

# Producing and Marketing Pasture-raised Geese in Vermont

Research supported by VGFA Mini-grant and  
NE-SARE, Summer 2014



Wesley Bascom and Suzanne Podhaizer  
Gozzard City at Provender Farm





**Wesley: Environmental Science B.A., design-build carpentry business, aspiring beginning farmer...**



A photograph of a woman in a plaid shirt and shorts jumping over a rustic wooden fence. In the foreground, a large flock of white geese with orange beaks is gathered. The scene is set in a grassy field with tall sunflowers and trees in the background under a clear blue sky.

**Suzanne: Chef/Owner of Salt Café, food radio-show host, journalist, fat is her favorite food**

# The wild goose chase to come...

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- Part I: Intro to our operation
  - Part II: Brooding
  - Part III: Pasture & feeding
    - Report from NE-SARE feeding study and VT Grass Farmers' Association grant
  - Part IV: Processing
  - Part V: Eating & marketing
    - Report from blind taste test
  - Part VI: Final thoughts
-



# Gozzard City at Provender Farm

## Provender Farm:

160 Acres

- ~ 100 acre woodland
- ~ 60 acre pasture

## Multiple Enterprises

- ~ vegetable farm
- ~ catering company
- ~ sugarbush
- ~ design/build
- ~ and us...

## Gozzard City:

- ~10 acres
- ~300 geese
- ~ brooder
- ~ nighhouse
- ~ processing facility





# The Golden Goose of Sustainability...

- Motivations for raising geese:
  - 75% - 90% of diet derived from foraging grasses / insects
  - Resistant to many common poultry diseases
  - Can co-exist with ruminants on a diversified farm

## History of Goose Production in 18th and 19th century agriculture

- Common on diversified farmsteads in Europe
- A unique product with excellent flavor

(Downtown Cabot?) ↩

19th century child care?






**Inspirational Material...**

- **2008 TED Talk with Dan Barber**



**Eduardo Sousa - Spain - Fig/Seed/Olive Silvopasture for Foie Gras**

<http://www.swide.com/food-travel/sustainable-foie-gras-from-spain-an-interview-with-eduardo-sousa-extremadura/2013/12/16>



# Do geese have a place in a regenerative farming system?

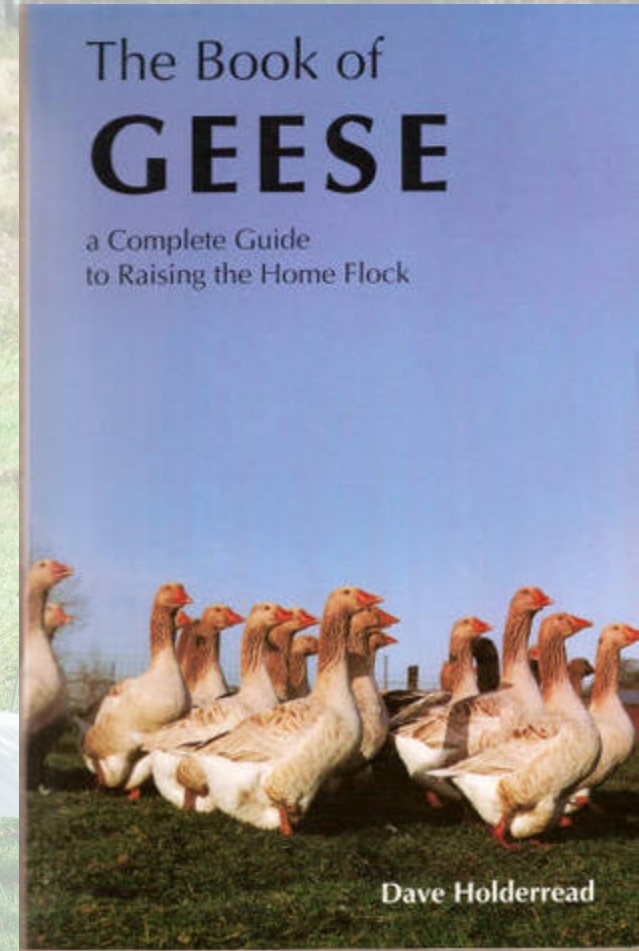
- How well do geese utilize forages in their diet?
- How does the taste of pastured goose compare with other waterfowl or pastured chicken?
- Can rearing geese be financially generative in Vermont?
  - Livable wage for the farmer's time?
  - Is there a market?
  - What directions lead towards profitability?





## 2014 Season at a glance:

- Year 2
  - 325 goslings total
    - Up from 125 in 2013
  - 10 acres of pasture
    - 24 wk 'extensive pasture' program
  - NESARE / VGFA Supported Data Tracking
  - On-farm Processing
  - Direct retail and restaurant wholesale customers





# Section II: Brooding Weeks 0 - 4

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- Goals

- Follow Holderread's recommendations:
  - Temperature regulation by week
  - Keep bedding dry
  - Grit Access
- < 1% mortality
- Clean and neat



**325 Day-old goslings** from Metzer Farms in California

# The Brooder

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- 2013
    - Small Shed + covered outdoor access.
    - Electric Heat Lamps
  - 2014
    - 28x52 ft hoop-house (1452 ft<sup>2</sup>)
    - Heat Lamps + Wood Stove
    - “Extra warm” zone expanded as they grew
    - Nipple waterers
    - Platform scale for weighing
-



# The first 4 weeks...

- Brooder temp < each week
- Access to grassy run
- Full access to grain
- Supplemental niacin in water
- Chopped hay & pine shaving bed
- **Careful observation**
  - Are they huddled?
  - Wet looking?
  - Calm or panicked sounds?
- **Mortality 2014 = 4%**





**At ~4 wks old - Geese become more water / rain resistant**

# Pasturing... Week 5 - 20

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- Daily Chores
- Infrastructure





