Olericulture – Hort 320
Lesson 10, Enterprise Budgets

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OH MY STARS! WHAT ARE YOU SAVAGES DOING?! WE'RE HERBIVORES!!
METRO ZOO
SCOTT HILBURN
OH... CARRY ON.
HERB
9/22
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Purpose of Enterprise Budgets

To estimate projected costs, revenue, and net returns for a single enterprise to assess feasibility or profitability of current or potential enterprises

How much will I make on sweet corn and potatoes?

Purpose of Enterprise Budgets

Planning tool to test out new ideas and compare enterprises to identify best ones

How profitable would pumpkins be?

How do pole beans compare to sweet peas?

Purpose of Enterprise Budgets

Estimate needs for inputs, facilities, storage, and marketing:

- For your crops:
  - How much fertilizer, seed, chemicals do you order?
  - Do you need new/bigger equipment?
  - How much grain storage and marketing do need?
- For your livestock:
  - How much feed and bedding do you need?
  - How much can you grow and how much buy?
  - What about hired labor?

Enterprise Budgets

Usually “Enterprise” = a crop or livestock

Corn, soybeans, wheat, alfalfa

Dairy, feeder beef, cow-calf, hogs

Specialty crops: sweet corn, trout, mink

Conventional vs no-till

Grazing vs. confinement

Enterprise Budgets

Use a constant base unit

- Crops = 1 acre Livestock = 1 head

Allows comparison across enterprises

- Compare wheat to corn and soybeans
- Compare farrow-to-finish to finishing only

Each enterprise budget a “Lego”

- Snap “Legos” together to make your farm

Parts of Enterprise Budget

Revenues – Costs = Returns

No formal structure as for balance sheet or income statement

Cost categories used

- Variable/Operating Costs
- Fixed/Ownership/Overhead Costs

Hybrid variety type.
40 acres farmed.

				Total
PRODUCTION	**Units**	**Price**	**Quantity**	**$/Acre**
Jamboree	Pound	$ 0.11	20000	$ 2,200.00
Other Income	Acre	$ -	0	$ -
Total Receipts				**$ 2,200.00**
OPERATING INPUTS	**Units**	**Price**	**Quantity**	**$/Acre**
Watermelon Seed	000/acre	$ 54.15	2.40	$ 129.96
Fertilizer	Acre	$ 82.35	1	$ 82.35
Disease Control	Acre	$ 151.52	1	$ 151.52
Insect Control	Acre	$ 53.97	1	$ 53.97
Weed Control	Acre	$ 31.78	1	$ 31.78
Hoeing Labor	Hrs.	$ 10.50	9.00	$ 94.50
Pruning Labor	Hrs.	$ 10.50	4.00	$ 42.00
Harvesting/Marketing	Acre	$ 920.00	1	$ 920.00
Annual Operating Capital	Dollars	6.50%	239.76	$ 15.58
Machinery Labor	Hrs.	$ 10.50	3.70	$ 38.85
Irrigation Labor	Hrs.	$ 10.50	0.22	$ 2.31
Custom Hire	Acre	$ -	0	$ -
Machinery Fuel, Lube, Repair	Acre	$ 56.07	1	$ 56.07
Irrigation Fuel, Lube, Repair	Acre	$ 26.49	1	$ 26.49
Other Expense	Acre	$ 387.50	1	$ 387.50
Total Operating Costs				**$ 2,032.88**
Returns Above Total Operating Costs				**$ 167.12**
FIXED COSTS	**Units**	**Rate**		**$/Acre**
Machinery/Irrigation	$/value			
Interest at	Dollars	6.40%		$ 168.99
Taxes at	Dollars	1.00%		$ 27.69
Insurance	Dollars	0.60%		$ 16.21
Depreciation	Dollars			$ 185.77
Land	$/acre	$ -		
Interest at	Dollars	0.00%		$ -
Taxes at	Dollars	0.00%		$ -
Total Fixed Costs				**$ 398.66**
Total Costs (Operating + Fixed)				**$ 2,431.54**
Returns Above All Specified Costs				**$ (231.54)**

Caddo County - South-Central OK
Owned equipment

Owner-Operator

Break-Even (B-E) Analysis			
B-E Yield at $/lb.	**0.11**	**B-E Price at lbs./acre**	**20000**
Above Operating Costs (Lbs.)	18481	Above Operating Costs	$ 0.102
Above Total Costs (Lbs.)	22105	Above Total Costs	$ 0.122

