Starting Your Sustainable Small Farm in Idaho

Livestock Enterprise Budgets

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University of Idaho Extension

CULTIVATING SUCCESS

RURAL roots
healthy farms healthy food healthy communities

Growing demand for local, humanely raised livestock

- Widespread growth in farmers' markets has given small scale producers access to consumers interested in local products
- Relatively low entry costs
- Producers need to know their production costs in order to determine consumer demand at that price

What is a budget?

- Forward-planning tool
- Estimate of profitability
  - Given my cost assumptions, does it look like I will make money?
- Tests feasibility
  - Is it possible for me to do this with the resources I have?

What is an enterprise?

- An enterprise represents one particular production method:
  - Grass-fed beef
  - Pastured poultry
  - An organic Jersey dairy

Enterprise budgets as a planning tool

- Your budget will be specific to:
  - Your region
  - Your resources
  - Your management style

Research and record-keeping aspects

- Historical production and financial records will help you create accurate budgets
- Many people start with existing budgets and adapt them to their situation

Livestock budget characteristics

- Unit (head, litter, 100 birds, 30 head)
- Period (may be more or less than a year)
  - Beef take 1.5 to 2 years to finish
  - Broilers may take 6 to 8 weeks
- Multiple products
  - Lambs, fleece, cull ewes

Feed and pasture costs

- Purchased feed (cost)
- Raised feed
  - Value at opportunity cost (what you could sell it for)
- Pasture costs
  - Rent charge if renting
  - Opportunity cost if owned (rental rate)
  - Alternatively, costs of production for pasture

Livestock Facilities

- Buildings
- Fences
- Pens
- Feeders
- Waterers/wells
- Milking equipment
- Feed storage

Machinery & equipment

- May be used for both crop & livestock production
- Divide operating & ownership costs according to the proportionate use of these items

How do you create an enterprise budget?

Item	Quantity Per Chicken	Unit	Price or Cost/unit	Total Value or Cost
Income:				**$ 1,930.48**
Slaughtered Chickens	3.50	lb	$ 7.88	$ 1,930.48
Operating Costs:				
Chicks	1.00	head	$ 1.80	$ 135.00
Shipping on chicks	1.00	head	$ 0.27	$ 20.25
Feed: Starter, lb	2.13	head	$ 0.54	$ 80.18
Feed: Grower, lb	17.17	head	$ 0.51	$ 607.51
Chick and hen grit, lb	3.50	head	$ 0.22	$ 54.95
General Labor (hours per bird)	0.47	hour	$ 15.00	$ 493.50

Start with your basic assumptions

- Purchase day-old chicks
- Sell them at 4 lb each
- Research says this will take 8 weeks with Slow Cornish Cross broilers

Research your input costs: organic broilers

Item	Unit	Price per unit
Chicks, day old, Cornish X	chick	**$1.65**
Chicks, day old, Cornish X Slow	chick	**$1.80**
Shipping	chick	**$0.27**
Grit	50 lb bag	**$10.99**
Organic feed, starter	44 lb bag	**$23.66**
Organic feed, grower	44 lb bag	**$22.24**
Slaughter charges	chicken	**$3.50**
Land rent	acre	**$280.00**
General labor	hr	**$15.00**
Land use per 10' x 10' tractor	acre	**0.125**

Start filling in the details

- How much feed is required for this breed?
  - Organic, GM-free, and/or local feed?

Start filling in the details

- What about housing?
- Will a brooder be needed?
- What about predator protection?

Research enterprise budgets online

NC FARM SCHOOL
www.ncfarmschool.com

Breakeven if only eggs are sold: $4.55 per dozen

NC State University A&T State University COOPERATIVE EXTENSION
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Small Flock Egg Production Budget

Break Even Table for Eggs and Spent Chickens

	Price Mix 1	Price Mix 2	Price Mix 3	Price Mix 4	Price Mix 5
Eggs- per dozen	$3.65	$3.95	$4.25	$4.55	$4.85
Spent Hens- per bird	$5.85	$6.15	$6.45	$6.75	$7.05
Gross Income	$5,913.75	$6,386.25	$6,858.75	$7,331.25	$7,803.75
Net Income	917.39	444.89	27.61	500.11	972.61

Will it be profitable?