Geese following Wesley to Pasture in the morning



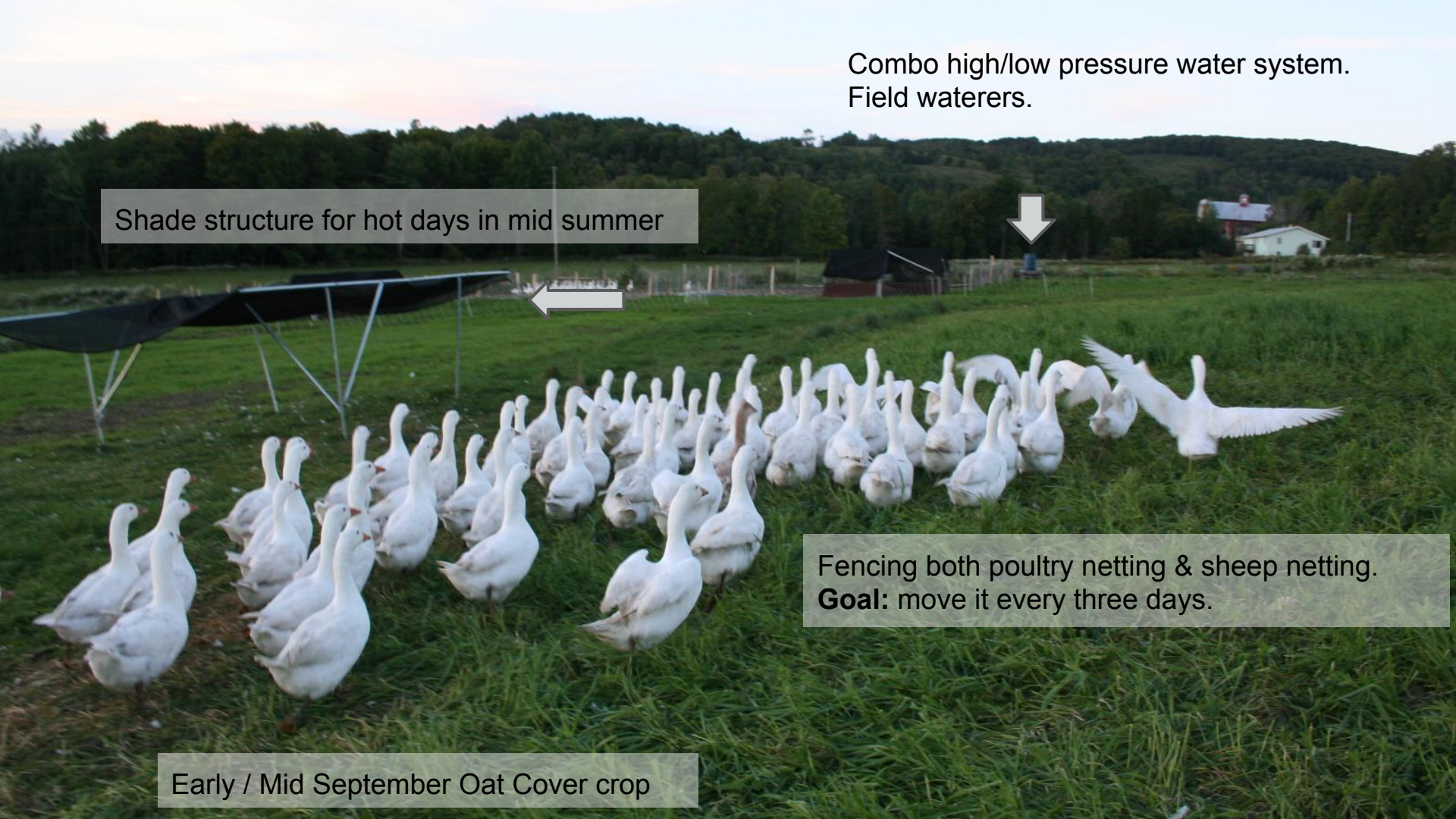
Combo high/low pressure water system.  
Field waterers.

Shade structure for hot days in mid summer



Fencing both poultry netting & sheep netting.  
**Goal:** move it every three days.

