

Production Economics

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What is Production Economics?



1. Production

➤ What you produce

- Product

2. Marketing

➤ How much you produce

- Pregnancy Rates
- Weaning Rates
- Weaning Weights

3. Costs

➤ What you sell

- Product

➤ When you sell

- Time of year

➤ Where you sell

- Sale barn
- Off farm
- Directly to buyer

➤ Production Costs

- Feed
- Hay
- Vet
- Pasture

➤ Marketing Costs

- Market seasonality
- Market volatility
- Commissions
- Advertising

Which one do we have the most control over?

How to analyze costs

- Goat Budget

- Income

- Money received for goods and services
 - Goats sold

- Operating or Cash Expenses

- Money spent on items that will be used during the production year
 - Feed
 - Medicine
 - Supplies

- Fixed Expenses

- Money spent on items that will be used during multiple production years.
 - Breeding animals
 - Tractors
 - Fencing

Income

- Cash Expense

Net Cash Income

If net cash income is positive have you made a profit?

Income

- Cash Expenses

- Fixed Expenses

Net Income

Meat Goat Budget 50 Does



<u>Income</u>	<u>Total</u>	<u>Per Doe</u>
Wether Kids	4,213	84.26
Doe Kids	3,552	71.04
Cull Aged Does	270	5.39
Cull Replacement Doe Kids	<u>378</u>	<u>7.56</u>
Total Income	\$8,412	\$168.24



<u>Cash or Operating Expenses</u>	<u>Total</u>	<u>Per Doe</u>
Feed		
Hay	1,638	37.26
Supplement	1,855	37.10
Guard Animal	204	4.08
Salt/Mineral	29	0.57
Vet (Herd Health)	422	8.44
Fuel & Repairs	46	0.92
Marketing (Commissions)	648	12.96
Annual Operating Capital	<u>131</u>	<u>2.62</u>
Total Operating Expenses	\$4,972	\$99.44
Returns Above Operating Costs	\$3,440	\$68.80

Meat Goat Budget 50 Does



<u>Fixed Expenses</u>	<u>Total</u>	<u>Per Doe</u>
Interest	580	11.60
Depreciation	2,335	46.70
Taxes and Insurance	<u>155</u>	<u>3.10</u>
Total Fixed Costs	\$3,070	\$61.40
Income	\$8,412	\$168.24
Operating Expenses	-\$4,972	-\$99.44
Fixed Expenses	<u>-\$3,070</u>	<u>-\$61.40</u>
Returns above all specified costs	\$370	\$7.40

Breakeven Analysis



Breakeven price to cover operating expenses

$$\begin{aligned} &\text{Operating Expenses/ lbs. sold} \\ &\$4,972 / 3,850 = \$1.29 \end{aligned}$$

OR

$$\begin{aligned} &\text{Operating Expenses/head sold} \\ &\$4,972 / 70 = \$71.03 \end{aligned}$$

Breakeven price to cover fixed expenses

$$\begin{aligned} &\text{Total Expenses / lbs. sold} = \\ &\$8,042 / 3,850 = \$2.09 \end{aligned}$$

OR

$$\begin{aligned} &\text{Total Expenses / head sold} = \\ &\$8,042 / 70 = \$114.89 \end{aligned}$$

Expenses

- What is the largest expense on a livestock operation?
 - Feed
 - Typically more than 65% of the budgeted expenses
- You can break feed down further into 3 categories.
 - Pasture
 - Hay
 - Supplement (i.e. Grain or other feed stuffs)

Pasture and Hay

Question: Is it more cost efficient to graze pastures or feed hay?

Answer: Graze

Then why do many producers feed hay for more than 100 days?

