

INCORPORATING A FODDER SYSTEM ON A SMALL-SCALE LIVESTOCK OPERATION

Bill Alward

Little Mountain Ranch & Garden

Fort Calhoun, NE

FARM BACKGROUND

A scenic view of a farm with a green field, a dirt road, and a dense forest in the background under a cloudy sky. The foreground shows a grassy field with a dirt road curving through it. In the middle ground, there are several trees and a small structure. In the background, a dense forest covers a hillside. The sky is blue with scattered white clouds.

- Started in 2017
- Integrated livestock in 2018
- Guiding principles: improve soil health, work with nature, improve biodiversity, humane livestock management, and community scale marketing.
- Concept Tests
 - What is profitable?
 - What can be scaled?
- Labor and Land

PASTURE & FOREST RAISED

PORK



- Farrow to Finish
- Genetics
 - Base of herd genetics is Idaho Pasture Pigs
 - Duroc/Hamp/Chester White crosses for growth rate
- Closed Herd since Summer 2021
- Slowly scaled up Sow Herd for redundancy
- Management intensive rotational foraging
 - Rotation frequency highest in growing season
 - Rotations are adaptive
 - Feed supplemented at AM/PM chores
- Recent experimentation with full feed for young feeders during Winter and post weaning

GRASSFED BEEF



- Initial model – grass finishing off farm purchased yearlings
- Currently testing working with own breeding herd on small scale
- Genetics – primarily mix of Red Angus and South Poll
- Adaptive Rotational Grazing



PASTURED BROILERS & MARKET GARDENING

- Pastured Broilers implemented on small scale
 - Pasture fertility
 - Adds variety to our CSA program
- Market Garden and mushroom production still a part of our operation but small piece