Early / Mid September Oat Cover crop

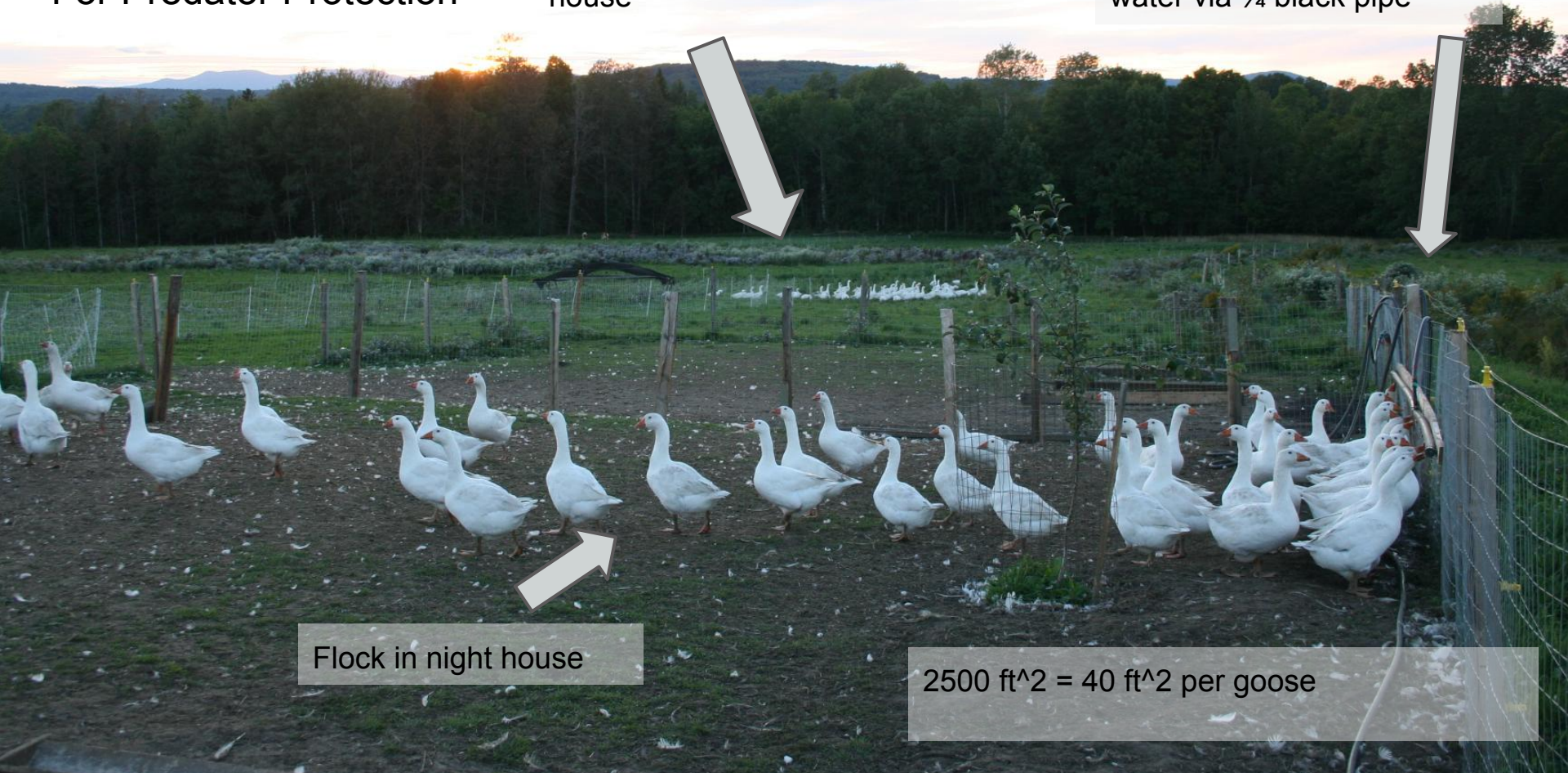




# Goose Night-House: For Predator Protection

Flock on pasture, soon  
to be returning to night  
house

Nipple Waterer supplied by  
low-pressure gravity-fed  
water via  $\frac{3}{4}$  black pipe



Flock in night house

$2500 \text{ ft}^2 = 40 \text{ ft}^2 \text{ per goose}$



A photograph of a group of white geese in a fenced enclosure at dusk. The geese are gathered near a wire mesh fence, with some looking towards the camera. The background shows trees and a sunset sky. Two text boxes are overlaid on the image: one at the top center and one at the bottom center.

Electric fence on outside deters predators

Wire mesh prevents geese from running through fence in night

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# 2014 Research



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## Weight gain and pasture

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# NESARE + VT Grass Farmer's Mini Grant: Economic and Environmental Analysis of Goose Production

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- Weekly tracking
    - Feed conversion
    - Weight gain
  - Trial local feeds for fattening period
  - Pasture and soil quality tracking
  - Enterprise analysis
-

