USDA
United States Department of Agriculture

# Non Ruminant Grazing/Stocking

Why?

Differences in livestock foraging

Suite of Conservation Practices

Examples

Research

Resources

Natural Resources Conservation Service

10/03/17 Lindsay Haines National Organic & Pest Management Specialist

Natural Resources Conservation Service

nrcs.usda.gov/

# Why Pasture for all types of Livestock and Poultry?

## Increasing Consumer demand for:

- Non-GMO feeds
- Antibiotic Free
- Grass fed
- Nutritional differences in pastured raised meat
- Humane treatment (ex.  Certified Humane)
- Organic (Pending Rule Change, requiring year long outdoor access)

# Certified Humane


Animal welfare is improved when livestock managers adhere to the following:

- Access to wholesome and nutritious feed
- Appropriate environmental design
- Caring and responsible planning and management
- Skilled, knowledgeable, and conscientious animal care
- Considerate handling, transport, and slaughter

# Consumer Demand

## Sources

**"America's Changing Appetite: Food Consumption and Spending to 2020,"** FoodReview, 2002.

**An Appetite for Natural and Green**, Food Product Design, 2011.

**Label Rouge:** Pasture-Based Poultry Production in France, Appropriate Technology Transfer for Rural Areas (ATTRA), NCAT, 2010.

**National Chicken Council**

**Natural & Organic Foods**, Food Marketing Institute.

**Nutrition Business Journal**

**Organic Produce, Price Premiums, and Eco-Labeling in U.S. Farmers' Markets**, Economic Research Service (ERS), USDA, 2004.

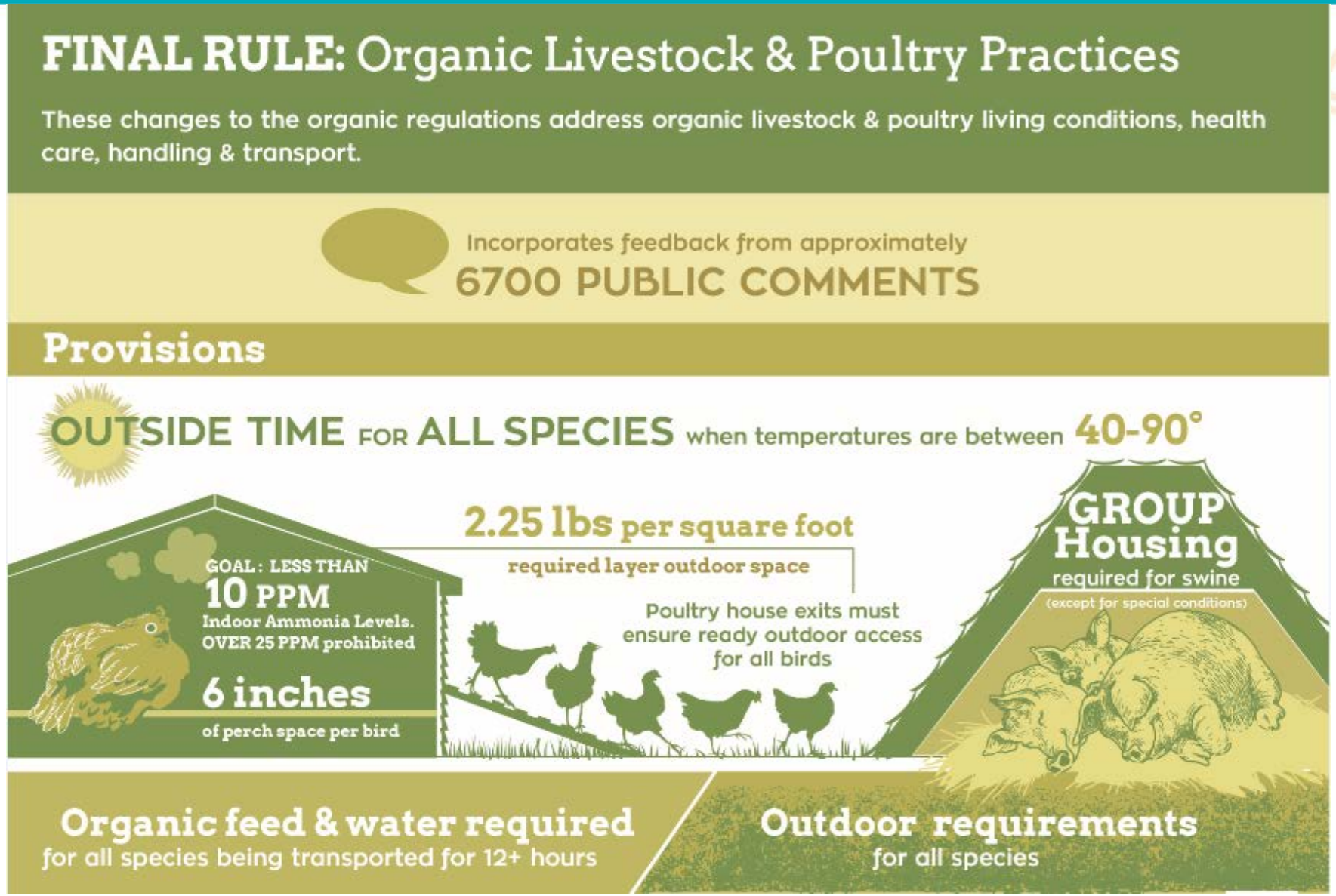
**Organic Trade Association**

**Poultry and Eggs**, ERS, USDA.

Profile originally written August 2006 and revised April 2012. Links checked December 2013.

