Allegany County Cooperative Extension

4-H Junior Market Beef Project Book

Project Records due into the 4H office first Friday in September. If showing at State Fair, project records will be due the second Friday of September.

We will have Livestock interviews onFriday of fair from 9.30-11.30 am. Near the livestock arena.

INSERT A PHOTO OF YOUR MARKET ANIMAL HERE

Name: _____

Age (as of January 1st) _____

Years in 4-H _____

Date Project Started_____

Date Project Closed _____

Why Records are Important

The objective of a steer project is to give youth an opportunity to develop skills that will advance them in the future. This hands-on opportunity will help youth develop skills like leadership, organization critical thinking, goal setting, time management and communication. The task of keeping records can also help prevent a youth from falling short of their goals and maximize their opportunity to grow, learn and develop as an individual.

What You Need to Get Started

- an interest in raising a steer
- a place to keep and raise a steer
- money to purchase and raise a steer
- equipment to handle, feed and water a steer safely
- support from an adult

Knowledge About Steers

- different breeds and their characteristics
- cattle terminology
- body parts of a steer
- what steers eat to grow efficiently
- common steer behavior

Instructions

1. Use this project record for Market and Non-Market Steer Projects.

2. Keep a separate record for each individual animal.

3. Fill out a new project record book every year for Market and Non-Market Steers.

4. Write the things you do with and without your animal that relates to your steer project.

5. Keep all receipts as proof of money spent for your project. Photo copies of receipts are allowed.

6. Turn in your project records after the market sale by the date given by extension to receive your check. Non-market animals should be turned in by this date as well using true market estimations or actual sale price of animal.

Project Plans

Complete this section after you take ownership of your project.

Why did you choose this individual animal?

_____

_____

How do you plan to care for this animal?

_____

_____

What do you want to learn about your project this year?

_____ _____ _____

_____

How will you ensure your animal is on track for show and market?

_____

_____

Here is Some Terminology to Help You Get Started

Abomasum- the fourth compartment of the stomach of a cow, sheep or goat where enzymatic digestion occurs; Often called the true stomach

Antibiotic- Product produced by living organisms such as yeast that destroys or inhibits the growth of other organisms, especially bacteria

Bloat- Disorder characterized by gas distention in the rumen, typically seen on the animal's left side

Boxed beef- Cuts of beef put into boxes for shipping from packing plant to retailers. These primal (round, loin, ribs, and chuck) and subprimal cuts are intermediate cuts between the carcass and retail cuts

Cryptorchids- Male with undescended testes

Disposition- the temperament of an animal

Frame Score- a measure of hip or shoulder height used to determine skeletal size of cattle

Genotype- Genetic makeup of an animal

Phenotype- An animal's physical look

Subcutaneous- Under the skin, placement for some injections

Withdrawl- amount of time that must pass before slaughtering an animal after treatment.