Forage Budget

Animal Needs
(125 lbs. goat)

$$\frac{50}{\text{\# of animals}} \times \frac{4.5}{\text{Expected Forage Need (lbs./day)}} = \frac{225}{\text{Pounds Forage Needed}}$$

$$\frac{\text{Pounds Forage Needed}}{\text{Utilization Factor}} = \frac{375}{\text{Total lbs. Forage Needed}}$$

Forage Production

$$\frac{40}{\text{\# of acres}} \times \frac{2,000}{\text{Expected Forage Production (lbs./acre)}} = \frac{80,000}{\text{Total lbs. Available Forage}}$$

Grazing Days

$$\frac{\text{Forage Available (lbs.)}}{\text{Forage Needed (lbs./day)}} = \frac{213}{\text{Number Grazing Days}}$$

Hay Costs

Feeding Days	<u>365</u>	Bale Size	<u>5 x 5</u>	Cost per Lbs. <u>\$0.035</u>
Grazing Days	<u>213</u>	Bale Weight	<u>1,000</u>	
Hay Feeding Days	<u>152</u>	Bale Value	<u>\$35</u>	

Hay Feeding Cost

<u>4.5</u> Lbs. Hay Needed	÷	<u>50%</u> Utilization Factor	=	<u>9.0</u> Lbs. Hay/Goat/Day	X	<u>\$0.315</u> Cost \$/Lbs.	=	<u>\$0.315</u> Cost \$/Goat/Day
<u>Cost \$/Goat/Day</u>	X	<u>Hay Feeding Days</u>	=	<u>\$47.88</u> Cost for Hay	X	<u>50</u> # of Goats	=	<u>\$2,394</u> Total Cost
		<u>90</u> Hay Feeding Days	=	<u>\$28.35</u> Cost for Hay	X	<u>50</u> # of Goats	=	<u>\$1,418</u> Total Cost

What about Other Feed Costs

- Have you ever evaluated your feed based upon nutrient cost instead of per bag/ton cost.
 - Many producers will automatically buy the cheapest feed per sack or ton on not consider what it cost per pound of protein and TDN.
- What about bulk vs. bag
 - How long to make back the cost of the feed buggy.



Production Counts

- How many kids/doe do you need to sell to remain profitable?

Weaning %	Returns/Doe			
	\$1.50	\$1.75	\$2.00	\$2.25
120%	\$81	\$95	\$108	\$122
130%	\$88	\$102	\$117	\$132
140%	\$95	\$110	\$126	\$142
150%	\$101	\$118	\$135	\$152
160%	\$108	\$126	\$144	\$162
170%	\$115	\$134	\$153	\$172
180%	\$122	\$142	\$162	\$182

Marketing

- Every producer needs to develop their own marketing plan.
 - A producer can have more than one marketing plan.
 - A producer needs to be flexible with their marketing plan.
- A marketing plan is going to depend on the three W's.
 - What
 - Knowing what type of goat you intend to sell helps you determine which market you should sell at.
 - When
 - Most producers assume that prices follow ethnic holiday schedules.
 - Could there be a different seasonality pattern to goat prices in your area?
 - What about the volatility (week to week price changes) of prices?
 - Where
 - What is the availability of goat markets in your area?
 - Is there a better market just a little further down the road?

What type of Goats

- What type of goats do you plan to sell?
 - Market or Replacement
 - Market implies selling them at weaning
 - Replacement implies keeping them longer and marketing them directly off of the farm.
 - Size
 - 40 – 60 Lbs
 - 80 – 100 Lbs
 - Age
 - At weaning
 - 60 days after weaning
 - Sex
 - Bucks or wethers
 - Is there a discount for intact males at your market
 - Does or replacement does