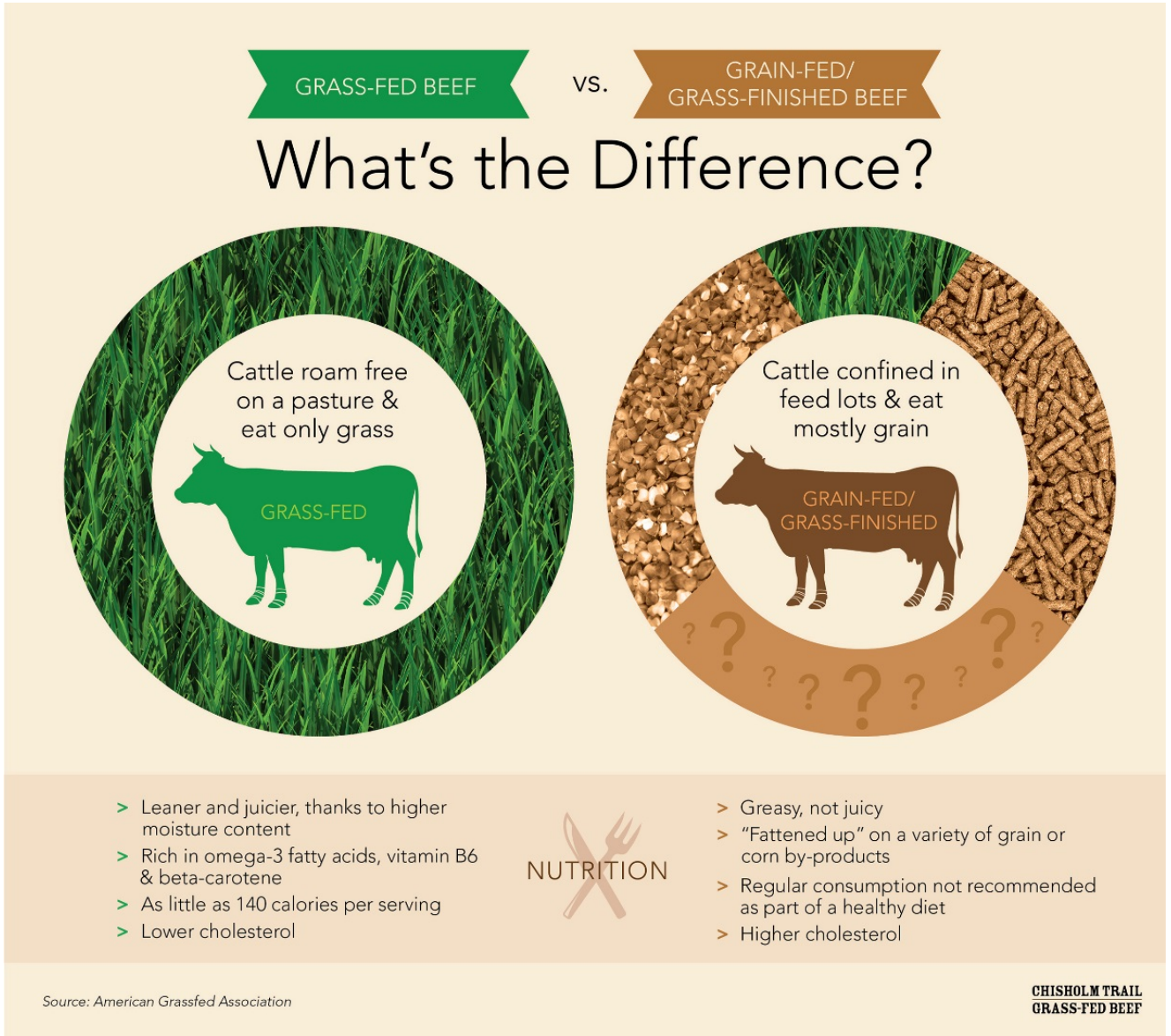
http://www.agmrc.org/commodities-products/livestock/poultry/pastured-poultry-profile/

# National Organic Final Rule




https://www.federalregister.gov/documents/2017/01/19/2017-00888/national-organic-program-nop-organic-livestock-and-poultry-practices

# Research showing differences in meat quality.




In fact, more and more research is showing that cattle, pigs and poultry raised on their natural pasture and grass-based diets yield meat that is:

- lower in total fat and calories,
- higher in good fats like Omega 3's,
- more concentrated with antioxidants such as vitamins E, C and beta-carotene,
- increased levels of other disease-fighting substances

http://www.americangrassfed.org/

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# Differences in Livestock Digestive Systems

