($\$4 \times 2$), and 45 days of feed after weaning. (This 45-day period is called preconditioning.) During preconditioning, the calf will receive four pounds per day of a mixed ration (\$0.12 per pound) and graze native pasture. After preconditioning, Megan expects to sell a 630-pound calf at \$1.10 per pound.

The bred cow will cost \$750 with \$250 borrowed to make the purchase. Megan expects to own the cow for another seven years. After seven years, the cow will be culled with an expected value of \$470. The cow will need to be fed prairie hay and 20% protein range cubes for 90 days. On a daily basis, the cow will consume 30 pounds of hay at \$50 per ton and two pounds of range cubes at \$230 per ton.

As she intends to show her heifer at her local, county, and district livestock shows, Megan will need to keep her heifer in very good body condition. Therefore, she will feed her heifer eight pounds of textured or "sweet" feed (13.5% protein and 4% fat) for 120 days. Sweet feed costs \$9 per 50 pounds, or \$0.18 per pound. To assist with grooming and show preparation of the heifer, Megan recently purchased a blower for \$300 (a blower is basically a large hair dryer/fan).

Both the bred cow and heifer will need booster vaccinations (\$4 each). Control of parasites will cost \$4 for each of the breeding animals and \$2 for the calf.

Use the information discussed above to fill in the enterprise budget (Worksheet 1). You will need to compute the annual depreciation on the purchased cow and the blower. (Note, do not take depreciation on raised or gifted breeding livestock). Depreciation is taken on the purchased cow and blower. The cow depreciation is computed as $(\$750 - \$470) / 7 = \$40$ per year. The blower depreciation is computed as $(\$300 - \$200) / 5 = \$20$. Interest on operating is calculated by summing up cash operating expense (i.e., no depreciation). These items sum to \$309.60.

You also will need to know the increase in value for her heifer. The increase in value is \$180. Finally, Megan does not carry an inventory of feed or other supplies.

Megan will pay 5% interest on the note used to purchase the bred cow and 5% on her operating note. To estimate operating interest, multiply total cash expense (including interest) by the interest rate (5%) and divide by two, or

Operating interest = Cash expenses \times Interest rate / 2.

Farm Business Management Exercise 1: Worksheet

Directions: Use the information in Part 1 to fill in the table below or create an Excel[®] spreadsheet (Some spaces will remain blank). Be sure to answer the questions on the next page about Megan's SAE project.

	Calf	Cow	Heifer	Total
Revenue				
Calf sales	_____	_____	_____	
Gain (loss) on cull cow and bull sales	_____	_____	_____	
Change in accounts receivable	_____	_____	_____	
Increase in base value of raised breeding Livestock	_____	_____	_____	
Total revenue				(A)
Expenses				
Feed purchases	_____	_____	_____	
Grazing expenses	_____	_____	_____	
Veterinary expenses	_____	_____	_____	
Utilities	_____	_____	_____	
Hired labor	_____	_____	_____	
Other cash expenses	_____	_____	_____	
Depreciation	_____	_____	_____	
Change in supply inventory and prepaid expenses	_____	_____	_____	
Operating interest	_____	_____	_____	
Interest on long-term debt	_____	_____	_____	
Total Expenses				(B)
Returns to Unpaid Labor, Management and Equity Capital				(A-B)

Student Reflection

1. Determine if Megan's SAE project appears to be profitable.
 - a. If Megan expects to sell a 630-pound calf, what price will she need to receive in order to breakeven?
 - b. If her calf weighs 600 pounds, what is the breakeven price?
 - c. If her calf weighs 660 pounds, what is the breakeven price?
2. Determine how much Megan's calf needs to weigh in order to breakeven given the following prices per pound.
 - a. What is the breakeven weight if the calf is sold for \$1.10 per pound?
 - b. At \$1.00 per pound?
 - c. At \$1.20 per pound?
3. To date, Megan has not had to pay for grazing. If her parents charged her \$6 per month for grazing for both the heifer and cow (a total of \$12 per month):
 - a. How would her net return change?
 - b. How would her breakeven weights change?
 - c. How would her breakeven sale prices change?