- Do you really want to invest your time and resources into an unprofitable enterprise?

PURDUE EXTENSION | AGRICULTURAL ECONOMICS

Small-Scale Livestock Enterprises:

Goat Enterprise Budget

Are you considering ALL of your costs?

- Feed should be easy to calculate
- Labor will require tracking your time
- Allocating costs of your multi-year investments and other fixed costs are harder

IdahoAgBiz.com UI Extension website

Standard budget format

- Revenue
  - All products from your enterprise
- Operating costs
- Fixed costs
- Net returns over operating costs
- Net returns over fixed costs

Revenue sources, dairy

Jersey dairy, 120-head						
	Weight Each	Unit	Total Number of Head Or Units	Price or Cost/Unit	Total Value	Value or Cost/Head
Gross Receipts						
Milk	194.00	cwt	120	28.91	673,024.80	5,608.54
Bull calves	1.00	head	55	100.00	5,500.00	45.83
Heifer calves	1.00	head	55	234.00	12,870.00	107.25
Cull cows	1.00	head	32	819.00	26,208.00	218.40
Total Receipts					$ 717,602.80	$ 5,980.02

Meat Chicken Cost Breakout

	Cost Per bird, 3.6 lbs	Cost per lb
Chicks	$ 1.20	$ 0.33
Farm Cost	$ 4.20	$ 1.17
Labor	$ 6.00	$ 1.67
Transportation	$ 0.50	$ 0.14
Processing	$ 5.00	$ 1.39
Marketing and Sales	$ 3.00	$ 0.83
Conventional Feed	$ 3.20	$ 0.89
GMO Free Feed	$ 5.30	$ 1.47
Organic Feed	$ 6.95	$ 1.93
Conventional Feed Breakeven	$ 23.10	$ 6.42
GMO Free Feed Breakeven	$ 25.20	$ 7.00
Organic Feed Breakeven	$ 26.85	$ 7.46

It all adds up!

NC Choices
a Center for Environmental Farming Systems initiative

Operating costs

- Typically increase with increased production

Operating Costs:
Chicks
Shipping on chicks
Feed: Starter
Feed: Grower
Chick and hen grit
General Labor (hour per bird)
Slaughter Charge
Supplies (bags, ties, cleaning supplies)
Bedding for brooder
Utilities

Fixed costs

- These will need to be allocated across many seasons

Fixed Costs:
Depreciation on brooders, feeders, waterers
Chicken tractor depreciation
Interest on brooders, feeders, waterers
Chicken tractor interest
Pasture

Depreciation: the value of your assets that is used up with each year of use

Annual depreciation is calculated as a simple straight-line depreciation:

$$\frac{\text{(Purchase - Salvage Value)}}{\text{Years of Life}}$$

An interest cost represents the annual value of capital in your enterprise

Interest is based on the average value of your investment times the interest rate:

(Cost + Salvage Value)/2 = average value

Multiply by your chosen interest rate

Annualizing fixed costs in your budget: Chicken tractor expenses

Annualized fixed costs for the chicken tractor

Item	Value
Purchase price	$307.58
Salvage price	$15.00
Years of life	5
Interest rate	6.00%
Annual depreciation	$58.52
Annual interest	$9.68

Red type indicates an input cell. You may change these numbers.
Blue type indicates a calculated cell. Do not change these numbers.

Imbedded formulas calculate depreciation and interest based on your assumptions, which can be easily changed.

Breakeven analysis

Cost comparison, pork

COST BREAKOUT	Total Per Pig	Total Per Lb.
Feeder Pig	$75.00	$0.61
Feed		
Conv.	$174.00	$1.41
GMO-Free	$285.00	$2.32
Organic	$356.00	$2.89
Labor	$35.01	$0.28
Farm Costs	$56.28	$0.46
Transport	$44.00	$0.36
Processing	$199.88	$1.63
Marketing	$65.03	$0.53
Break even cost Conv.	$649.20	$5.28
Break even cost GMO-FREE	$760.20	$6.18
Break even cost Organic	$831.20	$6.76