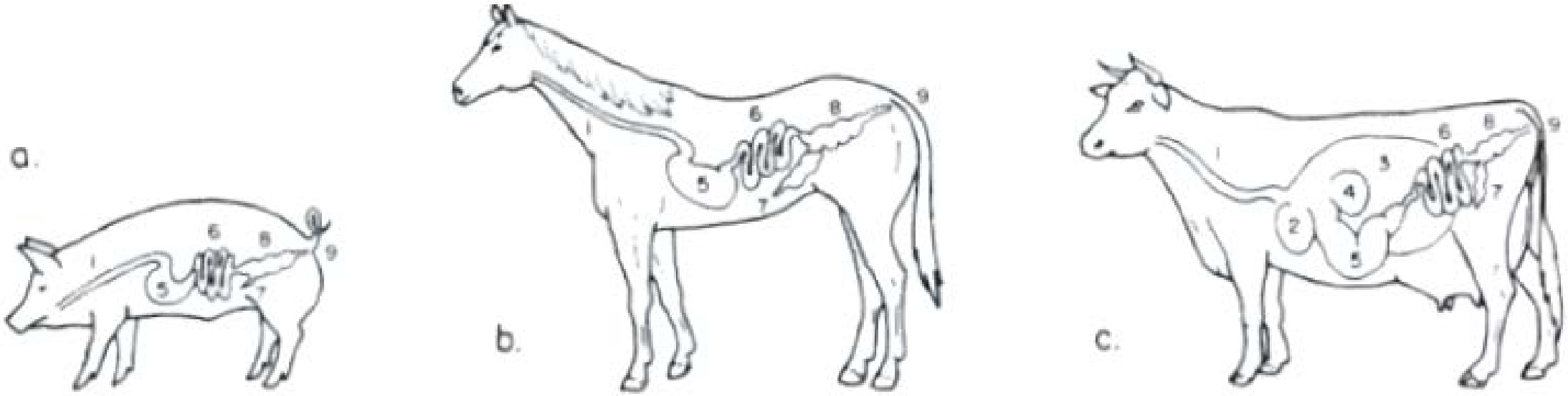
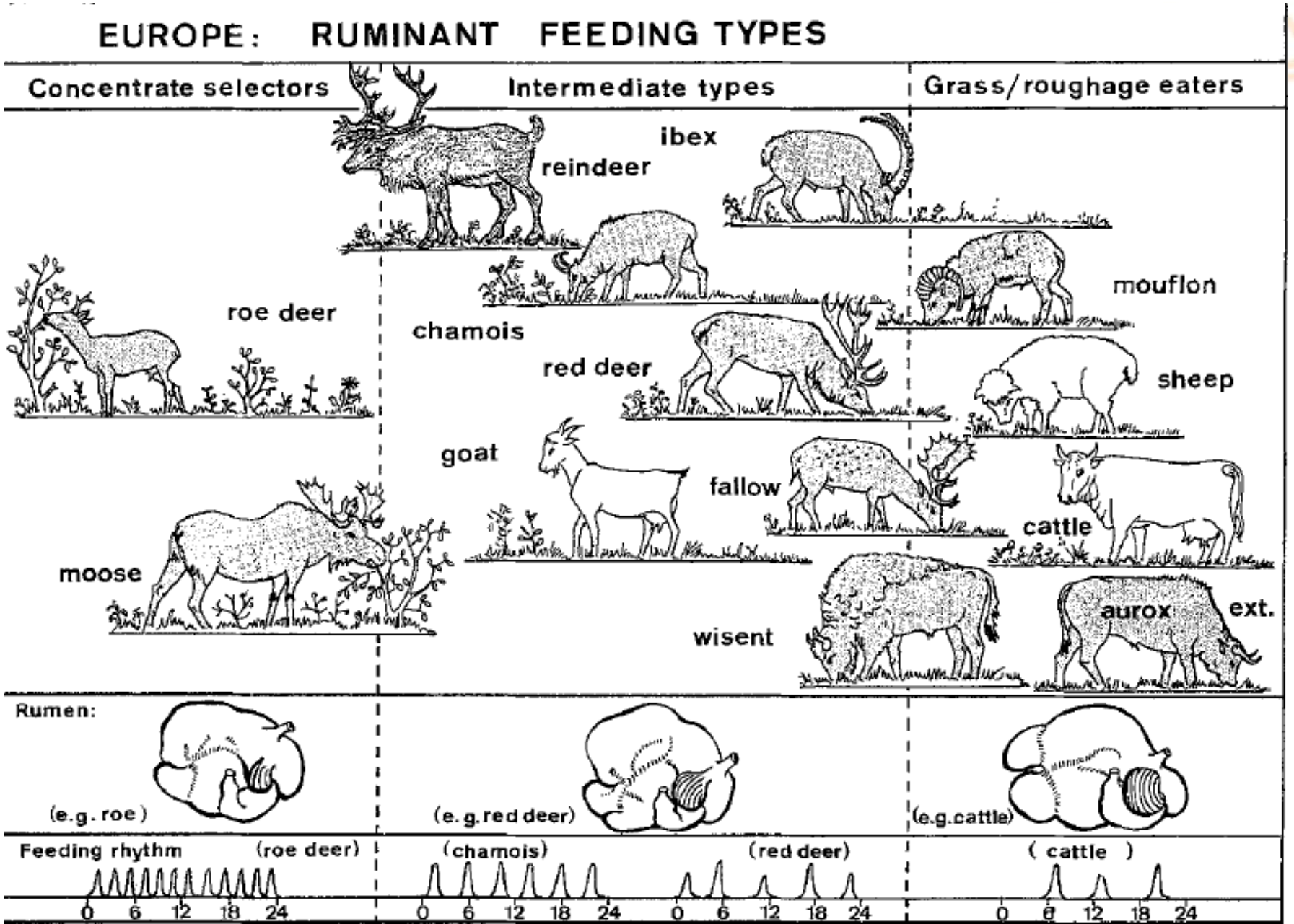


