

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...



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

The wild goose chase to come...

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

~ nighthouse



The Golden Goose of Sustainability...

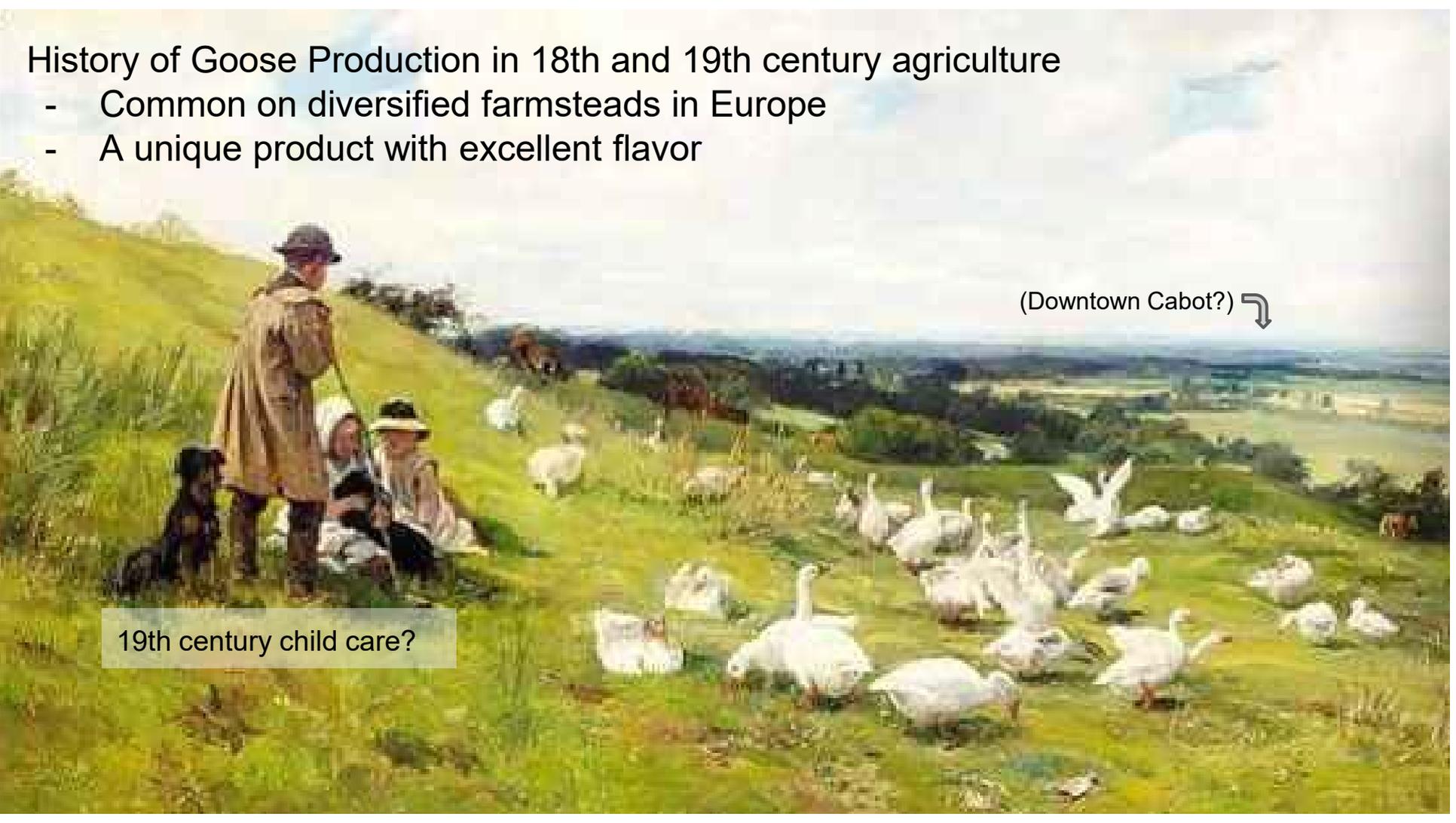
- Motivations for raising geese:
 - 75% - 90% of diet derived from foraging grasses / insects
 - Resistant to many common poultry diseases
 - Can co-exist with ruminants on a diversified farm

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



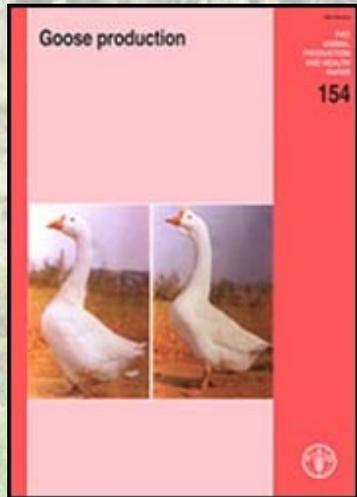
Eduardo Sousa - Spain - Fig/Seed/Olive Silvopasture for Foie Gras