Comparing two alternatives: Holsteins and Jerseys

	210-Head, Open Lots, Holstein	120-Head, Free Stall, Jersey
	$/head	$/head
Milk production (cwt per year)	241.27	194.00
Milk Revenue	$5,416.51	$5,608.54
Other Revenue	$479.52	$371.48
Total Revenue	**$5,896.03**	**$5,980.02**
Feed Expense	$2,098.47	$1,911.85
Vet Expense	$181.09	$156.47
Hired Labor Expense	$585.68	$624.77
Interest Expense	$94.00	$94.00
Other Operating Expenses	$1,290.36	$1,330.33
Total Operating Expenses	$4,249.60	$4,117.42
Net Returns over Operating Expenses	**$1,646.43**	**$1,862.60**
Capital Recovery Costs	$291.03	$459.11
Other Ownership Costs	$206.99	$169.61
Total Ownership Costs	$498.03	$628.72
Total Variable plus Ownership Expenses	$4,747.62	$4,746.14
Net Returns over Total Expenses	**$1,148.41**	**$1,233.88**

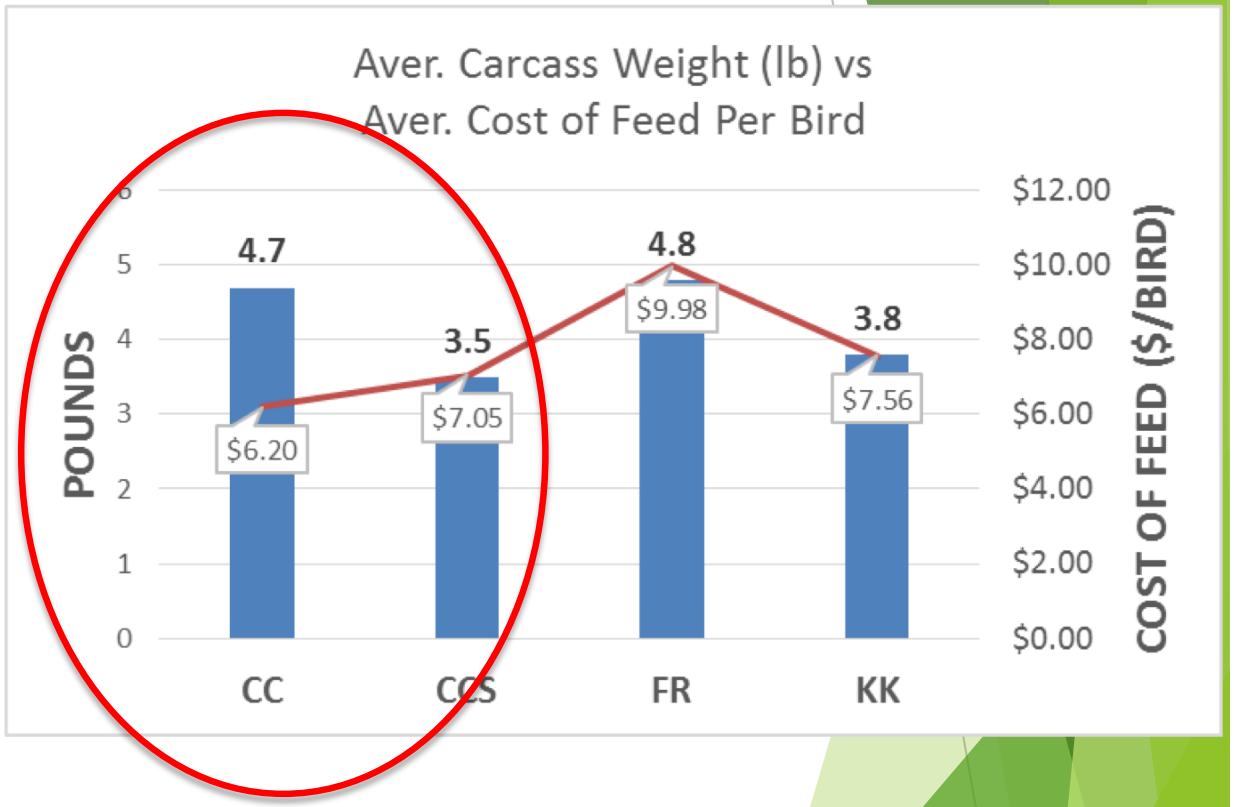
Breakeven Analysis:

Example: Cost comparison by broiler strain

- Cornish Cross (CC) is a hybrid meat bird developed for high feed efficiency and quick maturation
- Slow Cornish Cross (CCS) is a slower maturing, smaller strain better adapted to pasture production. It has fewer leg, heart, and heat sensitivity problems.