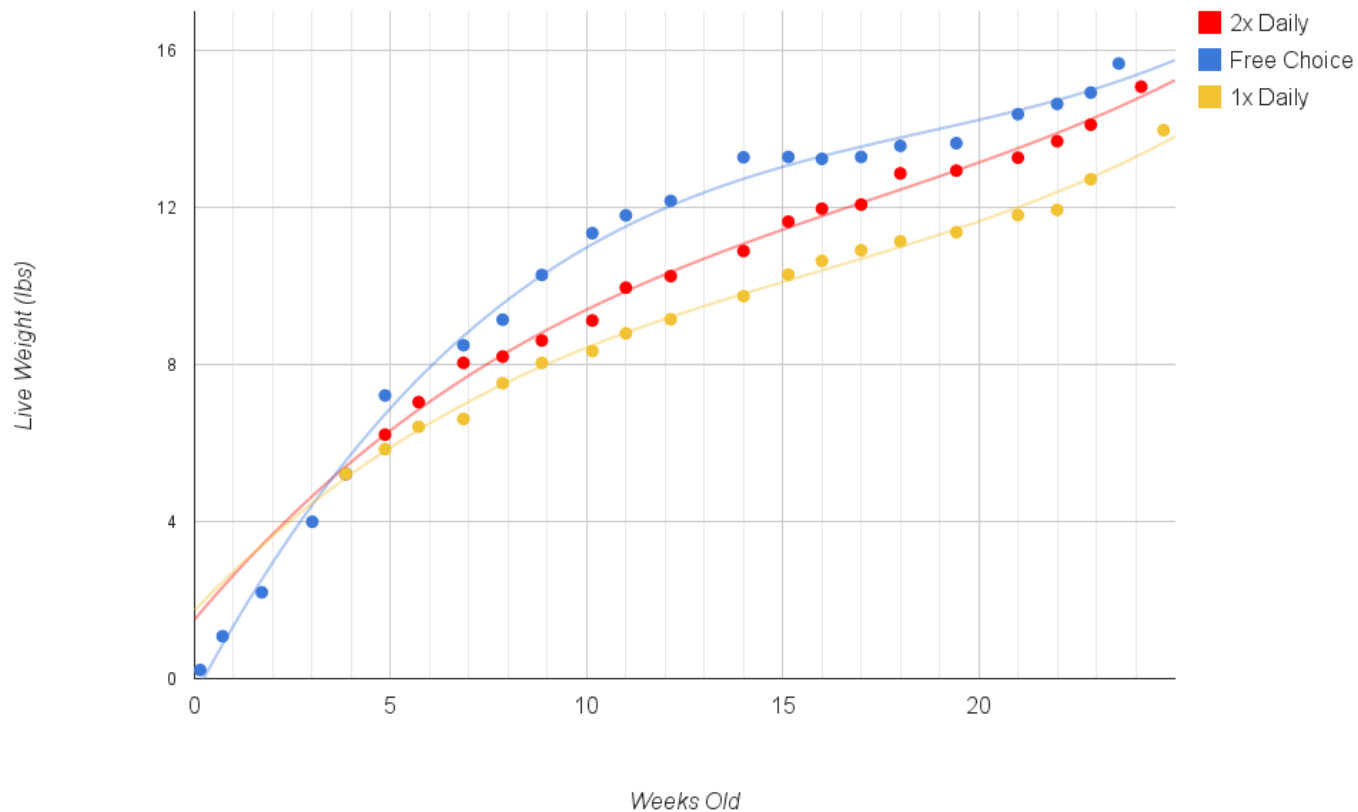


# Experimental Design

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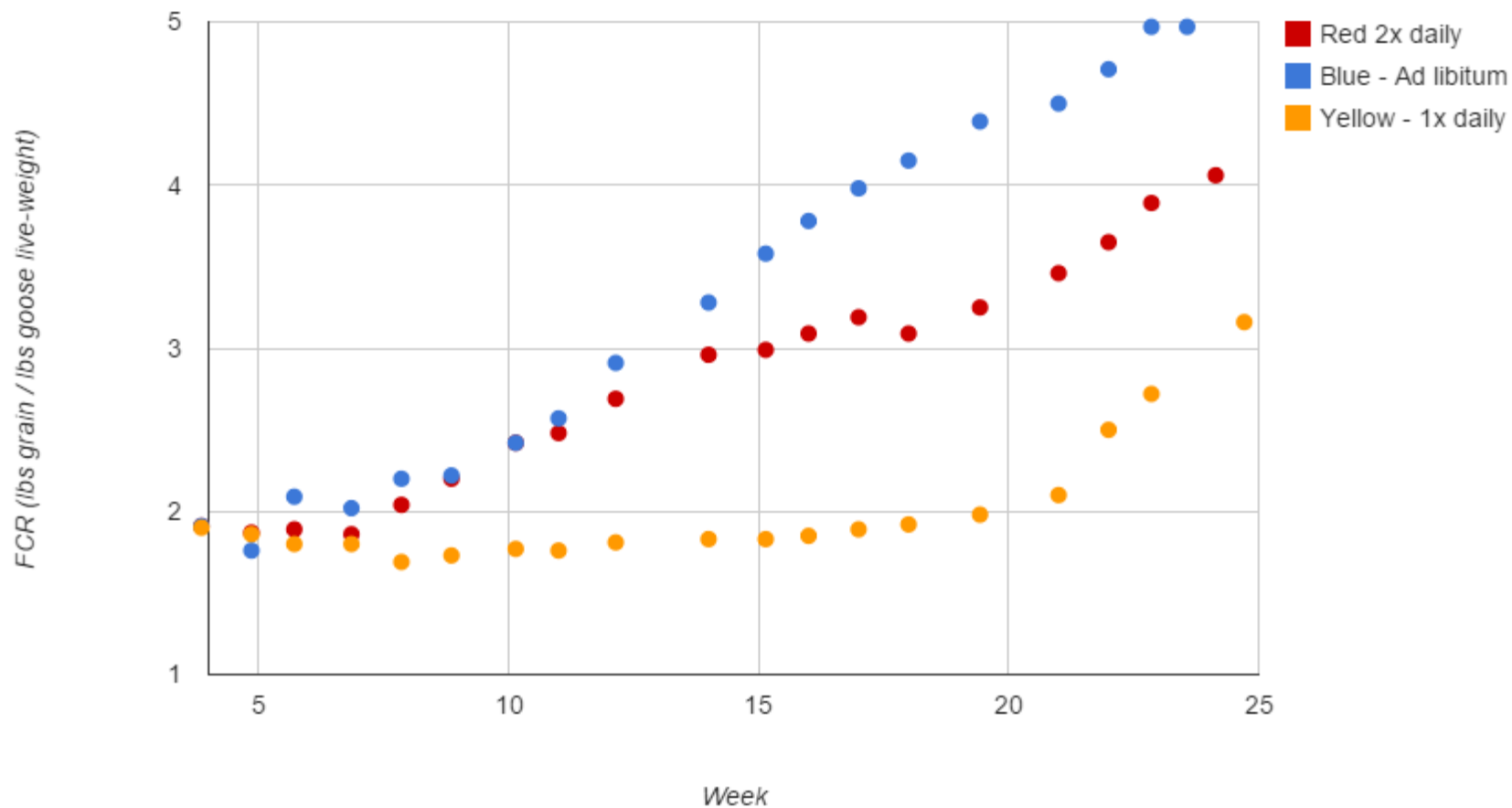
- Three flocks of ~ 60 geese
    - 16 weeks on pasture with different levels of grain:
      - Free choice access to grain
      - 2x Daily - 5 Minutes access twice daily
      - 1x Daily - 5 Minutes access once daily
  - Local Feedstock Fattening Trials:
    - Apple pomace, root vegetable seconds, standing oats
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Live weight of geese through season

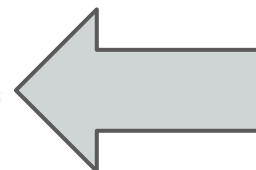
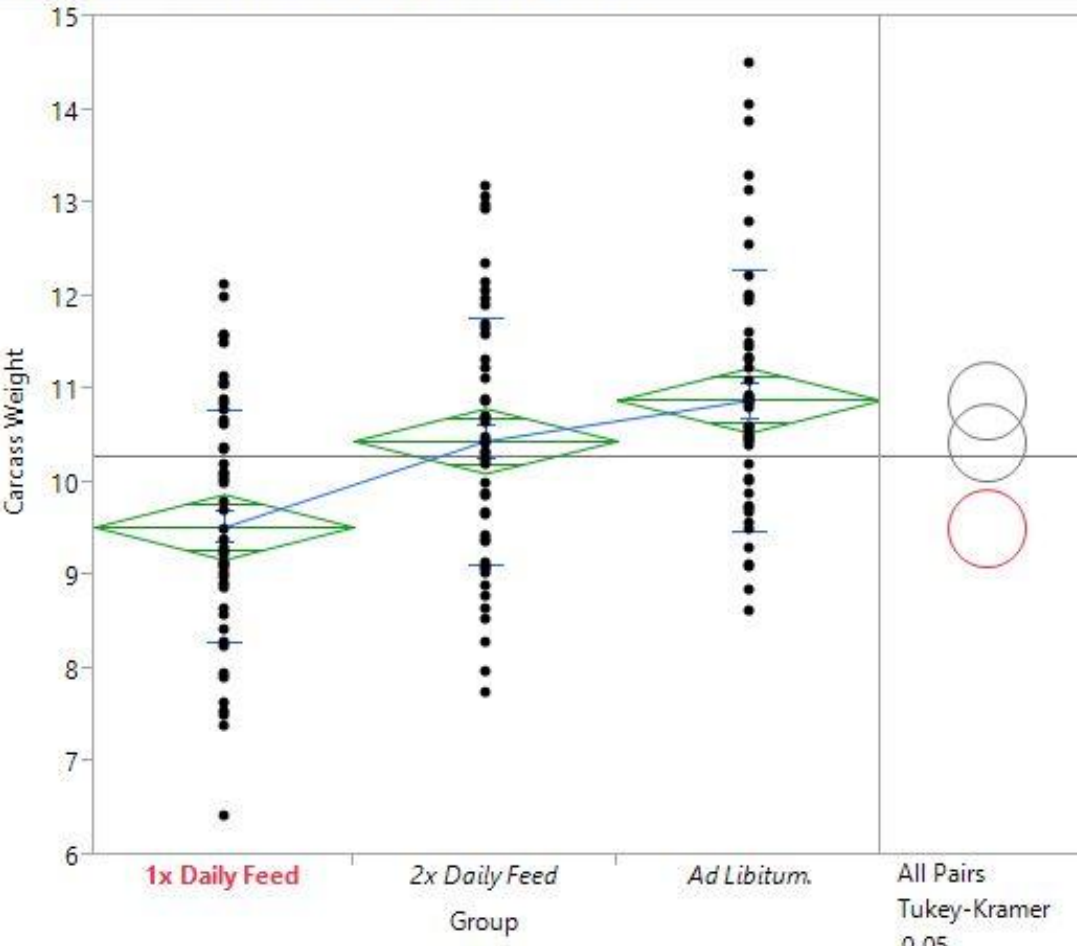