Project Animal's Information

Animal's Name _____

Identification Number and/or Tattoo _____

County Identification Number _____

Breed(s) _____

Gender _____ Date of Birth _____

Date of Purchase _____ Total Purchase Amount $_____

Purchase Weight _____lbs Purchase Hip Height (inches) _____

Days from Purchase until fair weigh in _____

Estimated Finish Weight _____lbs

Estimated Amount of pounds needed to gain to finish _____lbs

Estimated pounds gained per day until fair weigh in _____

You Have a Project Steer

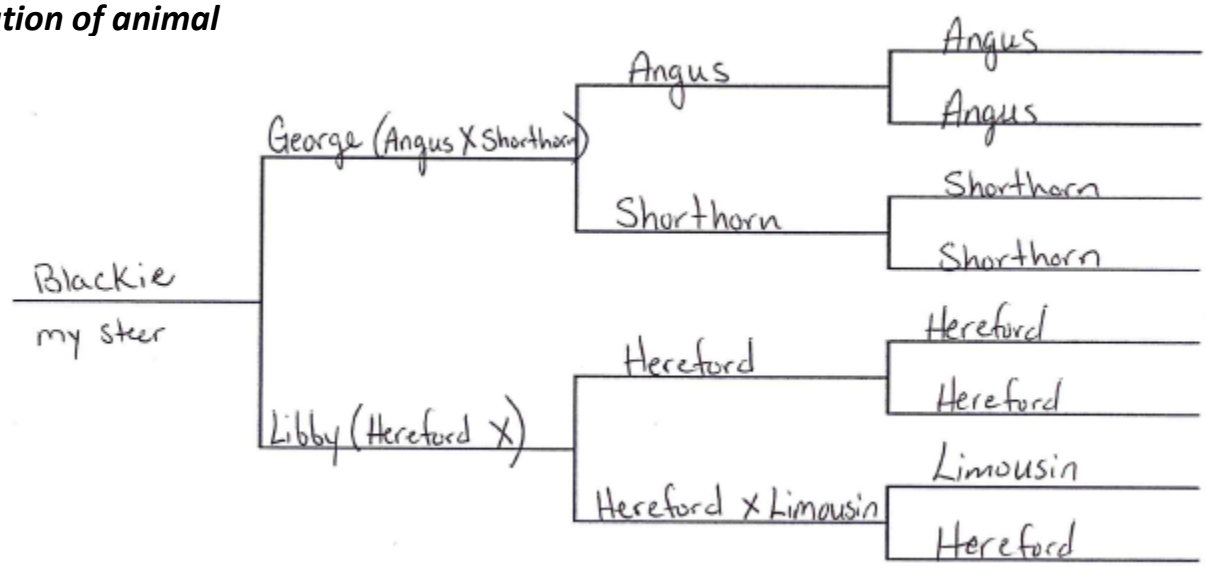
Review the fair rules to ensure your project animal gets the proper vaccinations and meets all other requirements such as weight and age for fair entry (attached).

If your animal is registered with a specific breed association copy, the names directly into the given pedigree. If your steer is a crossbreed fill in what you know even if it is just the breed. An example of each has been provided below.

Registered Animal

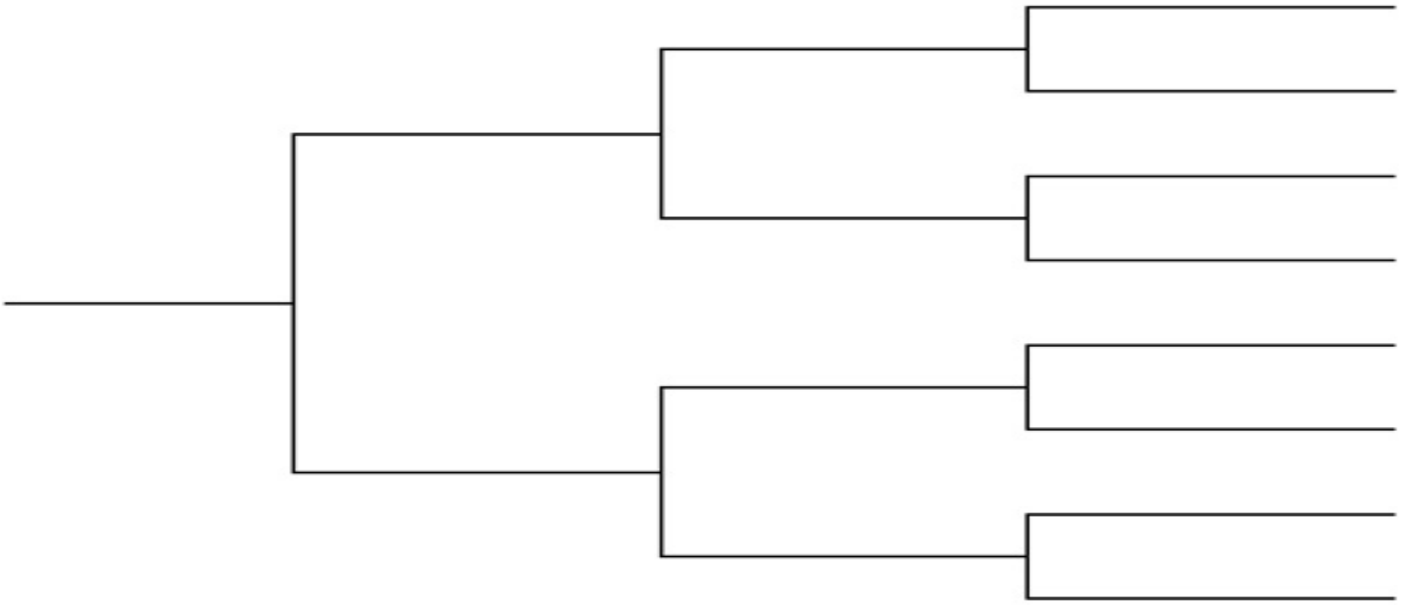


Estimation of animal



Project Pedigree

Fill in as much of your project's pedigree as you know even if it is just different breeds that make up your animal.