Parts of Enterprise Budget

- Machinery costs
  - Split into fixed and variable costs?
  - Lump together into own category?
- Opportunity Costs
  - Which ones included, which ones ignored
- Time line version: Planting Costs, Harvest Costs

Examples

Illustrate diversity in enterprise budgets
All for Corn following Soybeans

Iowa: “Crop Production Cost Budgets”
www.extension.iastate.edu/agdm/crops/pdf/a1-20.pdf

Wisconsin: “Crop Enterprise Budget”
http://www.cdp.wisc.edu/wk1/Corn%20after%20Soybeans%20Budget%20for%20Wisconsin.xls
http://www.aae.wisc.edu/mitchell/Corn%20Soybeans%20Small%20Grains.xls

Main point: No “right” way to do enterprise budget

Enterprise Budgets and You

Costs and returns to the same enterprise vary greatly among producers

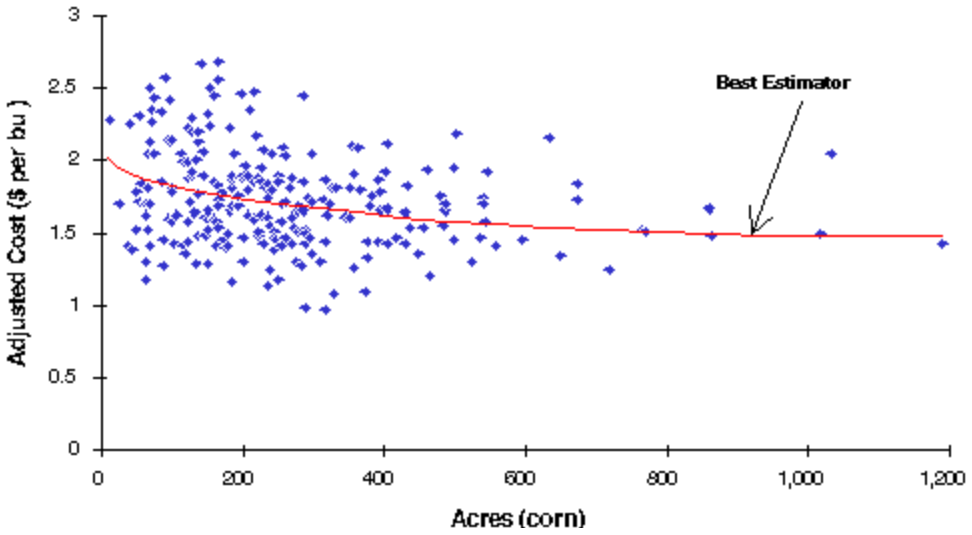
Lots of example enterprise budgets and returns projections available

Do not accept someone else's enterprise budget for the cost and returns for growing corn, soybeans, dairy, beef, etc. as your costs

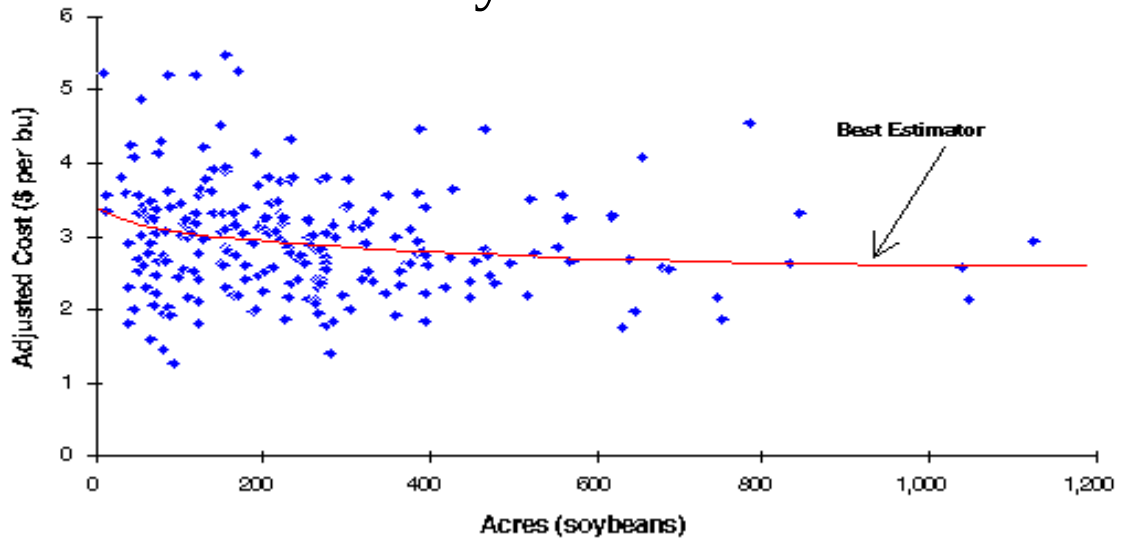
You need to know your own costs, not someone else's estimate or the typical costs