Feed Conversion Ratio - Summer 2014



## Oneway Analysis of Carcass Weight By Group



Significant Weight Differences between 1x and 2x / Ad Lib.

>>> **Supports feeding 2x daily** VS free-choice during a 24 wk lifecycle





Geese prefer tender young forages...

Wesley Bascom  
MORRISON'S CUSTOM FEEDS  
MIKE THRESHER  
PO BOX 149  
BARNET, VT 05821

#### ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.39	3.06
ME, 1X	1.20	2.65
NEL, 3X	0.70	1.55
NEM, 3X	0.73	1.62
NEG, 3X	0.46	1.01
TDN1X, %	65	

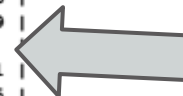
Our pastures...

- Recovering from 25 yrs haying and no amendments

Our Pasture Management Skills...

- Nascent

% Moisture	85.3	
% Dry Matter	14.7	
% Crude Protein	3.9	26.6
% Available Protein	3.7	25.2
% ADICP	.2	1.4
% Adjusted Crude Protein	3.9	26.6
Soluble Protein % CP		38
Degradable Protein%CP		68
% NDICP	1.1	7.8
% Acid Detergent Fiber	4.0	27.2
% Neutral Detergent Fiber	6.6	45.2
% Lignin	.6	4.0
% NFC	1.6	10.9
% Starch	.2	1.3
% WSC (Water Sol. Carbs.)	1.4	9.4
% ESC (Simple Sugars)	.6	4.3
% Crude Fat	.7	5.1
% Ash	1.80	12.28
% TDN	10	65
NEL, Mcal/Lb	.10	.67
NEM, Mcal/Lb	.10	.66
NEG, Mcal/Lb	.06	.39
Relative Feed Value		139
% Calcium	.10	.71
% Phosphorus	.07	.45
% Magnesium	.04	.28
% Potassium	.47	3.19
% Sulfur	.05	.32
% Chloride Ion	.05	.31
% Lysine	.14	.93
% Methionine	.05	.35
Horse DE, Mcal/Lb	.15	1.02





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 |Sampled | Recvd |Printed |ST|CO|  
 | |09/22/14|09/23/14| | |  
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Wesley Bascom  
 MORRISON'S CUSTOM FEEDS  
 MIKE THRESHER  
 PO BOX 149  
 BARNET, VT 05821

-----  
 ENERGY TABLE - NRC 2001  
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	Mcal/Lb	Mcal/Kg
DE, 1X	1.43	3.15
ME, 1X	1.25	2.75
NEL, 3X	0.73	1.61
NEM, 3X	0.76	1.68
NEG, 3X	0.49	1.07
-----		
TDN1X, %	67	
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 Analysis Results  
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Components	As Fed	DM
% Moisture	87.6	
% Dry Matter	12.4	
% Crude Protein	3.0	24.5
% Available Protein	3.0	24.1
% ADICP	.0	.4
% Adjusted Crude Protein	3.0	24.5
Soluble Protein % CP		47
Degradable Protein%CP		78
% NDICP	.5	4.0
% Acid Detergent Fiber	3.2	26.1
% Neutral Detergent Fiber	5.7	45.6
% Lignin	.3	2.8
% NFC	1.6	12.9
% Starch	<0.1	.6
% WSC (Water Sol. Carbs.)	1.7	13.7
% ESC (Simple Sugars)	1.1	8.5
% Crude Fat	.7	5.3
% Ash	1.46	11.76
% TDN	8	67
NEL, Mcal/Lb	.09	.70
NEM, Mcal/Lb	.09	.70
NEG, Mcal/Lb	.05	.43
Relative Feed Value		140
% Calcium	.08	.68
% Phosphorus	.05	.44
% Magnesium	.02	.14
% Potassium	.47	3.78
% Sulfur	.03	.25
% Chloride Ion	.10	.77
% Lysine	.11	.87
% Methionine	.06	.46
Horse DE, Mcal/Lb	.13	1.04



# Fattening Period

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- Forages
    - Standing Oats and brassicas
      - readily devoured by geese
    - Apple Pomace from cider mill
      - of some interest to geese
    - Root Vegetables
      - not interested - needs to be cooked?
  - Weight gain
    - Grain supplement
-



At ~20 Weeks of age



Fattening Period: ~ 2 weeks confined to night-house and provided free-choice grain



Bedded in wood chips  
and shredded hay







## Section IV: Processing on-farm



# Notes about timing...

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- Waterfowl molt on a regular cycle
    - plucking when in full feather... easier
    - plucking when pin feathers are emerging... nightmare
  - Examine geese to determine feather-stage
    - ~12 wks
    - ~18 wks
    - ~ 24 wks
-



### **Feed / water removed 8 - 12 hour prior at minimum**

- 1  $\frac{2}{3}$  bushel wax cardboard box containers used to box the geese
  - less expensive than plastic crates

