BUILDING A PROFITABLE AND SUSTAINABLE GRASS-BASED BEEF SYSTEM

FROM $CRATCH

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BUILDING A GRASS SYSTEM FROM $CRATCH

Cost Analysis Based On:

- 20 acre operation (renovated existing pasture)
- 15 head per year (1.3 acres per head)
- Long term investments
  - Pasture renovation and fencing costs spread over 5 years
- Some stored forage produced on farm
- All field work, forage harvesting, and cattle hauling hired on custom basis

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Evaluate Your Current Resources

Do you have land?

Does your land have pasture?

What is the quality of your pasture?

Do you have cattle?

Are you currently marketing beef?

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What is the status of the land?

Pasture or Cropland

What renovations/improvements are necessary and what is the cost?

*Most existing pastures will not sustain a grass finishing operation

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How much will establishing pastures cost? Conventional Methods

	$/Acre
Seedbed prep.	$20 (Disking/Cultipacking)
Fertilization	$50
Seeding	$20 (Broadcast/Cultipacking)
Seed	$70 (Grass/Legume Mix)
Total	$160

*Erosion can be an issue

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How much will establishing pastures cost?
No Till Methods

	$/Acre
Weed Control	$30 (Herbicide Burndown)
Fertilization	$50
Seeding	$17 (No-Till Drill)
Seed	$70 (Grass/Legume Mix)
Total	$167

*Previous crop species can pose problems

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How much will renovating pastures cost?

	$/Acre
Fertilization	$50
Weed control	$35 (Broad leaf Control)
Seeding	$17 (No-Till Drill)
Seed	$40 (Grass/Legume Mix)
Total	$142/acre

*Limited by existing species

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Pasture Maintenance Costs

Fertilization	$25
Weed Control	$20(mowing or spraying)
Overseeding	$15(broadcast legumes/grass)
Total	$65 per acre

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Land

Grass

Facilities

Facilities for working cattle at Boston Farm – Santa Fe River Ranch, include large group holding pens, curved adjustable width alley, hydraulic chute mounted on a scale, and eight pens for sorting cattle after working.

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Fencing

Perimeter needs to be permanent

- Electric high tensile is the most maintenance free, efficient type

Interior can be temporary/portable

- Plastic or fiberglass posts and portable poly wire

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Fencing Costs

Perimeter (3,750 ft @ $2.50/ft.)	$9375
■ (Based on a 20 Acre Square)	
Interior	$150
■ Posts, Wire, etc…	
Charger	$200
Gates	<u>$200</u>
Total	$9925

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Water System

Utilize Existing Source

- Well
- Pond

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Land

Grass

Facilities

Cattle

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Cattle

Purchase calves at weaning(7-9 months old)

- Quality animals from known sources
- Purchase from forage based operations

Graze for 12-14 months

- Highest quality pasture and stored forage

Harvest at 19-22 months of age

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Cattle Costs

Purchased Calf 500 lbs.	$800 (@$1.60/lb)
Medical/Salt/Mineral	$50
Trucking	$25
Total	$875 per head

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Stored Forage

100 days @ 24 lbs(DM) per day = 1.2 tons per head

Two options:

1. Harvest excess pasture in spring

2. Purchase hay off farm

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Stored Forage Costs

Excess pasture harvested

- $75 per ton x 1.2 tons = $90 per head

Hay purchased off farm

- $175 per ton x 1.2 tons = $210 per head

Issues to Consider If You Want Cows

- **Mature Cow Size**
- **Milk Production**
- **Reproductive Performance**
- **Carcass Traits**

Beef Cow "Efficiency"

The optimum use of your specific set of resources toward a profitable and sustainable level of production.

Beef Cow "Efficiency"

Total pounds of weaned calf per pound of female exposed (whole herd perspective)?

% of Maternal Body Weight Weaned (individual animal perspective)? Example: 500/1200 vs 650/1500 (42%)

Total pounds of calf weaned per pound of feed consumed?

Pounds of beef produced per acre?