Minnesota Data for 1996

Corn



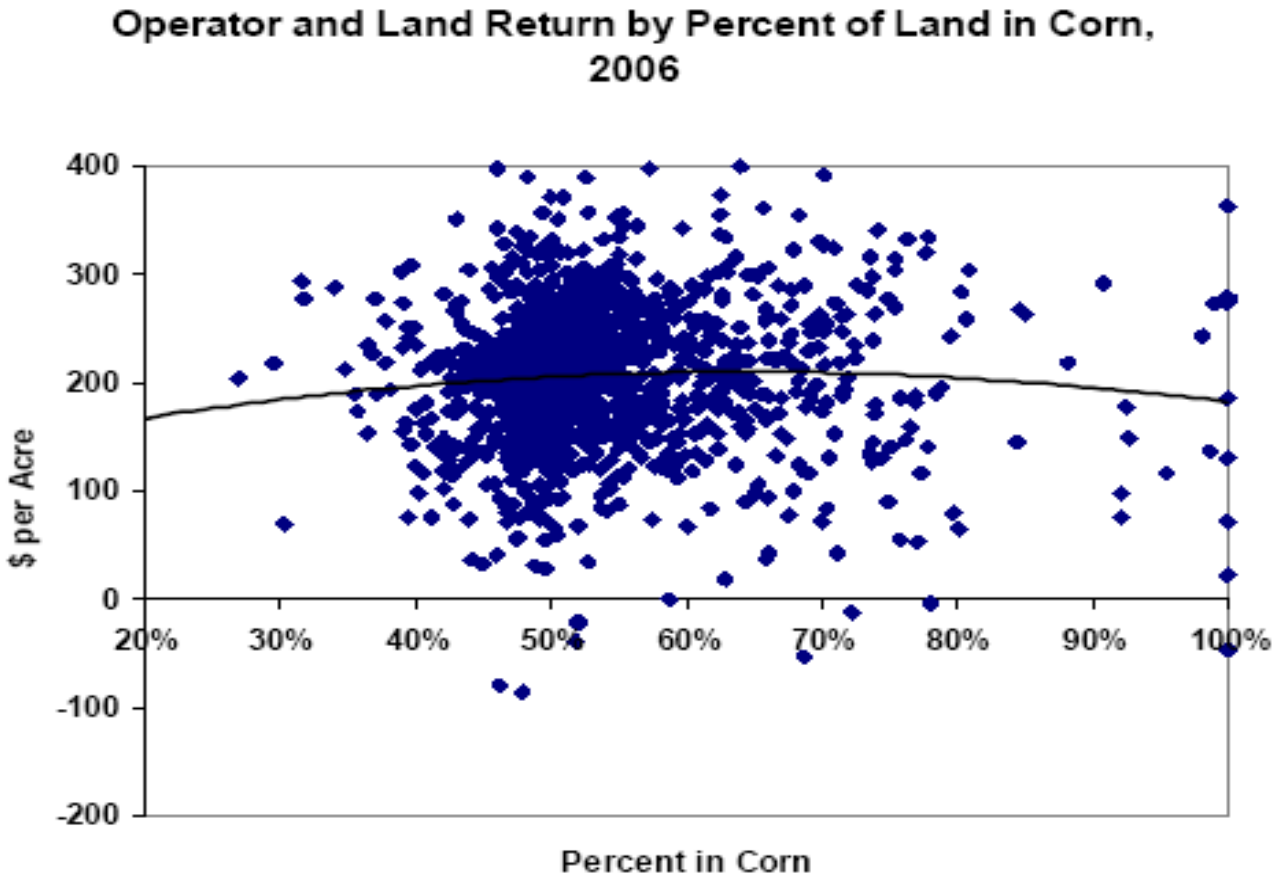
Soybeans



Source: Kent D. Olson and Heman D. Lohano. 1997 “Will the Real Cost of Production Please Stand Up?” Minnesota Agricultural Economists No. 687

http://www.extension.umn.edu/newsletters/ageconomist/components/ag237previous.html