### **Kill Cones**

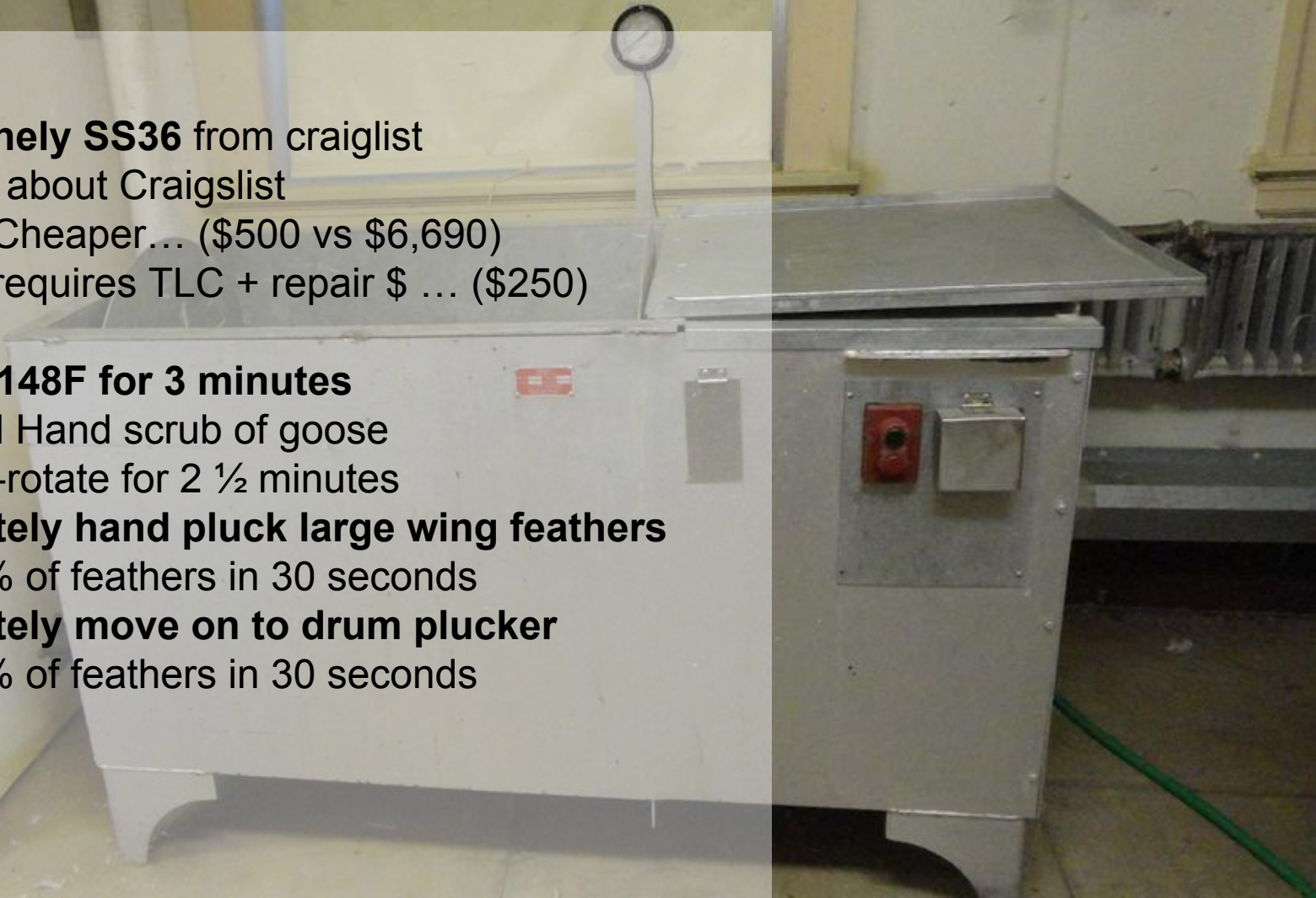
- Sharp knives
- Cut jugular
  - immediate bleed out
  - ~3 - 5 minutes until completely lifeless
- Quickly into scalding

The Process:



## Scalding:

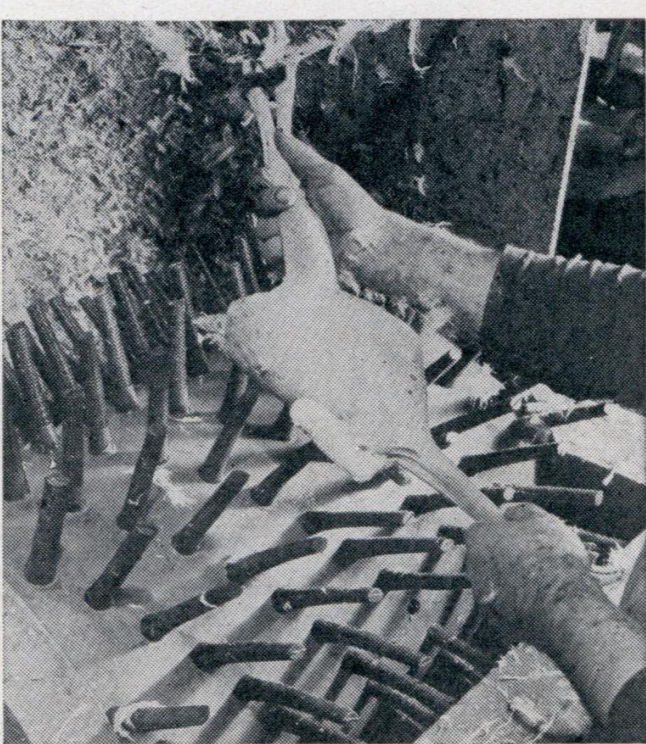
- **Used Ashely SS36** from craigslist
  - Note about Craigslist
    - Cheaper... (\$500 vs \$6,690)
    - requires TLC + repair \$ ... (\$250)
- **Scald at 148F for 3 minutes**
  - Initial Hand scrub of goose
  - Auto-rotate for 2 ½ minutes
- **Immediately hand pluck large wing feathers**
  - ~10% of feathers in 30 seconds
- **Immediately move on to drum plucker**
  - ~80% of feathers in 30 seconds





# Drum Plucker

- ~ 30 seconds
  - Removes ~ 80% of feathers
  - Learning curve
- **Watch out for damage to skin**
  - Torn skin is not attractive or sanitary
  - Plucker fingers lose effectiveness when coated in fat from broken skin...





## Wax: removes fine feathers

- Geese dunked in wax at **~170F** for **2-3 sec.**
- Ice-water tub for 2-3 minutes to harden wax
- Hand-work to remove wax / fine feathers
  - Pray for no-pin-feathers
  - Or use tweezers

>>>>> Be Careful of the **messiness**... wax coats everything...

>>>>> **Wax = ~ \$2.50 / lb** and can be re-claimed a few times with hand made cheesecloth filter

Plucking....