Purchase Information

Because every breeder is different you may need to obtain some of the information yourself. Most breeders should be able to give you the animals tag or tattoo identification and location (left ear, right ear, both ears etc.), what breed(s) makes up your chosen animal, gender, birth date, and current weight. The county will be around to tag your animal with a county tag for identification.

Your steer's hip height should be measured in inches, then determine your steer's age in months. Use the charts below get an estimated finish weight. Count the number of days until fair weigh in. Next subtract the estimated finish weight of your steer and his current weight to get the total number of pounds he needs to gain by fair weigh in to be considered a finished steer. Finally, divide the total number of pounds the animal needs to gain by the number of days until fair weigh in to get your estimated average daily gain (ADG).

Age (Months)	Hip Height (inches)								
	1	2	3	4	5	6	7	8	9
5	33.5	35.5	37.5	39.5	41.6	43.6	45.6	47.7	49.7
6	34.8	36.8	38.8	40.8	42.9	44.9	46.9	48.9	51
7	36	38	40	42.1	44.1	46.1	48.1	50.1	52.2
8	37.2	39.2	41.2	43.2	45.2	47.2	49.3	51.3	53.3
9	38.2	40.2	42.3	44.3	46.3	48.3	50.3	52.3	54.3
10	39.2	41.2	43.3	45.3	47.3	49.3	51.3	53.3	55.3
11	40.2	42.2	44.2	46.2	48.2	50.2	52.2	54.2	56.2
12	41	43	45	47	49	51	53	55	57
13	41.8	43.8	45.8	47.8	49.8	51.8	53.8	55.8	57.7
14	42.5	44.5	46.5	48.5	50.4	52.4	54.4	56.4	58.4
15	43.1	45.1	47.1	49.1	51.1	53	55	57	59
16	43.6	45.6	47.6	49.6	51.6	53.6	55.6	57.5	59.5
17	44.1	46.1	48.1	50.1	52	54	56	58	60
18	44.5	46.5	48.5	50.5	52.4	54.4	58.4	58.4	60.3

Frame Score	2	3	4	5	6	7	8	9
Est. Finish Weight (lbs)	850	950	1050	1150	1250	1350	1450	1550

Project Performance

This is where you can document a minimum of four weigh-ins including your final weigh-in. There are also columns to calculate more detailed performance data on your steer. You may find these calculations useful to determine if your project is on target for fair or if you need to change something like the type or quantity of feed being given.

Here is how to do the calculations:

1) Count the number of days between weights taken.
2) Subtract the current weight with the last weight to get total number of pounds gained to date.
3) Divide total number of pounds gained by number of days in this growth period to determine average daily gain (ADG).

You can see if your steer is gaining enough weight per day to reach your target finish weight. Keep in mind steers grow in stages just like people, so seasons and weather changes will effect growth. It is important to look and re-evaluate your steer's target finish weight. Keep in mind most steer's finishing weight is within a few hundred pounds of their dam's mature weight. Therefore, if your steer is calculating to finish at a thousand pounds but you know his dam's weight is closer to one thousand, four hundred pounds, you probably should adjust your steer's target finish weight to one thousand, two hundred pounds. However, you may find the next time you weigh him in and re-take his hip height that he went on a growing spurt and is not calculating closer to the one thousand, two hundred pounds.

4) Add up the total pounds of feed from the feed record chart to get the pounds of feed eaten for this growing period.
5) Divide pounds of feed eaten by total pounds gained to see how many pounds of your current feed it takes for your steer to gain one pound.

These calculations may help you determine if you should consider switching to a different feed or feed more of your current feed. Keep in mind changing feed on a steer to quickly can become deadly so it is important to make feed adjustments over several days and not all at once.

Project Performance

Animal's name and/or identification number	First weighing		Second weighing		Third weighing		Last weighing		Days between first and last weighings	Total lb gained	Average daily gain (lb per day)[1]	Total feed eaten (lb)[2]	Efficiency of feed conversion (lb feed per lb gain)[3]
	Date	Lb	Date	Lb	Date	Lb	Date	Lb					
Example: 201	5/3	62	6/10	79	7/15	92	8/14	110	103	48	0.47	298	6.21

[1] Divide total pounds gained by days between weighings to calculate average daily gain. (Example: 48 ÷ 103 = 0.47)

[2] If animals are fed as a group, not individually, enter the average amount of feed eaten by animals in the group. Calculate this by dividing the total amount of feed the group has eaten by the number of animals in the group.