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



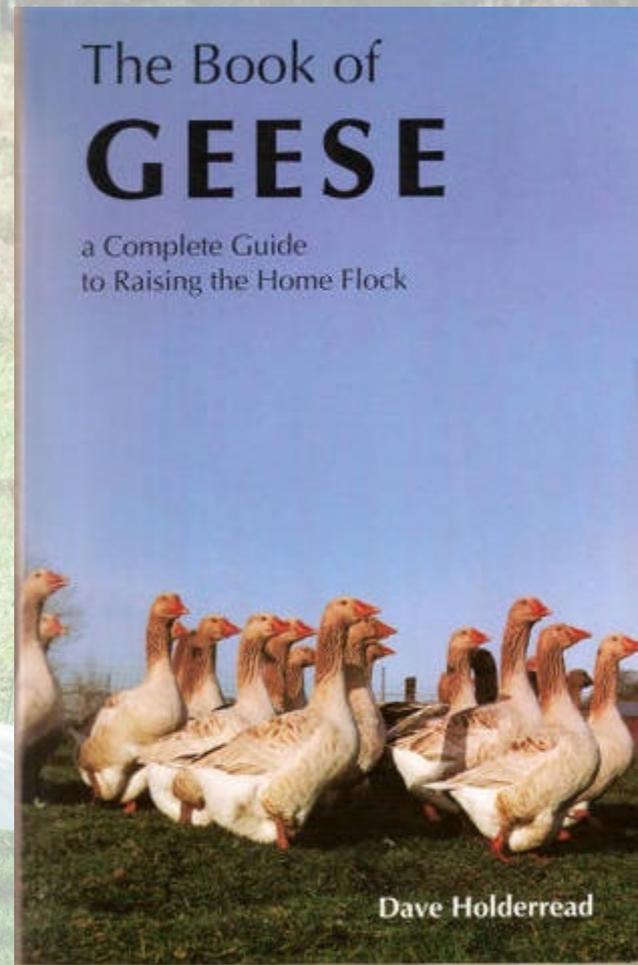
Do geese have a place in a regenerative farming system?

- 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

Goals

Follow Holderread's recommendations:

- Temperature regulation by week

- Keep bedding dry

- Grit Access

- < 1% mortality

- Clean and neat

325 Day-old goslings from Metzger Farms in California

The Brooder

2013

Small Shed + covered outdoor access.

Electric Heat Lamps

2014

28x52 ft hoop-house (1452 ft²)

Heat Lamps + Wood Stove

“Extra warm” zone expanded as they grew

Nipple waterers

Platform scale for weighing

The first 4 weeks...

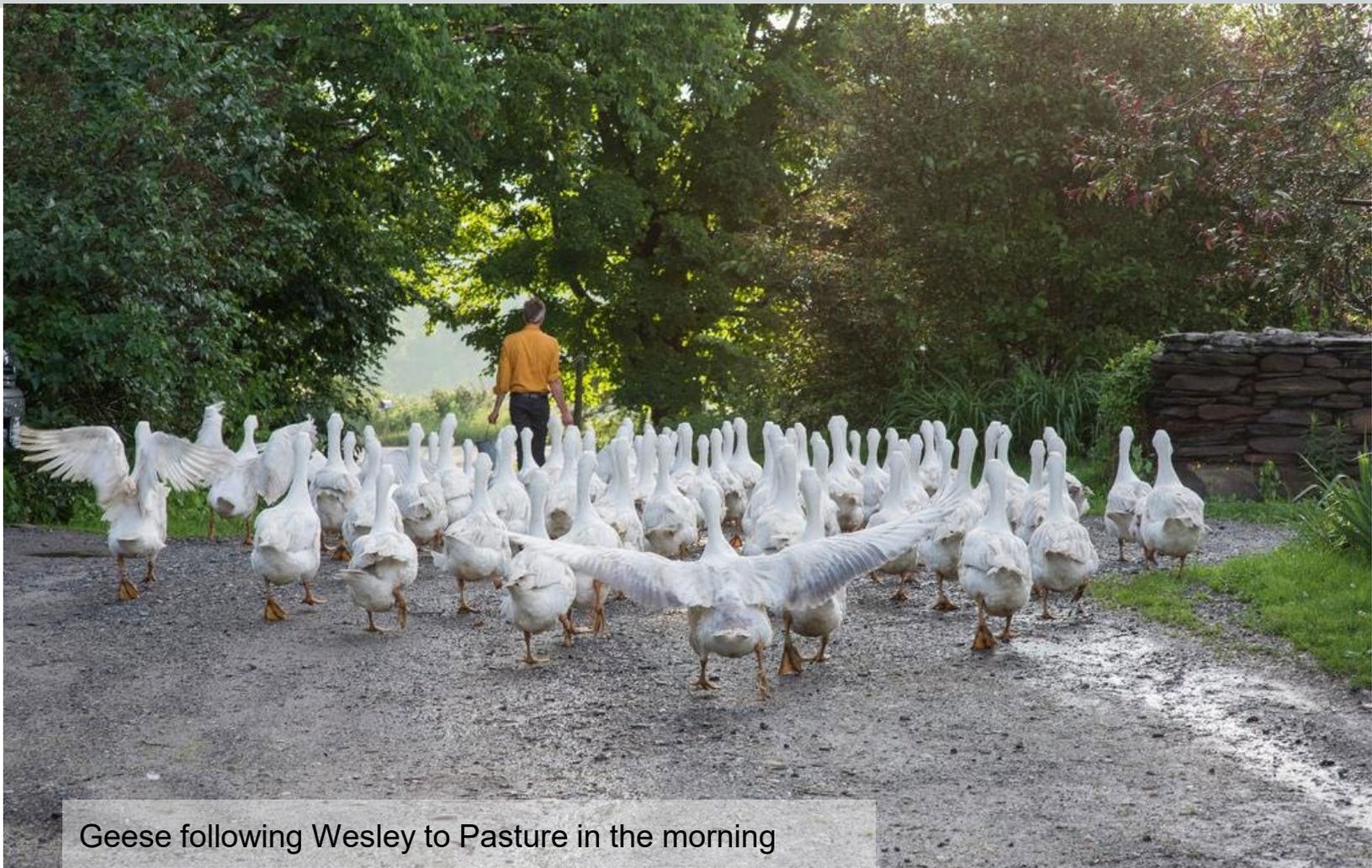
- Brooder temp < each week
- Access to grassy run
- Full access to grain
- Supplemental niacin in water
- Chopped hay & pine shaving bed
- **Careful observation**
 - Are they huddled?
 - Wet looking?
 - Calm or panicked sounds?
- **Mortality 2014 = 4%**