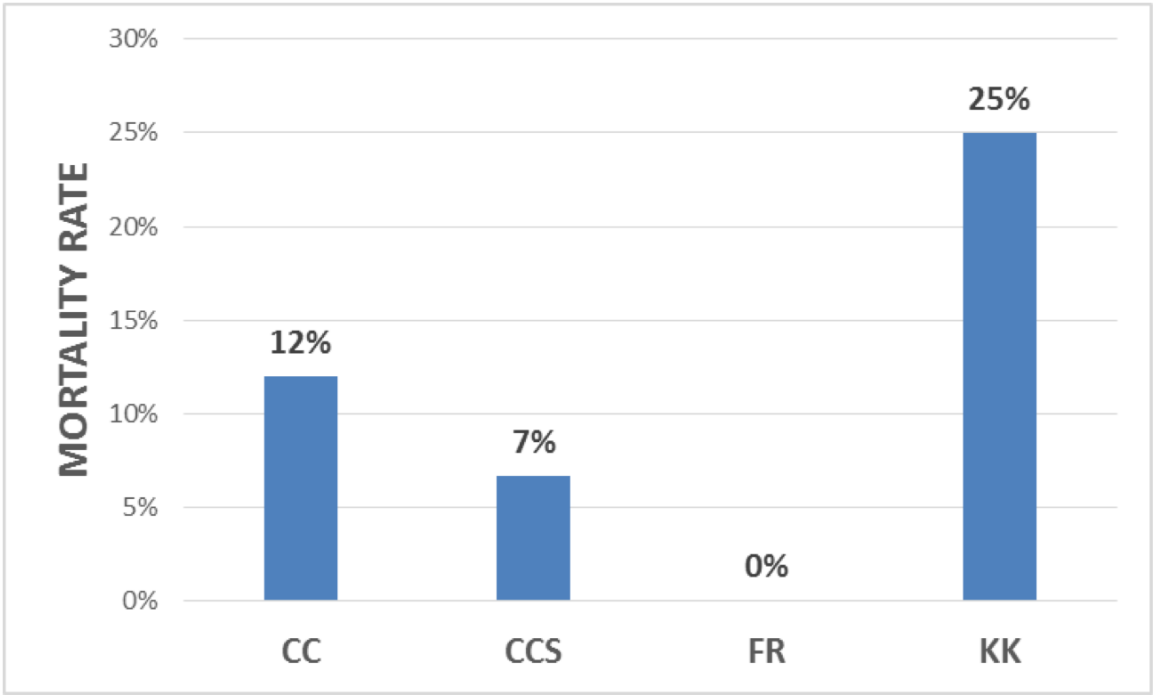
Gather production data

- 5 years of data for the Cornish Cross
- 4 years of data for the Slow Cornish Cross
- 1 year trial each for Kosher Kings and Freedom Rangers