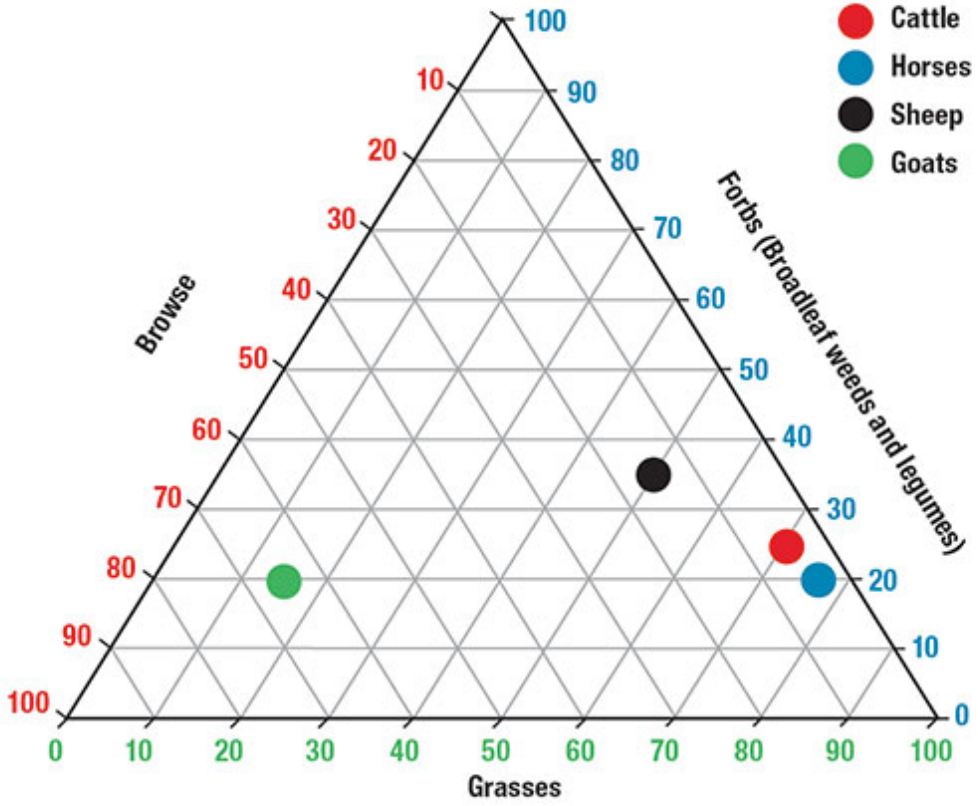

Figure 2.3. Stylized representation of the digestive anatomy and arrangement of (a) non-ruminant, (b) post-gastric fermenter, and (c) ruminant herbivores. 1, Esophagus; 2, Reticulum; 3, Rumen fermentation compartment; 4, Omasum; 5, Stomach (abomasum); 6, Small Intestine; 7, Cecum fermentation compartment; 8, Large Intestine; 9, Anus.

# R.R. Hoffman


EUROPE: RUMINANT FEEDING TYPES
Concentrate selectors
Intermediate types
Grass/roughage eaters
reindeer
ibex
roe deer
chamois
red deer
mouflon
sheep
goat
fallow
cattle
moose
wisent
aurox
ext.
Rumen:
(e.g. roe)
(e.g. red deer)
(e.g. cattle)
Feeding rhythm
(roe deer)
(chamois)
(red deer)
( cattle )
0 6 12 18 24

## Figure 1

**Approximate diet selection and foraging behavior of livestock when offered a mix pasture**




| Cattle | Sheep | Goats |
|---|---|---|
| • Grass → Forbs → Browse<br>• Primary grazers of grasses and legumes<br>• Tend to graze taller grasses that sheep will refuse<br>• Prefer lower flatter areas<br>• Sensitive to plant toxic compounds and tannins | • Forbs → Grass → Browse<br>• Prefer clovers<br>• Graze close to the ground<br>• Inclined to graze higher and drier areas<br>• Can tolerate salty compounds | • Browse → Forbs → Grass<br>• Opportunistic grazers<br>• Do not like clover but will eat it<br>• Do not like to graze close to the soil surface<br>• Inclined to grazer higher and drier areas<br>• Tolerance for tannins and bitter plant compounds and fewer problems with plant toxicities |

# Resource Concerns

# NRCS Assistance

**Voluntary**

**Addresses Resource Concerns**

**Staff provides Technology Transfer AND**

**Staff and Land Managers Exchange Technology**


Natural Resources Conservation Service

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# Systems to address resource concerns

# Systems to address resource concerns

USDA United States Department of Agriculture

# Resource Concerns

Natural Resources Conservation Service

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HORSE ILLUSTRATED
aaHHHH!
come on in... the MUD is PERFECT!
©Chris Ware

# Suite of Conservation Practices

**Heavy Use Area Protection (561)**
**Vegetated Treatment Area (635)**
**Silvopasture (381)**
**Watering Facility (614)**
**Fence (382)**
**Livestock Shelter Structure (576)**
**Diversion (362)**
**Roof Runoff Structure (558)**
**Cover Crop (340)**
**Mulch (484)**
**Nutrient Management (590)**

**Considering a new standard for Management**

# Not Prescribed Grazing

## PRESCRIBED GRAZING

### Code 528

### (Ac)

### DEFINITION

Managing the harvest of vegetation with grazing and/or browsing animals with the intent to achieve specific ecological, economic, and management objectives.

### PURPOSE

Apply this practice as a part of a conservation management system to achieve one or more of the following:

- Improve or maintain desired species composition, structure and/or vigor of plant communities.
- Improve or maintain quantity and/or quality of forage for grazing and browsing animals' health and productivity.
- Improve or maintain surface and/or subsurface water quality and/or quantity.
- Improve or maintain riparian and/or watershed function.
- Reduce soil erosion, and maintain or improve soil health.
- Improve or maintain the quantity, quality, or connectivity of food and/or cover available for wildlife.
- Manage fine fuel loads to achieve desired conditions.

### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all lands where grazing and/or browsing animals are managed.

# Existing Fact Sheet from CIG

## Outdoor Hog Production:

*Best Practices for Conservation in the San Francisco Bay Area*

UC CE · Alameda County Resource Conservation District · CEFS

### Conservation Practices for Outdoor Hog Systems

By Susan Ellsworth and Sheila Barry

The Natural Resources Conservation Service (NRCS) is an agency of the USDA tasked with promoting conservation on working lands though financial and technical assistance. Farm or ranch conservation planning is one of the many services provided by the NRCS for interested producers. The NRCS' Environmental Quality Incentives Program (EQIP) can then be utilized to help share the cost of specific conservation improvements identified within the conservation plan.