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

Pasturing... Week 5 - 20

Daily Chores
Infrastructure



Geese following Wesley to Pasture in the morning

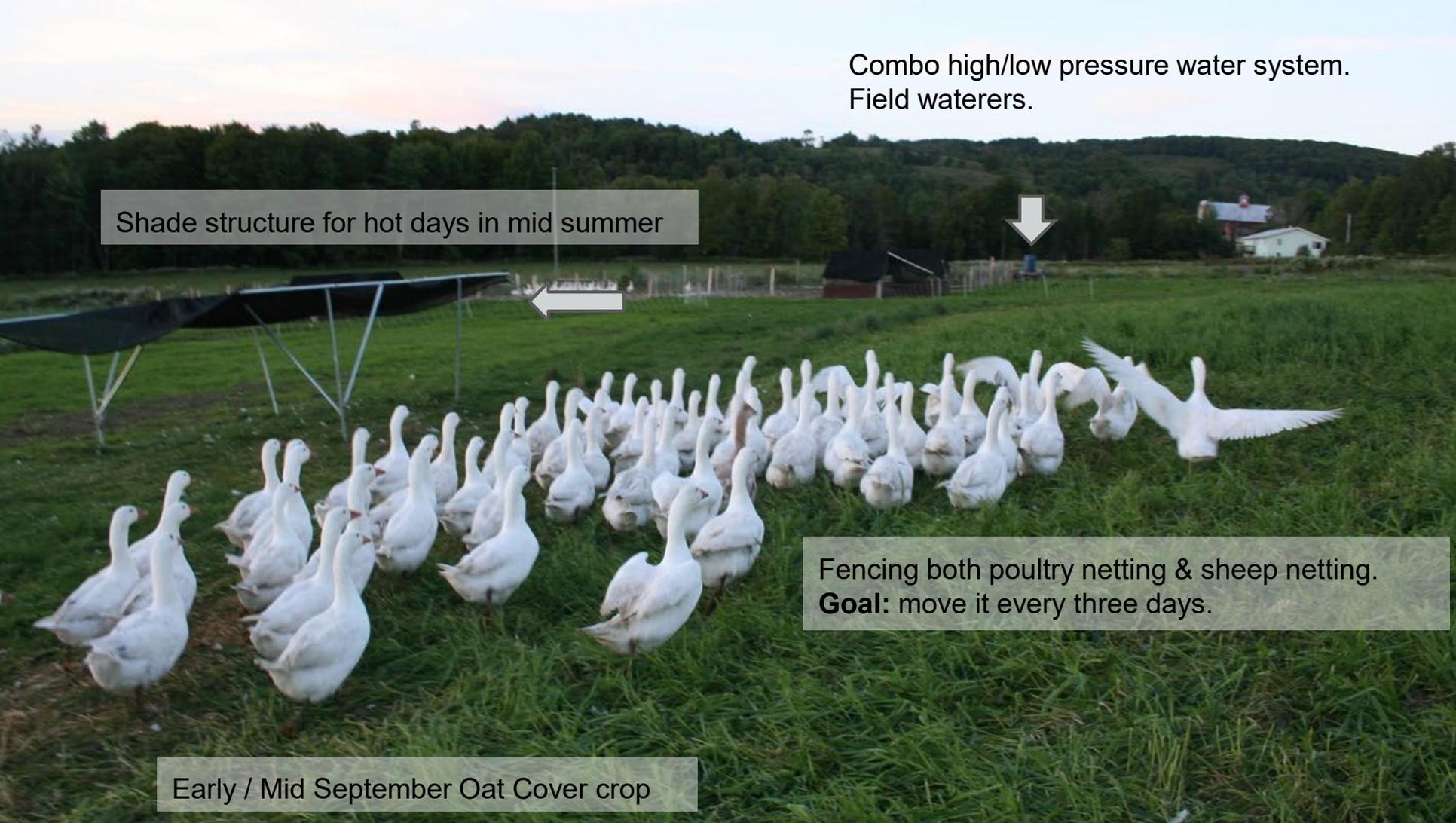
Combo high/low pressure water system.
Field waterers.