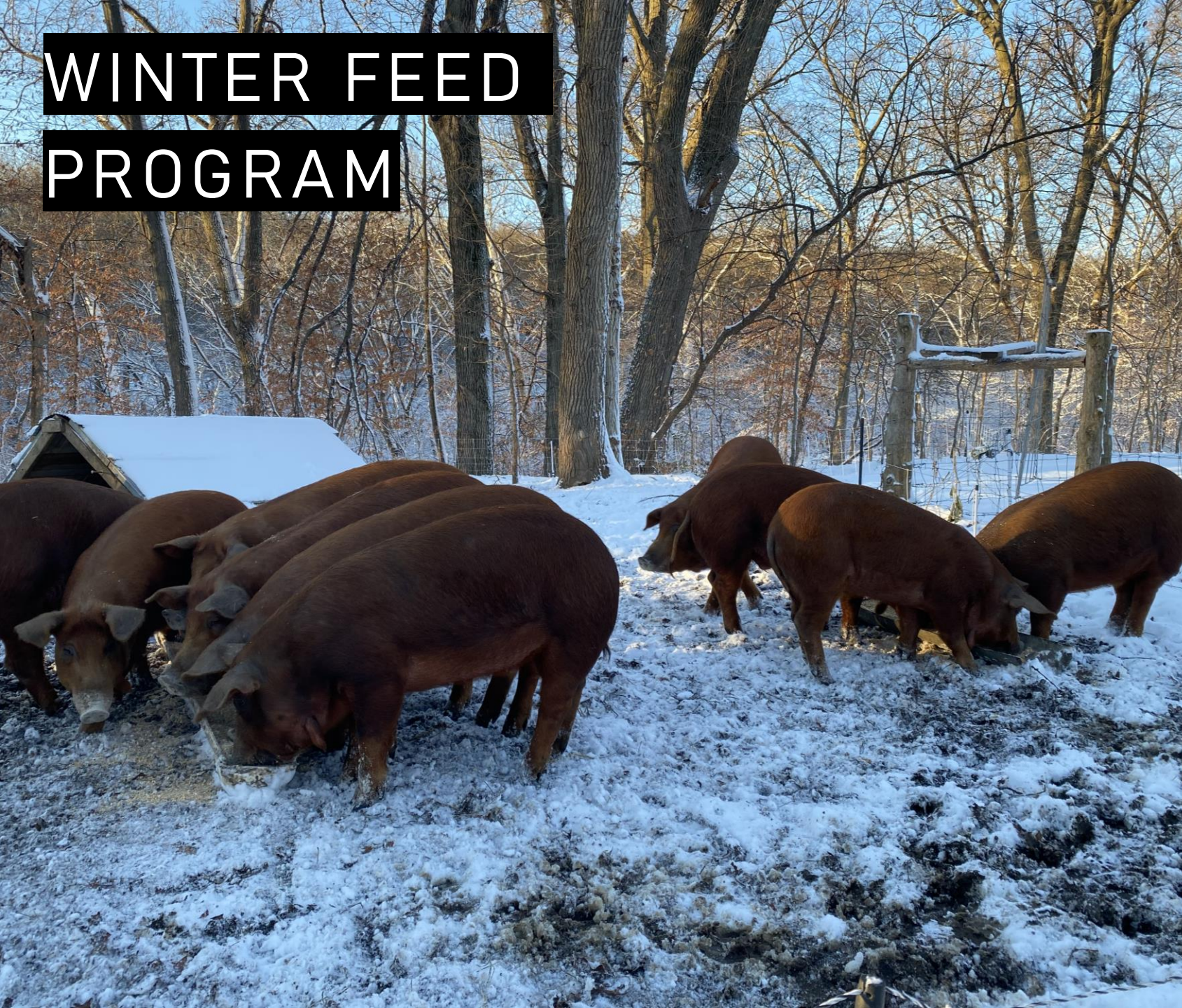


MARKETING

- Direct to Consumer
- Summer = Farmer's Market
- Winter = Winter Meat CSA
- Online Store
 - Open year round but inventory diverted to CSA during Winter Month's
- Small portion of sales go to Wholesale
 - Custom Butchers and Restaurants



WINTER FEED PROGRAM



- Pigs kept foraging into late December depending on acorn and walnut availability
 - Full Feed for young feeders
 - Alfalfa and Grass Hay supplementation
 - Spent grain from local brewery
- Cattle feeding dependent on year
 - Stockpiled forage and then transition to hay
 - Alfalfa supplementation
 - Energy Tub supplementation
- Any cattle hay waste is either mechanically delivered to pigs, or pigs rotated behind cattle to finish off hay waste

FODDER BASICS



- Small grains are typically used
 - Wheat, Rye, Barley, Triticale, Oats, and Milo/Sorghum
 - Legumes can be used – alfalfa & peas for example
- Grain is soaked in bucket for 12-24hrs
- Spread out evenly in trays
- Key is to keep everything from drying out
- Harvest in 8-9 days
- 50lb bag of seed can be turned into ~150-200lbs of feed
- Highly digestible, rich in vitamins, minerals, and enzymes.

SARE FARMER/RANCHER GRANT

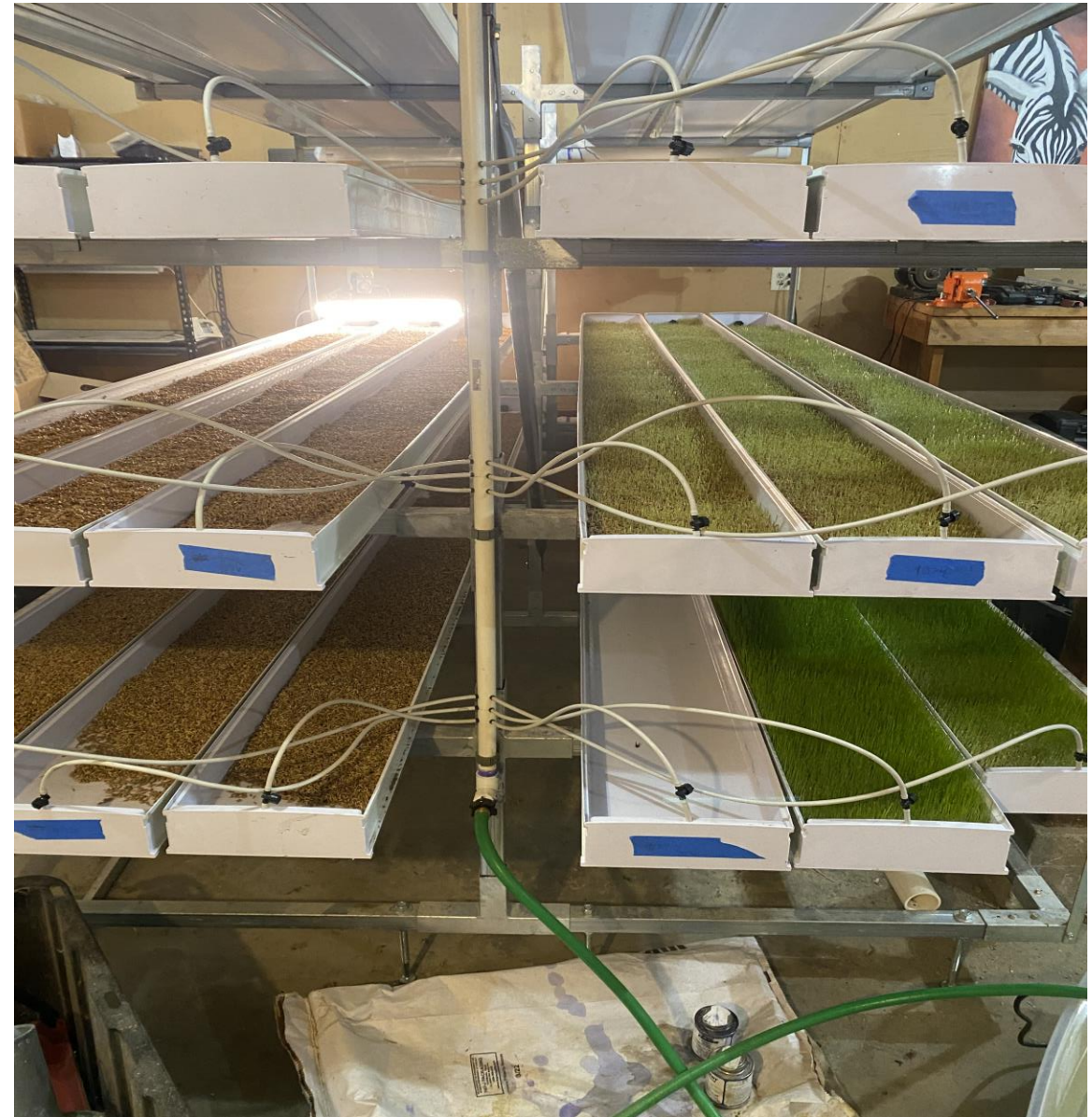
1. Install a small to medium scale fodder system in a heated indoor building.
2. Test multiple grain types to find the best fit for our livestock species.
3. Measure day to day labor needs of maintaining a fodder system.
4. Evaluate the feed cost reductions supplementing our livestock diets during the winter months.
5. Share findings of fodder system through farm tours, group visits, social media, and a conference presentation.