It All Comes Down to Energy

Can you provide sufficient calories, in a cost-effective manner, to support the machine you have selected and bred?

In a grass-based system the question becomes, do you have a year-round pasture/forage supply of sufficient quantity and quality to support the genetic potential of your cow herd and their offspring?

Priority of energy use by the cow

1. Basal metabolism

2. Grazing and other physical activities

3. Growth

4. Supporting basic energy reserves

5. Maintaining an existing pregnancy

6. Milk production

7. Adding to energy reserves

8. Estrous cycling and initiating pregnancy

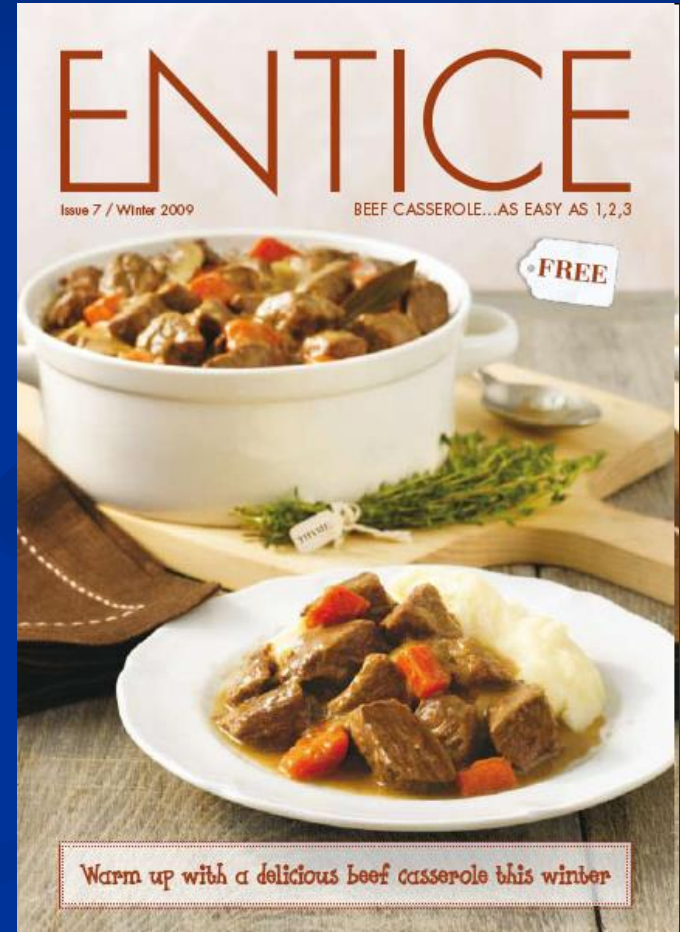9. Storing excess energy

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Land

Grass

Facilities

Cattle

Market

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Beef Marketing Costs

Processing	$450/hd
Transport/Delivery	$20/hd
Advertising	$200/yr
Storage	
Freezer	$50/yr
Electric	$50/yr

ENTICE

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BEEF CASSEROLE...AS EASY AS 1,2,3

FREE

Warm up with a delicious beef casserole this winter

BUILDING A GRASS SYSTEM FROM $CRATCH

Land

Grass

Facilities

Cattle

Market

Labor

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Labor

Production	30.4 hours
5 minutes per head per day @ 365 days	
Marketing (per head)	<u>2 hours</u>
Total	32.4 hours
Labor Cost @ $10.00 per hour	$324 per hd.

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Adding up the costs:

Pasture
Fencing
Animals
Stored Forage
Marketing
Processing
Labor

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Pasture Renovation	$37/hd.
Fencing	$130/hd.
Cattle	$875/hd.
Stored Forage	$150/hd.
Pasture Maintenance	$65/hd.
Marketing	$40/hd.
Processing	$450/hd
Labor	$324/hd

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Grand Total of Production and Marketing Costs =

$2071/head

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End Product

1150 lbs. Live Wt.