What follows is a description of various practices developed by NRCS that directly support outdoor hog management best practices in California and how they might be utilized. The chart also includes an explanation of how these practices would address potential natural resource concerns. To learn more about the NRCS and its programs, contact your local office by visiting http://offices.sc.egov.usda.gov/locator/app?state=CA.

| Resource Conservation Practice | Practice Description | Application in Outdoor Hog System |
|---|---|---|
| Compost Facility  | A structure to contain and facilitate the aerobic transition of animal manure and/or plant waste into stable organic matter suitable for use as soil amendment. | Use to manage hog manure and bedding for animals in confined or deep-bedded systems.<br>• Will address potential nutrient loading in soil, runoff or leaching associated with accumulated hog manure |
| Cover Crop  | Crops including grasses, legumes and forbs planted seasonally to reduce erosion, increase soil organic matter, suppress weeds, manage soil moisture, minimize compaction and support other goals. | Use as part of integrated cropping/hog production system – where cover crop can be grazed after achieving its resource goal. Can also be used between forage crops in pasture systems to build soil or replenish nutrients for enhanced forage production. Cover crops provide the following benefits:<br>• Promote nutrient recycling or redistribution within soil<br>• Reduce compaction in soil after use by hogs<br>• Suppress weeds resulting from disturbed soil<br>• Provide soil cover in rotationally used paddocks after hogs are removed |

*Funding provided by the Natural Resources Conservation Service Conservation Innovation Grant # 86-9104-3-179*



**http://www.acrcd.org/Portals/0/NRCS%20Practices%20Chart.pdf**

Natural Resources Conservation Service

nrcs.usda.gov/

| Resource Conservation Practice | Practice Description | Application in Outdoor Hog System |
|---|---|---|
| Fencing – permanent or temporary  | A constructed barrier to animals or humans. May include permanent fencing such as woven, barbed, smooth and high tensile wire as well as temporary fencing such as electric. | Use to exclude animals from sensitive habitat or riparian areas and/or to create cross fencing to facilitate improved rotation and distribution of animals across a field. Appropriate fencing provides the following benefits:<br>• Facilitates rotational grazing which can help to minimize disturbance, compaction, and nutrient loading associated with permanent systems (animals are not rotated through fields/paddocks)<br>Note: NRCS does not assist with perimeter property fencing. |
| Field Border/Windbreak  | A strip of permanent vegetation, often trees or shrubs, established at the edge of a field to create a physical barrier with resource benefits both on- and off-site. | Establish at the perimeter of a hog operation to provide the following benefits:<br>• Minimize erosion from wind and water<br>• Create a visual barrier for outdoor hog operation as well as minimizing the impact of odor, noise or dust on neighbors<br>• Intercept dust or other off-site particulate matter from entering the operation<br>• Provide shade, shelter and possibly nesting material and forage for hogs as well as other beneficial organisms<br>• Protect animals and plants from wind damage |
| Filter Strip  | A strip of herbaceous vegetation used to remove contaminants from overland flow and/or reduce erosion. Filter strips are established adjacent to sensitive areas to minimize impact from contaminants or sediment. | Establish upslope of sensitive habitat and adjacent to heavy use areas such as feeders, waterers, shelters or farrowing areas to provide the following benefits:<br>• Intercept sediments, nutrients, and pathogens in runoff from entering sensitive habitats, waterways or otherwise leaving the production site |
| Forage & Biomass Planting (for pasture) or Range Planting (for range)  | Establishing herbaceous species suitable for grazing or the production of hay or biomass. | Use to establish forage appropriate for hogs in pasture/range based systems, including hay or other dry forage. Forage planting can assist with the following resource concerns:<br>• Improve soil cover during low forage periods, thereby reducing erosion and improving soil and water quality |

| Resource Conservation Practice | Practice Description | Application in Outdoor Hog System |
|---|---|---|
| Heavy Use Area Protection  | Stabilizing areas heavily used by livestock, such as feeders or waters, by establishing vegetative or permanent cover. May include the use of materials such as gravel or cement. | Establish stable non-eroding surfaces in locations with heavy use such as feeders, waterers, farrowing areas or shelters to provide the following benefits:<br>• Minimize rooting and wallowing, particularly around water facilities or sites for liquid feed such as whey or milk<br>• Minimize compaction and erosion impacts from excessive animal traffic, wallowing, and rooting<br>• Improve livestock health |
| Mulch  | Applying (or maintain) plant residues, such as wood chips, straw or other materials to the land surface. In some cases this may include inorganic mulches such as plastic. | Apply around high use areas such as feeders, waterers, shelters or farrowing areas to minimize erosion, compaction and nutrient loading. |
| Nutrient Management  | Analyzing and managing nutrient deposition, including manure, to maintain or improve the condition of soil and vegetation. | Use to assess impacts of hog manure, particularly in high use areas, and consider alternative management and utilization options. This practice may provide the following benefits:<br>• Improve soil, water and air quality<br>• Increase availability of composted hog waste to improve forage quality and quantity. |
| Riparian Forest Buffer  | An area of woody vegetation such as trees and shrubs located next to or up-slope from riparian areas or waterways. Buffers should generally be combined with filter strips to avoid bare ground between trees or shrubs. | Use to support the health of riparian areas and waterways including the following:<br>• Reduce the amount of sediment, organic material, nutrients or pathogens in surface runoff.<br>• Create shade to lower water temperature, which might also provide shade to adjacent livestock. |

# Potential Practice

## LIVESTOCK SHELTER STRUCTURE

(No.)