Matching Production with Marketing

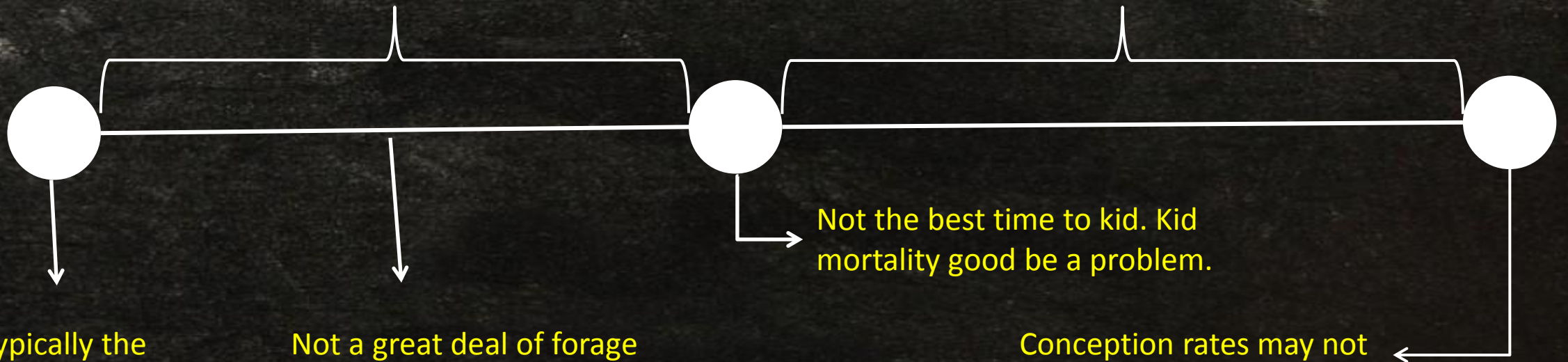
Sell in March
@ weaning

90 – 100 days

Kid in late November
and December

150 days

Breed in July



Matching Production with Marketing

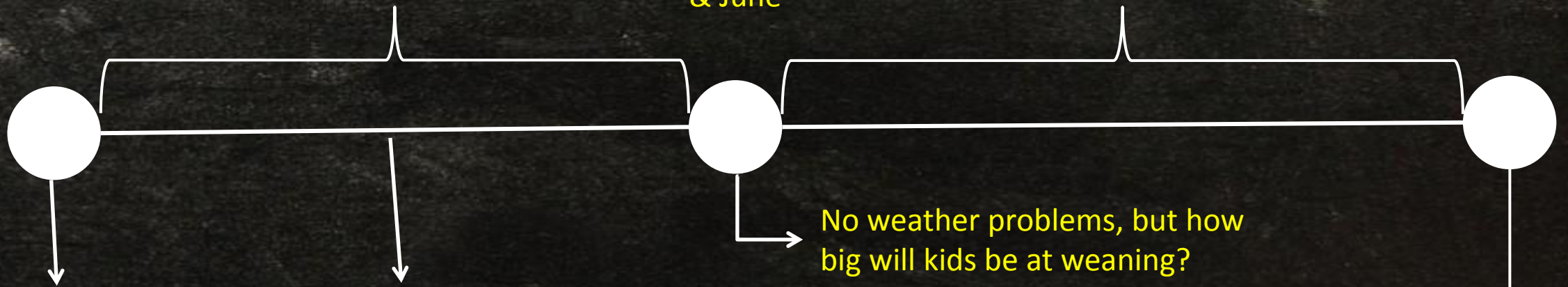
Sell in Aug/Sep
@ weaning

90 – 100 days

Kid in May
& June

150 days

Breed in
December



Where to Sell

1. Livestock Auctions

- Most common and easiest
- Must pay commission
- At the mercy of the market on that day.
- May not receive best price for your best animals.

2. Off the farm

- Can receive the price you want
- Deal with the public
- No commission

3. Directly to Order Buyers/Processors

- Need to know what you have and what it is worth.
- No commissions

4. Producer Sales (Replacement Does and Bucks)

- Typically receive good money for good production.
- Usually for seed stock producers.
- Higher commission costs.

5. On Line Auctions

- Typically meant for purebred or show animals.
- Could have potential for replacement breeding stock

Take Away Message

- Concentrate on those things that you have the most control over.
- Take advantage of low hanging fruit.
- Production and Marketing are important, but controlling costs are critical.
- Use a sharp pencil.

OSU Meat Goat Website



- We have a meat goat website, Face Book page and YouTube channel.
 - Market Outlook Presentations
 - Educational Videos
 - Summary of educational programs offered by OSU
 - OSU Meat Goat Manual
 - OSU Meat Goat Boot Camp

www.meatgoats.okstate.edu