### **Evisceration:**

- Plastic shackles
  - Better working height
  - Frees up hands
- Cavity / Intestinal Fat
  - Delicious when Rendered
  - ~ 1 minute extra
- Skill/Experience = Speed
  - ~ 5 min./goose

### **Chilling:**

- Food grade, 55-gallon barrels
- 12 lbs ice / goose
  - includes wax chill water

### **Bagging / Weighing:**

- Poultry shrink bags + zip ties
- Scalders
- Table-top digital scale

# Processing Labor: Field to Freezer

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- 2013 - 1 ½ hrs per goose
    - DIY kill cones, hand-dunk scalding, hand plucking, wax, SS tables for evisceration, many people...
  - 2014 - 40 min. average -- 25 min. best time
    - Turkey Kill cones, SS36 Ashley Scalding, Drum plucker, wax, shackles.
  - 2015 - Goal: 15 to 20 minutes per goose
    - Experience with birds / equipment
    - 3 dedicated people for whole batch run (no substitutes!)
-

# Processing Challenges

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- Inspection - no local capacity for waterfowl
    - Molting cycle vs. facility schedule?
  - On-farm Processing Exemption
    - Using existing farm labor
      - Learning curve
      - Timing of processing vs. rest of farm work
      - Equipment Costs + utilization rate
    - Using Itinerant on-farm processors
      - Clean carcass and cost?
-



# Budget Analysis: Cost of Goose Sold

What if you were to raise a flock of 60 geese on pasture?

		Final Weight 9.5 Lbs	10.52 Lbs	10.87 Lbs
24 Weeks		1x Daily	2x Daily	Free Choice
Day Old Goslings		\$1.10	\$1.00	\$0.96
Brooding Supplies (bedding / light / heat)		\$0.34	\$0.31	\$0.22
Grain @ \$900 / ton		\$2.10	\$2.64	\$3.22
Slaughter Materials (ice! / wax / propane / bags / cleaners)		\$0.55	\$0.50	\$0.48
Misc. (delivery fuel, website, office supplies)		\$0.26	\$0.24	\$0.23
Labor		\$3.77	\$3.44	\$3.30
Price Per Pound		\$8.12	\$8.13	\$8.41

# Section IV: Taste Test & Marketing

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- NE-SARE Taste Test
  - Creating retail and wholesale markets
  - Cost barriers
  - Legal challenges
  - Marketing opportunities
-

# Set-Up

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- Blind taste test with 8 participants
    - Used techniques from classic “sensory evaluation” training
    - Gathered qualitative and quantitative data
    - Small sample size = low statistical significance, but data is still telling
    - Meat sprinkled lightly with salt to bring out flavors, otherwise, unseasoned
-



# Goals

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- Two tasks
    - 1) Evaluate preferences for four poultry breasts: Chicken / Turkey / Duck / Goose
    - 2) Compare texture and flavor of geese from our different test groups
    - Rate items on a scale of 1-5
      - 1 - displeasing
      - 5 - pleasing
-

# Deliciousness Comparison

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- The breast tasting progression
  - Chicken: mild, pleasant, fresh, (3.44 out of 5)
  - Turkey: pleasant, fragrant, meaty (3.31 out of 5)
  - Duck: meaty, rich, livery (4.28 out of 5)
  - Goose: savory, robust, juicy (4.56 out of 5)



# Price Sensitivity

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Asked tasters what they would pay for each product...

- Chicken

- Willing to pay retail: < \$7.00/lb
- Actual retail cost: \$9.49/lb

- Turkey

- Willing to pay retail: < \$7.00/lb
- Actual retail cost: \$7.99/lb





# Price Sensitivity

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- Duck
  - Willing to pay retail: < \$11.50/lb
  - Actual retail cost: \$14.00/lb
- Goose
  - Willing to pay retail: < \$13.00/lb
  - Projected retail cost: \$ 16.00/lb



# Rankings

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	<b>1 - Least favorite</b>	<b>2</b>	<b>3</b>	<b>4 - Favorite</b>
<b>Chicken</b>	4	3	x	x
<b>Turkey</b>	3	3	x	2
<b>Duck</b>	x	1	5	2
<b>Goose</b>	x	x	2	5

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# Poultry vs. Poultry Takeaways...

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- No participants willing to pay actual cost
  - Waterfowl tastes delicious!
  - Weekday vs. weekend vs. special occasion
-




# Between Study Groups

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- 5 of 8 participants could tell the difference!
    - Grain 1x Daily: slightly tougher, less fatty
    - Grain 2x Daily: mix of fat & flavor
    - Free Choice Grain: fattiest & most tender
  - More people preferred the 2x per day group
-

# What words sell meat?

# It's all about the ethics...

- Organic / Grassfed
  - Local / Pastured
  - Heritage / Vermont-raised
- 
- These words made no impact...
    - Delicious / Healthy / Fatty / Lean / Luxurious



# VT Regulations

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- Up to 1000 birds can be processed on-farm w/out inspection
    - Facilities must be inspectable
    - Birds must be sold whole
    - Retail customers must come to farm
    - Can deliver to wholesale customers
-



# Challenge: Lack of Familiarity

- Most people have never cooked goose
  - Even Chefs
  - Except Europeans!
  - Recipes
  - Education
    - Distinguishing goose from other products
- Most farm-to-table restaurants have meat supply lines in place. It can be hard to break in.
- + Premium Price
  - ... Not an ideal environment in which to market a new product...





## Challenge: Legalese

- On Farm Processing Exemption
  - Restaurants
  - Retail On-farm only
    - \$9.50/lb plus a drive to Cabot? That's pricey.
  - No sales to butcher shops or retail stores
- New legislation?
  - Bill H. 52 -- currently being drafted...
    - Could create more opportunities for small and medium scale poultry farmers.





## The Competition...

- Via internet + shipping
  - = \$11.50 - \$14.00 per pound
- Limited local availability @ specialty food stores
  - ~ \$14/lb



Be the first to [WRITE A REVIEW](#)

## All-Natural Free-Range Goose

QUANTITY

1

TOTAL PRICE

\$220.99

[ADD TO CART](#)

AVAILABILITY:

This item is currently not available.

**Please note: Frozen items may thaw in transit.**

Nothing evokes the holidays like a succulent roasted goose on the table. And for an impressive and traditional presentation, a goose cannot be beat.