Shade structure for hot days in mid summer



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

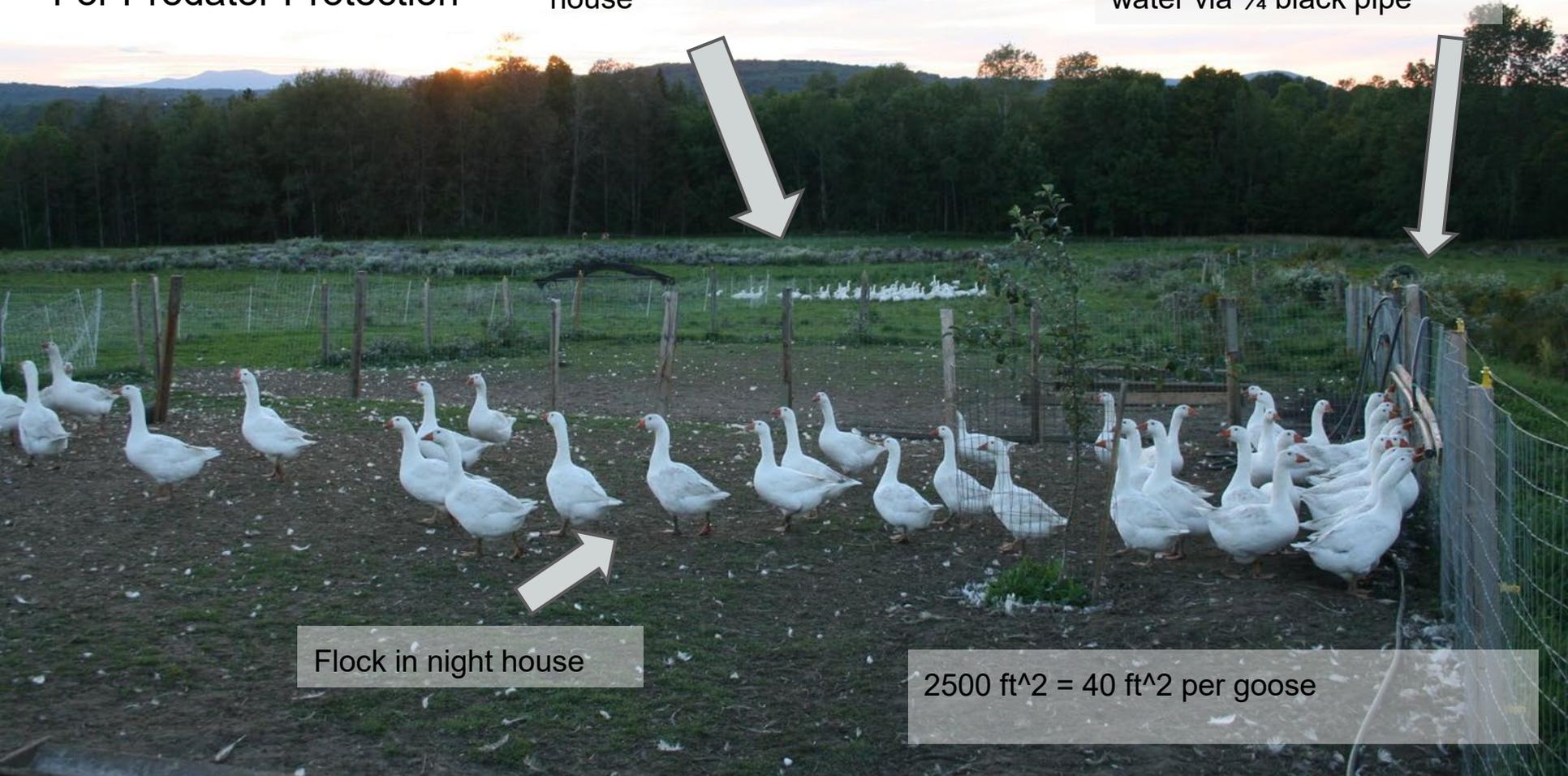
Early / Mid September Oat Cover crop



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

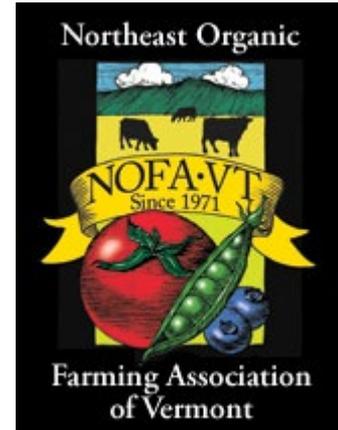
$2500 \text{ ft}^2 = 40 \text{ ft}^2 \text{ per goose}$

A group of white geese with orange beaks are gathered in a fenced enclosure. The enclosure is bounded by a wire mesh fence on the right and a wooden post-and-rail fence on the left. The geese are standing on a dirt path. In the background, there are trees and a sunset sky. A wooden structure with a brush-like top is visible near the geese.