Illinois Data for 2006



Source: Gary Schnitkey "Crop Production Cost and Rotation Decisions"

http://www.farmdoc.uiuc.edu/IFES/2007/presentations/Farm Economic Summit - Schnitkey.pdf

Enterprise Budgets

Concept not hard:

Revenues – Costs = Returns

Revenue easy to estimate: Price x Yield

- If you already grow it, you should know
- For common crops and livestock, prices and typical yields available from many places

Variable input costs easy too

- If you already grow it, you should know
- Price x quantity use per acre
- Internet or call around for prices, typical use rates

Enterprise Budgets

Cost estimation difficult for machinery, buildings, facilities, equipment, etc.

What does it cost to chisel plow a field?

What is the annual cost of a dairy barn?

What portion of tractor repair should be allocated to soybean production?

Machinery Costs as an Example

Machinery Cost Concepts

Substantial component of costs (25%-40%)

Difficult to measure/estimate: user specific

Variable Cost, Use-Related Cost, Operating Cost

- Costs due to using the machinery
- Fuel, lube, maintenance, use-related repairs and labor

Fixed Cost, Time-Related Cost, Overhead Cost

- Costs paid whether you use the machinery or not
- Interest, insurance, taxes, housing

Depreciation: both a variable and fixed cost

Machinery Costs

Best method: keep accurate records of machinery use (hours) for each enterprise, expenses (fuel, repairs, maintenance), and current market value and use them to determine your Actual Machinery Costs for each enterprise

- Most farmers don't do this

Estimate Machinery Costs if you do not have records or you are looking at new options

- Economic Engineering Approach
- Adjust Custom Rates

Economic Engineering Approach

Estimate machinery costs based on careful engineering data collection

Use the machinery and carefully document

- Repairs, maintenance, fuel/lubrication
- speed, turning time, labor

Develop formulas to estimate fixed and variable machinery costs

Market data and survey of used machinery buyers/sellers to develop formula for machine values as they age

Main Idea

Fixed Costs: depreciation, interest, taxes, insurance, housing

Variable Costs: repairs and maintenance, fuel, lubrication, labor, (timeliness)

Usually simple factors:

For example: 1% of purchase price for cost of insurance and housing

Fuel = 0.044 x PTO HP x hours of use x fuel price

Lubrication = 0.15 x Fuel Cost

Repairs and maintenance = % x new purchase price, with % adjusted for age or total use hours

See the publications for more information

Machinery Cost Example

What does it cost to run a chisel plow?

Lazarus and Selley 2005 (23 ft): $6.81/ac

Iowa 2005 Custom Rate $11.05/ac

Wisconsin 2007 Custom Rate : $14.70/ac

Indiana 2004 Custom Rate $11.78/ac

South Dakota Custom Rate: $10/ac

Missouri 2003 Custom Rate: $12.10/ac

SW Minnesota 2001: $10.83/ac

Why not just use Custom Rates?

Custom rates not good estimates of typical farmer costs

- Run over more acres, spread fixed costs
- Volume discounts or search for best price, so lower purchase price
- More efficient operators
- Family/friends not charge enough
- Discounted because not perfect timing

Break-Even Yield and Price

What yield or price do you need to break even on the enterprise?

Break-Even Yield: At a given price, the yield needed to cover all costs

Break-Even Yield = Total Cost/Output Price

Break-Even Yield and Price

What yield or price do you need to break even on the enterprise?

Break-Even Price: For a given average yield, the price needed to cover all costs

Break-Even Price = Total Cost/Average Yield

Allocating Overhead Costs

Farms overhead costs must be allocated across all enterprises

- Workshop costs, membership dues, insurance, legal fees, accounting costs, taxes, utilities, office costs, etc.

These costs should be declared on Schedule F, with depreciation tracked in farm records

Enterprise budgets often miss these or similar costs

Whole Farm Budget

Budgeting system based on Schedule F to allocates ALL costs

3 year average of costs for each Schedule F category to "avoid" accrual adjustments

Income Statement: better base to allocate costs from, but not all farms have

Main idea: Allocate % of Schedule F cost to each enterprise, all costs allocated

WSU Resources

http://extecon.wsu.edu/pages/Enterprise_Budgets