D'Artagnan = ~\$15/lb +



# Opportunities

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- Goose tastes really, really good.
    - Sold to premier local restaurants
    - People will seek it out once they've tried it?!
  - Customers come to Salt just to try the goose
  - In Vermont, H.52 could help
    - Deliver to retail customers
    - Wholesale to stores
-

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# Part III: Reflections and Things to Try

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Whats good for the goose is not always good for the farmer...

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# Challenges of raising geese

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- High cost of Goslings / COGS
  - Market
    - Price sensitivity?
    - Culinary culture? (vs Europe or Canada)
  - Monogastric Digestion
    - limits use of pasture forage
-

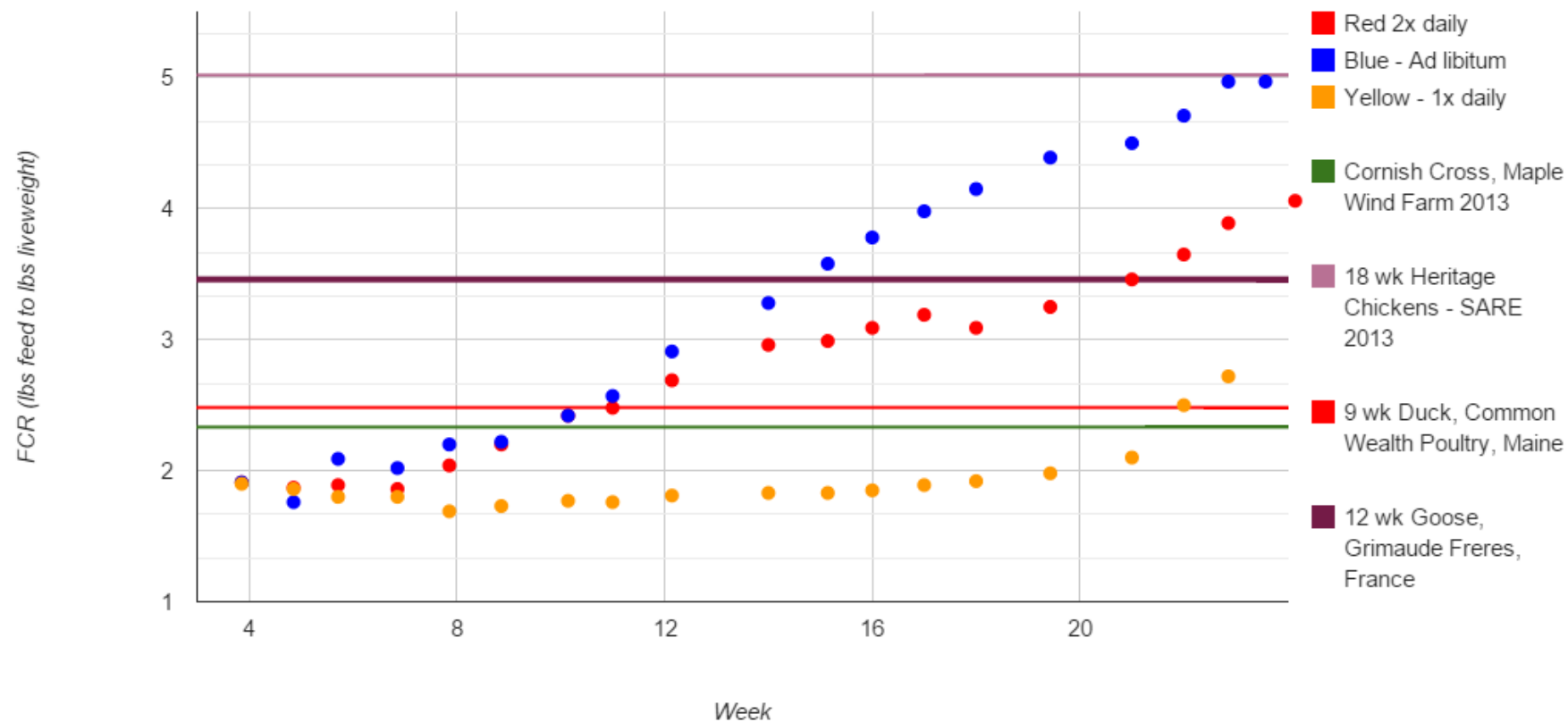
# Opportunities

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- Low Feed Conversion Ratio
    - Restrict feed
    - 12 wk or 18 wk processing timeframe
  - Niche Market currently served by few national mail-order producers
    - Competition pricing = \$12 - \$15 /lb
-



## FCR -- GozzardCity and neighbors



# What if we process at 12 weeks?

	Final Weight 7.21 Lbs	7.76 Lbs	8.5 Lbs	
12 Weeks	1x Daily	2x Daily	Free Choice	
Day Old Goslings		\$1.64	\$1.46	\$1.23
Brooding Supplies (bedding / light / heat)		\$0.38	\$0.34	\$0.28
Grain		\$1.16	\$1.73	\$1.87
Slaughter Materials (ice! / wax / propane / bags / cleaners)		\$0.81	\$0.73	\$0.61
Misc. (delivery fuel, website, office supplies)		\$0.39	\$0.35	\$0.29
Labor		\$3.58	\$3.19	\$2.69
	Price Per Pound	\$7.96	\$7.80	\$6.97

# What if we process at 18 weeks?

Final Weight				
8.26 Lbs		8.5 Lbs		9.8 Lbs
18 Weeks	1x Daily	2x Daily	Free Choice	
Day Old Goslings		\$1.35	\$1.16	\$1.10
Brooding Supplies (bedding / light / heat)		\$0.31	\$0.27	\$0.25
Grain		\$1.23	\$1.99	\$2.67
Slaughter Materials (ice! / wax / propane / bags / cleaners)		\$0.67	\$0.58	\$0.55
Misc. (delivery fuel, website, office supplies)		\$0.32	\$0.28	\$0.26
Labor		\$4.02	\$3.48	\$3.30
Price Per Pound		\$7.90	\$7.76	\$8.13

# Take-aways / Reflections

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- 12 week processing
    - Free Choice grain + pasture
  - 18 wk processing range
    - Limit grain to 2x Daily + pasture
  - Partnership with inspected processing facility?
    - Specialty sales out of state to existing urban markets
-



# Thank You!

For More information email: [Gozzardcity@gmail.com](mailto:Gozzardcity@gmail.com)