[3] Divide total pounds of feed eaten between first and last weighings by total pounds gained to calculate efficiency of feed conversion. (Example: 298 ÷ 48 = 6.21)

Feed Record

Because not everyone has the same availability or set up to feed a project steer we have allowed for this record to be kept as fed feed or purchased. If you come from a large farm that grows most or all of the feed stuffs given to your steer, it may be easier to keep records on an 'as fed' basis. You could choose to document this daily, however this is not considered necessary. Keep in mind you need to know the amount feed eaten per weigh-in for your calculations.

If you document every time you buy feed, you may need to add a notation of 'pounds fed per day' unless the day you run out of feed is a day you choose to measure your steer's performance and you can simply add up the total pounds for that growth period.

Feed Record Example

Date Bought or Fed	Feed type	Number of Units	Unit Weight (lbs)	Total Wt (lbs)	Cost/Unit ($)	Total Cost ($)	Cost/lb ($)
March 1	Hay	6 bales	40	240	$2/bale	$12.00	$0.05/lb
March 20	Starter	5 bags	50	250	$12/bag	$60.00	$0.24/lb
May 20	Corn	1 ton	2,000	2,000	$110/ton	$110.00	$0.055/lb

Your Feed Records

Date Bought or Fed	Feed type	Number of Units	Unit Weight (lbs)	Total Wt (lbs)	Cost/Unit ($)	Total Cost ($)	Cost/lb ($)
Total							

Total weight fed = (a) + (c) =

Total cost or value of feed = (b) + (d) =

[1] Complete feed, grain, forage, grower, finisher, etc.
[2] Bags, bales, etc.

Project Health Treatment Records

It will be important to document not only what you treated your animal with but to collect the proper data off the label. Sometimes labels are not always clear but the data needed can typically be found by searching the internet. If you wish to become a future farm owner or manager someday treatment records are mandated. Here are a few examples of why proper records are needed:

If you have a cow that gets sick and you treat it with an antibiotic and then decided to cull the cow to an auction and that buyer in turn slaughters the cow for consumption, that cow's carcass could test positive for harmful contaminates. If the product you treated the cow with had a slaughter withdrawal time and the animal went to slaughter, your farm is legally responsible for any contamination or harm done to others.

In a different scenario, if you sell a heifer for breeding and you vaccinated her for shipping fever you would want to help ensure her health to your buyer. However the next thirty days go by and the new owner decides to slaughter the heifer instead. The vaccine you treated her with had a forty five day withholding and now your farm is being fined because the vaccine was given at your facility and you did not give the proper documentation to inform the new owner of the correct date of treatment, product used, and the withholding time.

It can also be useful when dealing with sickness on a farm to document the success of a treatment in case you need to look back and treat a different animal for similar symptoms. For example in a group of steers one steer starts breathing heavily due to respiratory disease. Your veterinarian recommends feeding that steer half a pound of granular Aureomycin a day for five days. Ten days after the treatment the heavy breathing returns in the same animal. Your veterinarian then recommends a ten cc shot of Draxxin which clears up the problem completely in this animal. The following year a different group of steers present the same heavy breathing issue. Looking back you can see it may be better for your herd to be treated with the Draxxin verses the Aureomycin and more cost efficient.

Record your animal's health records, treatments etc. in the table below.

Date	Animal or pen ID	Product name	Amount admini-stered	Route of admini-stration	Person who treated animals	Preslaughter withdrawal	Date withdrawal completed	Date and treatment results	Advising veteri-narian	Cost

Other Cost or Income

Here is where you will document things like buying shampoo to wash your steer or a halter to show him in. You can also document entry fees paid. If you take your animal to a show and you win prize money you will need to document it here. In the next section you will need to separate out if it was an income or an expense so being sure you are documenting it in your chart correctly.

Date	Item/description	Cost ($)	Income ($)
Example 4/18	Entry Fee	$5.00	
Total			

Financial Summary

Here is where you will be calculating your profit or loss. If a loss did occur this page may help you determine why you had a loss so you can improve upon it with next year's project. This chart is meant to keep a running total in the last column. A sample has been provided below.

	Actual Amount ($)	Total ($)
Cost of animal at Purchase ($)	$500.00	$500.00
Total Cost of Feed ($)	$2,000.00	$2,500.00
Total Health Care Cost ($)	$50.00	$2,550.00
Other Cost ($)	$380.00	$2,930.00
Other Income ($)	$100.00	$2,830.00
Total Sale Price of Animal ($)	$2.00/lb x 1200lbs =$2,400.00	-$430.00
Profit or Loss		Loss

Financial Summary

Here is where you are going to put all your documentation together from the previous pages.