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FODDER SYSTEM SETUP

- System has 24, 12'x9" Channels
- 4 tiers of 6 channels
- Capable of producing around 180-190lbs of fodder daily per manufacturer
- System is on a slight slope downward from supply to drain manifold
- Not currently plumbed to live water line – using pump and water barrel
- Watering roughly every 4-5 hours, no water cycle overnight



EARLY LEARNINGS

- Building and assembling the fodder system was time consuming
 - 2 people required at times
- A big early learning was running the system on stored water with a pump isn't the most efficient
- It takes time to figure out how much grain each tray needs as well as how thick a seed layer in each tray should be
 - Very important that seed is spread out evenly and not too thick or thin
- Daily labor is ~1hour per day, sometimes longer
- We've seen no discernable difference in yield with or without grow lights



SEED TYPES

- Trial thus far has included wheat, rye, oats, and triticale. Barley will be tested later in February 2023
- Wheat, rye, and triticale all perform well. Rye is the most vigorous and thickest mat, followed by triticale and wheat.
- Oats were quickly eliminated from our trial due to poor germination rates and high mold potential.
- Germination for our system has been highest in rye and triticale thus far.



FEEDING & PALATABILITY

- We typically cut the fodder into 12" segments once ready to harvest
- Palatability of wheat, rye, and triticale fodder appears to be relatively similar
- Beef cattle aggressively consume all types of fodder fed so far this season
- Hogs appear to prefer wheat fodder slightly over rye and triticale fodder
 - Hogs on full feed vs limit fed changes how well it's consumed
 - Will be interesting to see results of barley fodder



FODDER WATER

- Providing water after soaking grain for 12-24hrs to livestock
- Application and observations very preliminary
 - Water provided to lactating sows
 - Also provided to cow herd
 - Rapidly consumed by cattle
- Possible applications in salty brine to prevent freezing



DATA COLLECTION & ANALYSIS

- Data collection is ongoing and includes:
 - Tracking per head feed costs for our feeder pigs
 - Winter Harvest weights comparison
 - Tracking per head feed costs for our cattle
 - Seed type germination and palatability
 - Yield of selected seed types
- Full data analysis planned for Summer and Fall of 2023
- Our average daily costs for fodder seed is ~\$10 per day

Seed Type	Bag Weight	Fodder Yield Weight
Triticale	48lbs	186.4lbs

CLOSING THOUGHTS



- Early observations indicate this system helps us reduce winter feed costs for cattle, TBD on the pigs
 - We anticipate savings on the pigs based on changes to winter feeding regimen fodder has offered us
- **Health** – Based on observations only, a supplement like fodder in the winter months appears to be good for gut health both in cows and pigs. We've seen early indications it has improved feed efficiency, especially now that we have hit the middle of the winter season.
- Recommendations

THANK YOU! QUESTIONS?