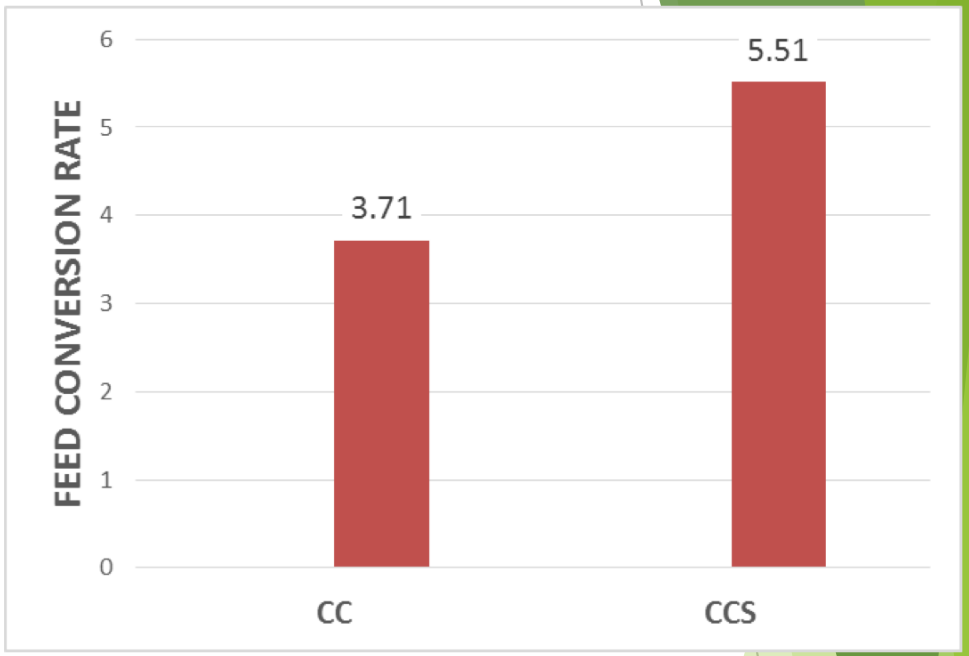
More production data: mortality rates

Which breed would you choose?



Production data: feed conversion rate

- Depicts pounds of feed needed per lb of carcass weight.
- Nearly 50% higher feed costs for the Slow Cornish Cross.



Once you have a budget, you can use it to calculate your breakeven price

- Price needed to cover the costs of production
  - Total cost/expected yield
- Example: what price will cover my costs?
  - Total costs = $2337 per year for a 15-hen flock, including variable and fixed costs, and amortized values for capital investments (hens, housing, equipment)
  - Yield = 387.5 dozen

Divide total costs by yield:

$2337/387.5 dozen = $6.03 per dozen is your break-even price

How much do I need to charge to cover all my costs?

Breakeven cost of production is calculated as the cost that covers all costs of production, including annualized fixed costs Thus, profit is zero at this point. You have just broken even.

	Cornish Cross	Cornish Cross Slow
Variable Costs ($/Chicken)	$21.83	$24.95
Fixed Costs ($/Chicken)	$2.70	$2.63
Total Costs ($/Chicken)	$24.53	$27.58
Returns over Variable Costs ($/Chicken)	$2.70	$2.63
Returns over Total Costs ($/Chicken)	$0.00	$0.00

Budget Exercises: Calculating Break-evens

- What would be the break-even price for your broilers if you have $1500 in total costs and you have 100 broilers to sell?
  - $1500/100 = $15
- If 25 of your broilers die before you can butcher them, what would your breakeven price be?
  - $1500/75 = $20
- If you estimate that your 100 broilers are currently averaging 4 lb carcasses, and your total costs will be $2000, what will you need to charge to cover your costs?
  - $2000/400 lb = $5 per lb

The bottom line: Economic sustainability

- What if you can't get $5 per lb? What will you do?
  - Generally, the rule is to go ahead and harvest your crop so long as you cover your operating expenses.
  - However, a business that does not cover its costs is unsustainable in the long run. You can't keep subsidizing an enterprise that is operating at a loss.
  - Go back to the drawing board and figure out a budget that will work for you!

PNW 665

Break-even Analysis of Small-Scale Production of Pastured Organic Poultry

Kathleen Painter, Elizabeth Myhre, Andy Bary, Craig Cogger, and Whitney Jemmett

Bulletin can be found by searching for PNW 665 or directly at
www.tinyurl.com/OrganicBroilerEconomics
Spreadsheet can be found at
www.tinyurl.com/OrganicBroilerBudget

Suggested exercise:
Download the Organic Broiler Budget above.
See how to adjust costs in the Input tab.
Change your land rent. See what happens in the Summary tab.
Go to the Chicken Tractor tab. Change some of the prices and see how the annual depreciation and interest changes.
Go the Example tab and create your own budget.

Questions?