Electric fence on outside deters predators

Wire mesh prevents geese from running through fence in night

2014 Research



Weight gain and pasture

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

Weekly tracking

- Feed conversion

- Weight gain

Trial local feeds for fattening period

Pasture and soil quality tracking

Enterprise analysis

Experimental Design

Three flocks of ~ 60 geese

16 weeks on pasture with different levels of grain:

Free choice access to grain

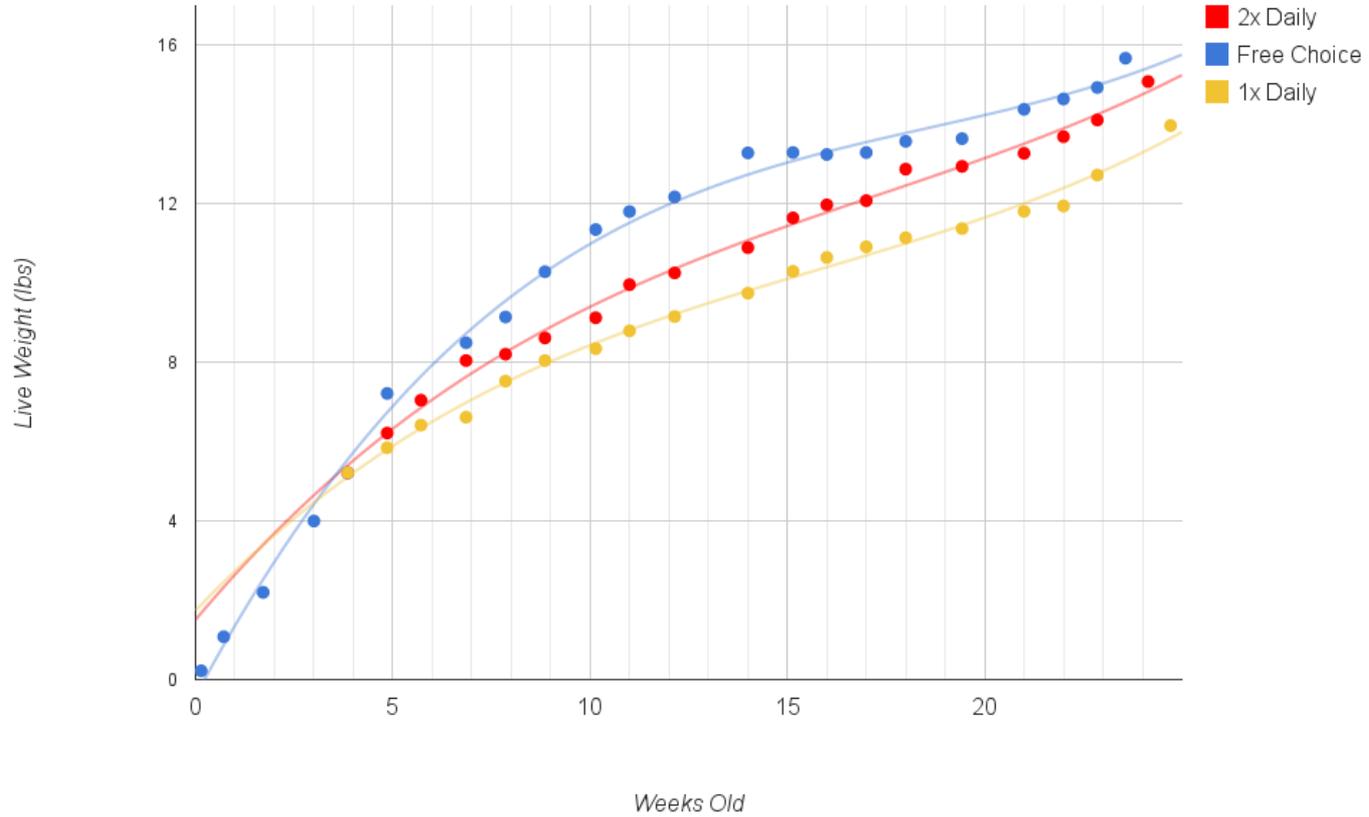
2x Daily - 5 Minutes access twice daily

1x Daily - 5 Minutes access once daily

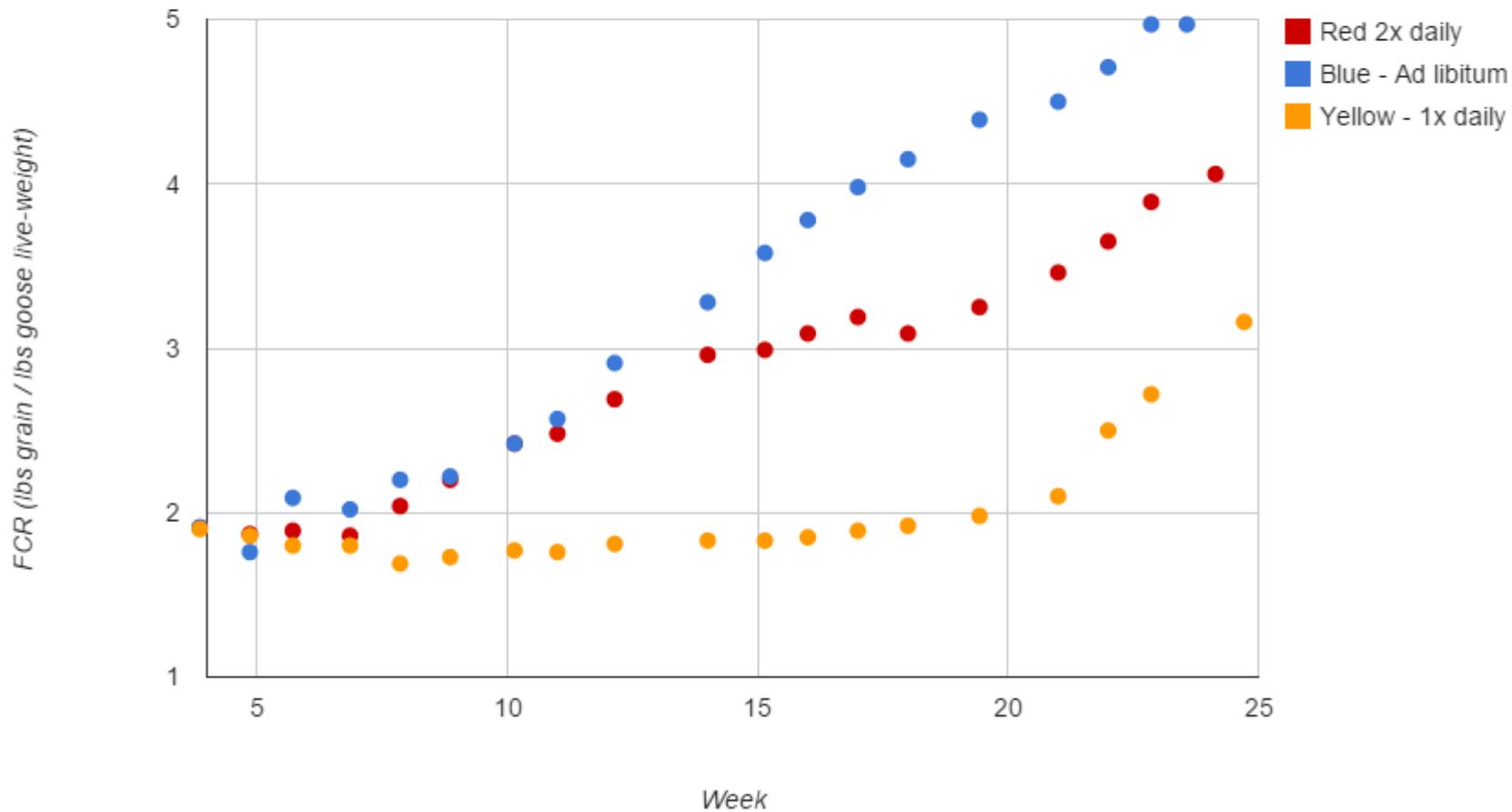
Local Feedstock Fattening Trials:

Apple pomace, root vegetable seconds, standing oats

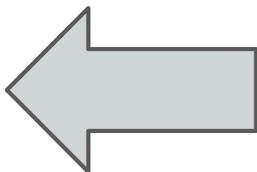
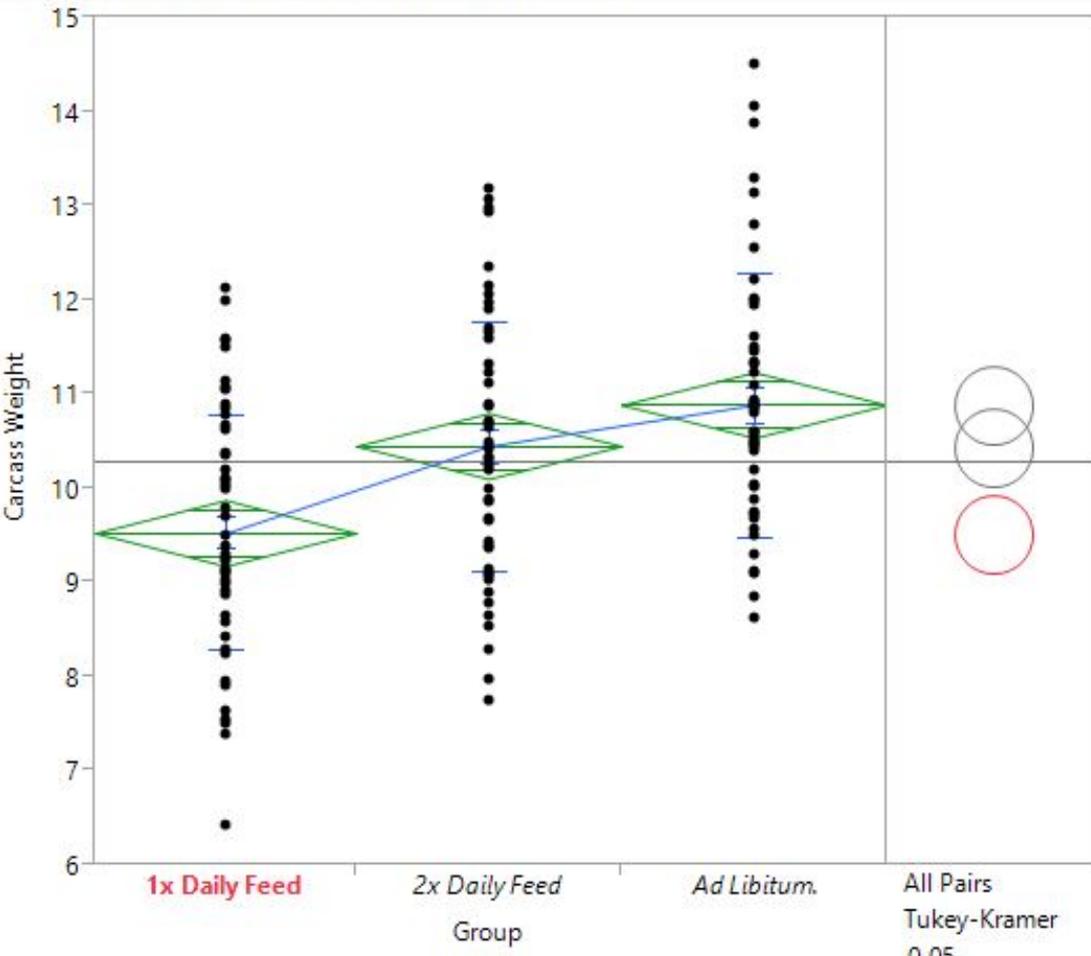
Live weight of geese through season