Income

Other income total $_____ Sale Price $_____ Final Weight _____lbs

Expenses

	Actual Amount ($)	Total ($)
Cost of animal at Purchase ($)		
Total Cost of Feed ($)		
Total Health Care Cost ($)		
Other Cost ($)		
Other Income ($)		
Total Sale Price of Animal ($)		
Profit or Loss		

How did you do and what can you do differently next year to increase profitability of your project?

_____

_____

_____

How did the measurements taken throughout the year to project finishing weight and the actual finishing weight compare?

_____

_____

_____

Marketing a Project Steer

In the above example of a financial summary we can draw a few different conclusions and then check our observation by looking deeper into our project record:

1) You notice your "other cost" total seems high. When you look back you see you documented the purchase of several start up items such as buckets, halters, and clippers because it is your first year. Many of these items will carry over to next year's project. This would be one way your profit would improve next year as you won't have these start-up costs next year since these items can be reused.
2) You also know you relied on buyers present at the sale to purchase your steer because you did not take the time to find a minimum of two buyers for your steer and you received the lowest price per pound for your steer on sale night.

This is where marketing comes into play. To make a good "sales pitch" to a potential buyer it is important to take the time and evaluate your steer. The information given to you by the breeder and the measurements you took upon purchase like current weight, hip height, age and breed can all play a role in your marketing scheme. By calculating your estimated finish weight you know about the total pounds your steer will weight come sale night. This is important since steers are typically sold on a per pound bases. Then by taking the weights throughout the growing period you can see if your animal is staying on target to finish at that weight estimation or if it has changed. You will also start to see how efficient your steer is at turn feed (dollars invested) into pounds (product) to be sold and marketed. This can help you estimate what your final cost to raise your steer might be and give you time to change it before it is too late. You then can calculate what your approximant breakeven price would be (do not use your breakeven price as your market price as your goal should be to make a profit). Pick a reasonable dollar amount say five hundred dollars for profit. Add that amount to your estimated cost to raise and divide out by estimated finish weight to get your estimated desired market price. This is the dollar amount per pound you should be marketing to your buyers. Because steers are very costly not only to raise but to purchase be sure your potential buyer knows approximately what your steer is going to weigh so they can have a total dollar figure prepared when coming to buy. As you advance through the steer project you will be given more tools and ways to help calculate profitability however none of this will matter if you don't market your steer just as diligently as the effort put forth into raising him.

Summing up the Year's Experience

Answer the following questions before turning in your project record. Answering these questions will help the program educators better understand where they can help improve the program for future years. It will also help you make realizations about your experience of raising a steer.

What You Experienced

What skills did you learn or improve?

_____

_____

What goals did you meet?

_____

_____

In what ways did you help or teach others?

_____

_____

_____

Where did you struggle with your project and what did you do to fix it?

_____

_____

_____

_____

What would you like to learn more about next year?

_____

_____

_____

Portions of this Project Book were adapted from publications from Penn State University's College of Agricultural Sciences and Penn State Extension

Body Condition Score (BCS) Descriptions and Depictions

BCS	Description
1	Clearly defined bone structure of shoulder, ribs, back, hooks and pins easily visible. Little to none muscle tissue or fat present.
2	Small amount of muscling in the hindquarters. Fat is present, but not abundant. Space between spinous process is easily seen.
3	Fat begins to cover loin, back and foreribs. Upper skeletal structures visible. Spinous process is easily identified.
4	Foreribs becoming less noticeable. The transverse spinous process can be identified by palpation. Fat and Muscle tissue not abundant, but increasing fullness.
5	Ribs are visible only when the animal stand stretched. Spin is not visible. Each side of the tailhead is filled but not mounded.
6	Ribs not noticeable to the eye. Muscling in hindquarters plump and full. Fat around tail head and covering the foreribs.
7	Spinous process can only be felt with firm pressure. Fat cover in abundance on either side of tail head.
8	Animal smooth and blocky appearance; bone structure difficult to identify. Fat cover is abundant.
9	Structures difficult to identify. Fat cover is excessive and mobility may be impaired.

Body condition scoring is a subjective measurement, meaning that one producer may score slightly different than another. There are many reasons to body score your herd often and at specific life stages. Many studies have been published and document correlating body condition scores with finish and cutability, colostrum production, pregnancy rates, pregnancy losses, and nutritional status. Body condition scores of 5-7 are optimal bull and cow scores and should be the scores to maintain.



BCS 2



BCS 3



BCS 4



BCS 5



BCS 6



BCS 7