CODE 576

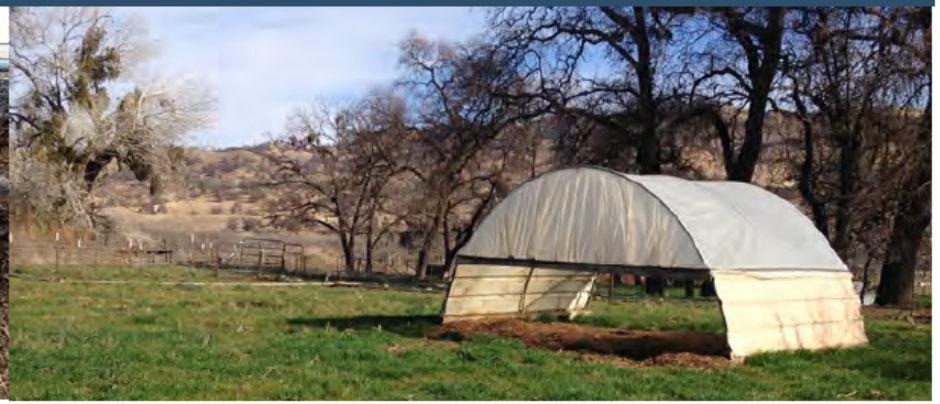
### PURPOSE

- To provide protection for livestock from excessive heat, wind, cold, or snow.
- Protect surface waters from nutrient and pathogen loading.
- Protect wooded areas from accelerated erosion and excessive nutrient deposition by providing alternative livestock shelter/shade location.
- Improve the distribution of grazing livestock to enhance wildlife habitat, reduce over-used areas, or correct other resource concerns resulting from improper livestock distribution.

http://cestanislaus.ucanr.edu/files/233216.pdf

# Outdoor Hog Production

*Best Practices for Resource Conservation in the San Francisco Bay Area*



## Farrowing and Weaning Best Practices

*By Morgan Doran*

Rearing piglets from birth to weaning is the phase in the pork production cycle with the highest mortality losses, especially during the first few days of lactation. To overcome these losses, many commercial pork operations use confined farrowing systems, or crates, that limit mobility of the sow and protect her piglets when she lies down. The use of farrowing crates has remained a common practice since the late 1950's, but alternative farrowing environments are coming into favor due to consumers' awareness of animal production practices and an expressed distaste for livestock confinement. In response to consumer preferences, in more open farrowing environments. This trend is especially prevalent among alternative and outdoor pork producers.

The farrowing environment has been the subject of considerable research and is a critical consideration in any pork operation. This factsheet will cover various environmental factors that influence maternal behavior, piglet survival and piglet weight gain for alternative hog producers in the greater Bay Area and valley regions of Northern California.

### The Farrowing Environment

Prior to the 1950's, most pork producers used open farrowing systems, but lower piglet mortality in farrowing crates created broad adoption of that system and allowed producers to significantly

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United States Department of Agriculture

# Rodale Hog System


https://rodaleinstitute.org/our-work/livestock/organic-hog-facility/

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Resources
Conservation
Service

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# Predators

White Oak Pastures Bluffton, Georgia

Journal of Animal Science Abstract - Contemporary Issues

# The United States pork niche market phenomenon[1]



This article in

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Accepted: Apr 06, 2006
Published: December 8, 2014

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honeyman@iastate.edu



doi:10.2527/jas.2005-680

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Author Affiliations

## Abstract

After the broad industrialization of the US pork industry, there has been a development of niche markets for export and domestic pork; that is, there is a pork niche market phenomenon. The US pork niche market phenomenon is characterized, and 2 of the major markets are explained in detail. With the Midwest's tradition of a diversified family-based agriculture and record low hog prices of the late 1990s, the conditions were conducive for this phenomenon to develop. Pork niche markets utilize various sales methods including Internet sales, local abattoir sales, direct marketing, farmer networks, and targeting to organized groups. In 2003, there were approximately 35 to 40 active pork niche marketing efforts in Iowa. The Berkshire breed is an example of a swine breed that has had a recent resurgence because of niche markets. Berkshire pork is known for tenderness and excellent quality. Berkshire registrations have increased 4-fold in the last 10 yr. One of the larger niche marketers of "natural pork" is Niman Ranch Pork, which has more than 400 farmer-producers and processes about 2,500 pigs weekly. Many US consumers of pork are interested in issues concerning the environment, food safety, pig welfare, and pig farm ownership and structure. These consumers may be willing to pay more for pork from farmers who are also concerned about these issues. Small- and medium-sized swine farmers are active in pork niche markets. Niche markets claim product differentiation by superior or unique product quality and social attributes. Quality attributes include certain swine breeds, and meat quality, freshness, taste or flavor, and tenderness. Social or credence attributes often are claimed and include freedom from antibiotics and growth promotants; local family farm production; natural, organic, outdoor, or bedded rearing; humane rearing; known origin; environmentally friendly production; and the absence of animal by-products in the feed. Niche pork markets and alternative swine production practices offer an unusual contrast to commodity pork markets and industrial confinement swine production. Because they strive to have these attributes in their product, the niche pork market producers are a distinct clientele group. If niche pork markets continue to flourish, the markets and the producers that supply them will be a viable sector in a diverse US pork industry.

USDA United States Department of Agriculture

http://www.sare.org/Learning-Center/Bulletins/Profitable-Pork/Text-Version/Resources

# Alternative Swine System Resources

– Photo by Prescott Bergh, courtesy of Minnesota Department of Agriculture

## GENERAL INFORMATION

***Sustainable Agriculture Research and Education (SARE) program*** USDA, 10300 Baltimore Avenue BARC West, Bldg. 046, Beltsville, MD 20705; san@sare.org; www.sare.org
SARE studies and spreads information about sustainable agriculture via a nationwide grants program. See specific research findings at www.sare.org/projects/

***Appropriate Technology Transfer for Rural Areas (ATTRA)*** P.O. Box 3657, Fayetteville, AR 72702; (800) 346-9140; http://attra.ncat.org/
Provides assistance and resources free of charge to farmers and other ag professionals.