Feed Conversion Ratio - Summer 2014



One-way 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	

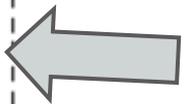
Our pastures...

- 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





 |Sampled | Recvd |Printed |ST|CO|
 | | |09/22/14|09/23/14| | |

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

 ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.43	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	

 Analysis Results

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

- 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...

- 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

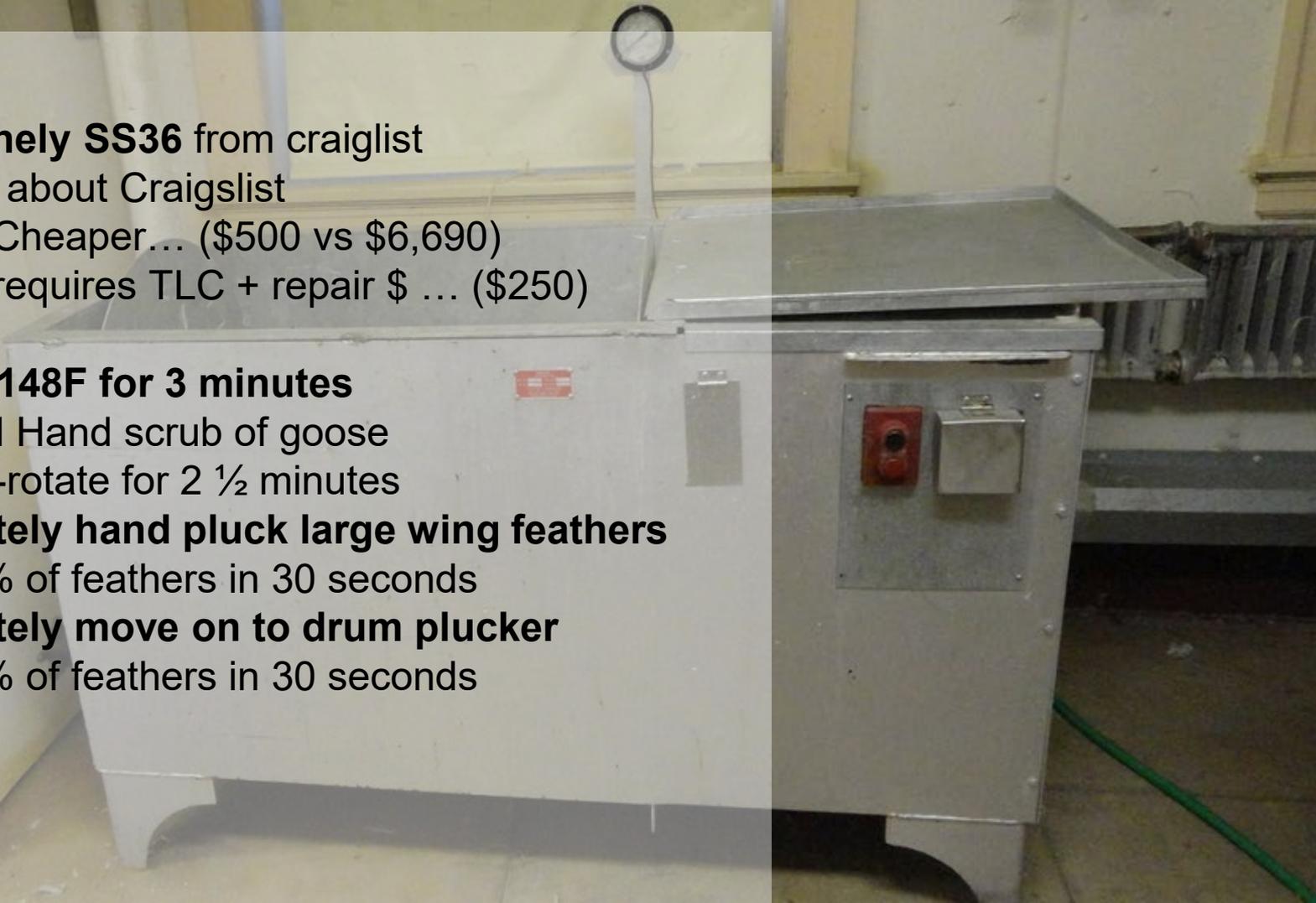
- Sharp knives
- Cut jugular
 - immediate bleed out
 - ~3 - 5 minutes until completely lifeless
- Quickly into scald