633 Hot Carcass Wt. (55%)

380 lbs. Retail Product (60%)

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Beef Pricing Determination

GOAL = 20% Profit from Investment

$2,071 x 120% = $2,485 per head revenue goal

$2,485 per head =

$3.93/lb HCW

$6.54/lb Retail Product

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What Have We Learned From This 20 Acres and 15 Grass Finished Beeves?

GRASS IS NOT FREE

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What Have We Learned From This 20 Acres and 15 Grass Finished Beeves?

FENCES ARE EXPENSIVE

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What Have We Learned From This 20 Acres and 15 Grass Finished Beeves?

PROCESSING COSTS A LOT OF MONEY

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What Have We Learned From This 20 Acres and 15 Grass Finished Beeves?

GRASS FINISHED BEEF TAKES A LONG TIME TO PRODUCE

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What Have We Learned From This 20 Acres and 15 Grass Finished Beeves?

HOW MUCH MONEY YOU MAKE DEPENDS ON WHAT YOU CAN CHARGE FOR YOUR BEEF

Farm Layout and Property

Total of 595 acres

- 100 acres of river bottom
- 150 acres of gently rolling terrain
- 165 acres flat, well drained alfalfa
- 180 acres for hay

Location

- **Frederick County Maryland**

Approximately:

- **50 miles west of Baltimore, Maryland**

- **45 miles northwest of Washington, D.C.**

The Jorgensen Family Foundation

- **Created in 1997 to conduct beef and forage research for the benefit of farmers in the Mid Atlantic region.**

- **Hedgeapple Farm is the centerpiece of the foundation and serves as a working model operation.**

- **Hedgeapple Farm focuses on grass fed beef production and direct marketing.**

Cattle Operation

Grass Finishing Program

- **Approximately 150 head per year**
- **Steers and Heifers Used**
- **Calves purchased at weaning from cooperator herds**
  - **Use HAF bulls**
  - **Follow HAF production protocol**

Cattle Operation

Genetic selection

- **All Angus**
- **Moderate framed**
- **Easy Fleshing**
- **High marbling**
- **Good Fertility**
- **Utilize EPD's for selection**

Grass Finishing Production

Growth

- **Phase 1 - Birth to Wean (8 months)**
  - 2.0 lbs/day
- **Phase 2 - Wean to Yearling**
  - 2.0 to 2.4 lbs/day
- **Phase 3 - Yearling to Harvest (X=22M)**
  - 1.8 to 2.2 lbs/day

Grass Finishing Production

Carcass Performance Averages (2009-2012)

- **Harvest Weight**
  - 1180 lbs. (Range of 980 to 1330 lbs.)
- **Harvest Age**
  - 22 months (Range of 19 to 24 months)
- **Yield Grade**
  - 2.2
- **Ribeye Size**
  - 10.9 (Target of 1 sq. in. of REA per 100 lbs of live wt,)
- **Quality Grade**
  - Steers: 79% Choice; 17% Select+
  - Heifers: 88% Choice; 12% Select+

Grass Finishing Economics

Averages (2009-2012)

- **Live Wt. = 1180**
- **Carcass Wt. = 649**
- **Retail Wt. = 389**
- **Farm Value = $1363.00 (@ $2.10/lb HCW)**
- **Processing Cost = $442/head**
- **Cost of Goods (retail) = $4.64/lb**
- **Retail Value $3,218.00**
- **Retail Value/lb = $8.27**
- **Margin = $3.63/lb or $1,412/carcass**
- **Total System Value = $2,775/head**

Do Customers Know How To Cook?

- Shoppers of all ages admit room for improvement

- More than half say their skills/knowledge could be much better or they need help

- Only 59% say they know how to select fresh meat

- Only 44% say they know how to prepare fresh meat

- How to marinate/spice: 63%

- How to cook to correct doneness: 45%

(2012 FMI Power of Meat Study)

Do Customers Know How To Cook? (Continued)

- Understand the nutritional content of poultry/meat: 79%

- Understand the USDA beef grading system: 43%

- Excellent opportunity to educate and win repeat customers

(2012 FMI Power of Meat Study)