***Alternative Farming Systems Information Center (AFSIC)*** USDA National Agricultural Library, Rm 132, Beltsville, MD 20705; (301) 504-6559; afsic@nal.usda.gov; www.nal.usda.gov/afsic
Provides on-line information resources, referrals and database searching.

***Iowa State University/ Mark Honeyman*** Honeyman has written many articles on sustainable hog production and is doing research on hoop shelters and Swedish deep-bedded group nursing systems. For alternative swine production systems information and research results:
B1 Curtiss Hall, Iowa State University, Ames, IA 50011 (515) 294-4621; honeyman@iastate.edu

***Minnesota Institute for Sustainable Agriculture*** MN 55108; (877) ALT-HOGS; (612) 625-6224; marti067@tc.umn.edu www.misa.umn.edu/programs/altswine/swineprogram.html

***Texas Tech University Pork Industry Institute*** For a free sustainable outdoor pork production information package, (806) 742-2826 or www.pii.ttu.edu

## PUBLICATIONS

***A Gentler Way: Sows on Pasture*** Inspirational testimonials from Minnesota and Iowa hog farmers. Free from Alison Fish Minnesota Department of Agriculture; (651) 296-7686. alison.fish@state.mn.us

***An Agriculture that Makes Sense: Making Money on Hogs*** Describes and analyzes a 50-sow sustainable hog enterprise in Minnesota. $4 to Land Stewardship Project, 2200 4th Street, White Bear Lake, MN 55110; (651) 653-0618; www.landstewardshipproject.org/resources-pubs.html #hogs

***Graze*** A monthly magazine offering production information on dairy, beef, sheep, hogs and poultry. $30 for one year (10 issues). To subscribe or for free sample, contact: Graze, P.O. Box 48, Belleville, WI 53508; (608) 455-3311; graze@mhtc.net; www.grazeonline.com/

***Hogs Your Way*** Options for keeping all sizes of hog production systems profitable and environmentally friendly. Includes profiles of hog farmers successfully using Swedish deep-straw farrowing systems, pasture farrowing and hoop house finishing. $5 plus s/h to Minnesota Extension Service

***The New American Farmer*** A collection of in-depth interviews with farmers and ranchers across America, including profiles about diversified hog farmers. $10 to Sustainable Agriculture Publications, 210 Hills Bldg., UVM, Burlington, VT 05405-0082; (802) 656-0484; sanpubs@uvm.edu; www.sare.org/newfarmer

***Swine Breeding, Gestating & Housing Series.*** MidWest Plan Service, (800) 562-3618; www.mwpshq.org/catalog.html, click on "Livestock"

***Swine Source Book: Alternatives for Pork Producers*** A collection of research and demonstration articles that focus on hoop structures, Swedish deep bedding, pasture systems, low antibiotics and marketing. $30 plus s/h from Minnesota Extension Service Distribution Ctr, Item# 07289; (800) 876-8636; www.extension.umn.edu/units/dc/abstract.html?item=07289

***The Stockman Grass Farmer*** This monthly magazine is devoted to the art and science of turning grass into cash flow. $32/year. To subscribe or for free sample, contact: The Stockman Grass Farmer, P.O. Box 2300, Ridgeland, MS 39158; (800) 748-9808; www.stockmangrassfarmer.com

## WEB SITES, LISTSERVS AND E-PUBS

***Swine-L*** Hosted by the University of Minnesota and maintained by the staff of Swine Health and Production, a journal published by the American Association of Swine Veterinarians.

***Appropriate Technology Transfer for Rural Areas (ATTRA)*** On-line hog information ;

***Alternative Marketing of Pork*** www.attra.org/attra-pub/altpork.html

***Hooped Shelters for Hogs*** www.attra.org/attra-pub/hooped.html

***Organic Matters: Considerations in Organic Hog Production*** http://attra.ncat.org/attra-pub/PDF/omhog.pdf

***Sustainable Hog Production Overview*** www.attra.org/attra-pub/Hogs.html

***American Farmland Trust Grazing Links*** http://grassfarmer.com/glink.htm

***Hoop Structures for Swine*** Leopold Center for Sustainable Agriculture. www.abe.iastate.edu/hoop_structures/

***Missouri Alternatives Center*** http://agebb.missouri.edu/mac/links/index.htm

***Pigs on Pasture – The Gunthorp Farm*** http://grassfarmer.com/pigs/gunthorp.html; www.sare.org/newfarmer/gunthorp.htm

***Swine Facilities for Production on Pasture*** Oklahoma State University Cooperative Extension Service Swine Publications, www.ansi.okstate.edu/ten/swine/F-3676.PDF

***Top Ten Reasons for Rural Communities to be Concerned about Large-Scale, Corporate Hog Operations*** By John Ikerd, Univ of Missouri Agricultural Economist. http://ssu.agri.missouri.edu/faculty/jikerd/papers/TOP10.html

***USDA National Organic Program*** Richard Mathews (202) 720-3252 richard.mathews@usda.gov

SARE works in partnership with Cooperative Extension and Experiment Stations at land grant universities to deliver practical information to the agricultural community. Contact your local Extension office for more information.