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
- Scalding
- Table-top digital scale

Processing Labor: Field to Freezer

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

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

NE-SARE Taste Test

Creating retail and wholesale markets

Cost barriers

Legal challenges

Marketing opportunities

Set-Up

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

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

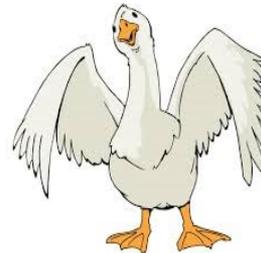
The breast tasting progression

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

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

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

	1 - Least favorite	2	3	4 - Favorite
Chicken	4	3	x	x
Turkey	3	3	x	2
Duck	x	1	5	2
Goose	x	x	2	5

Poultry vs. Poultry Takeaways...

No participants willing to pay actual cost

Waterfowl tastes delicious!

Weekday vs. weekend vs. special occasion

Between Study Groups

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

VT Regulations

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



D'Artagnan = ~\$15/lb +



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

All-Natural Free-Range Goose

QUANTITY



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.

Opportunities

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

Part III: Reflections and Things to Try

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

Challenges of raising geese

High cost of Goslings / COGS

Market

- Price sensitivity?

- Culinary culture? (vs Europe or Canada)

Monogastric Digestion

- limits use of pasture forage

Opportunities

Low Feed Conversion Ratio

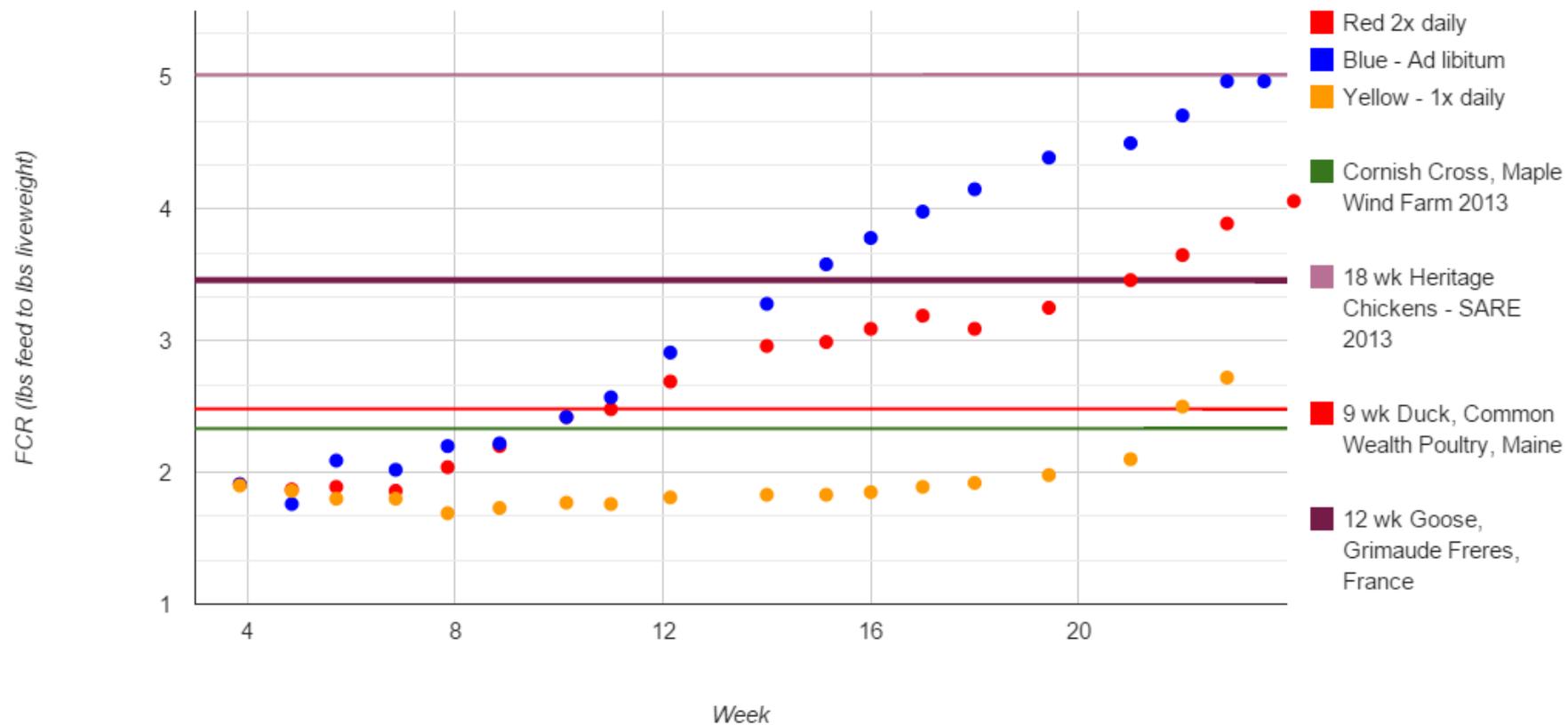
Restrict feed

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

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