This bulletin was based in part on "Hogs Your Way," produced by the University of Minnesota Extension Service, the Minnesota Institute for

Natural Resources Conservation Service

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USDA

CEFS

CENTER for ENVIRONMENTAL FARMING SYSTEMS

NCSU | NCA&T | NCDA&CS

*The Center for Environmental Farming Systems is a partnership of North Carolina Agricultural and Technical State University, the North Carolina Department of Agriculture and Consumer Services, and North Carolina State University.*



# Alternative Swine Unit

https://cefs.ncsu.edu/field-research/alternative-swine-unit

## Goal

Interest in outdoor pig operations in North Carolina has increased considerably during the last decade. Acceptance by consumers of pork produced under these conditions has helped to establish alternative production systems that are often preferred by small producers. However, management challenges exist for outdoor swine operations, including deterioration of vegetative ground cover, soil disturbance and


## Research Units

- Farming Systems Research Unit
- Organic Research Unit
- Pasture-Based Dairy Unit
- Pasture-Based Beef Unit
- Small Farm Unit
- Alternative Swine Unit


## Alternative Swine Unit Contacts


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**Andrew Meier**


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Importance of Ground Cover Maintenance in Pasture Swine Operations

Environmentally-Friendly Outdoor Pig Production In North Carolina (2009)

Outdoor Hog Management Assessment Tool (2010)

Nutrient and Vegetation Management in Outdoor Hog Production Systems (2014)

Nutrient Management in Pasture-Based Swine Operations

10 Ideas for Improving Resource Management in Outdoor Hog Production (2010)

Designing Pasture Subdivisions for Practical Management of Hogs (2015)

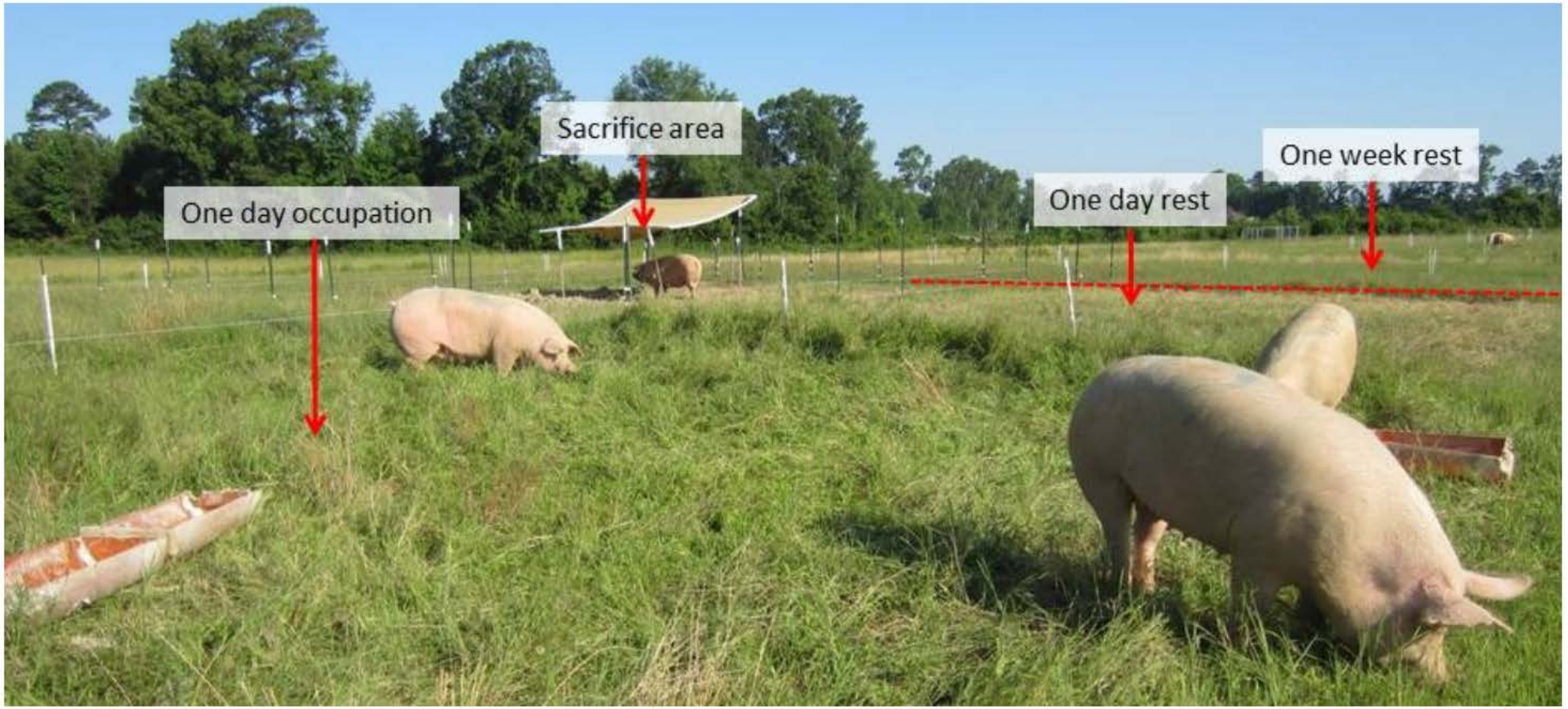
Conservation Practices in Outdoor Hog Production Systems: Findings and Recommendations (2012)

costs of production
cover crops
dairy
distribution
economic development
eggs
farm-to-institution
farm-to-school
food safety
Good Agricultural Practices
grass fed beef
grassfed beef
health
labeling
local food
local government
marketing
MBA research
meat
meat processing
meat production
organic production
outdoor hog production
pasture-based meat
pastured pork
pastured poultry
pasture management
post-harvest handling
racial equity
renewable energy
research
retail
school gardens
seafood
small fruit production
vegetable production
video
working landscapes
youth

Natural Resources Conservation Service
nrcs.usda.gov/

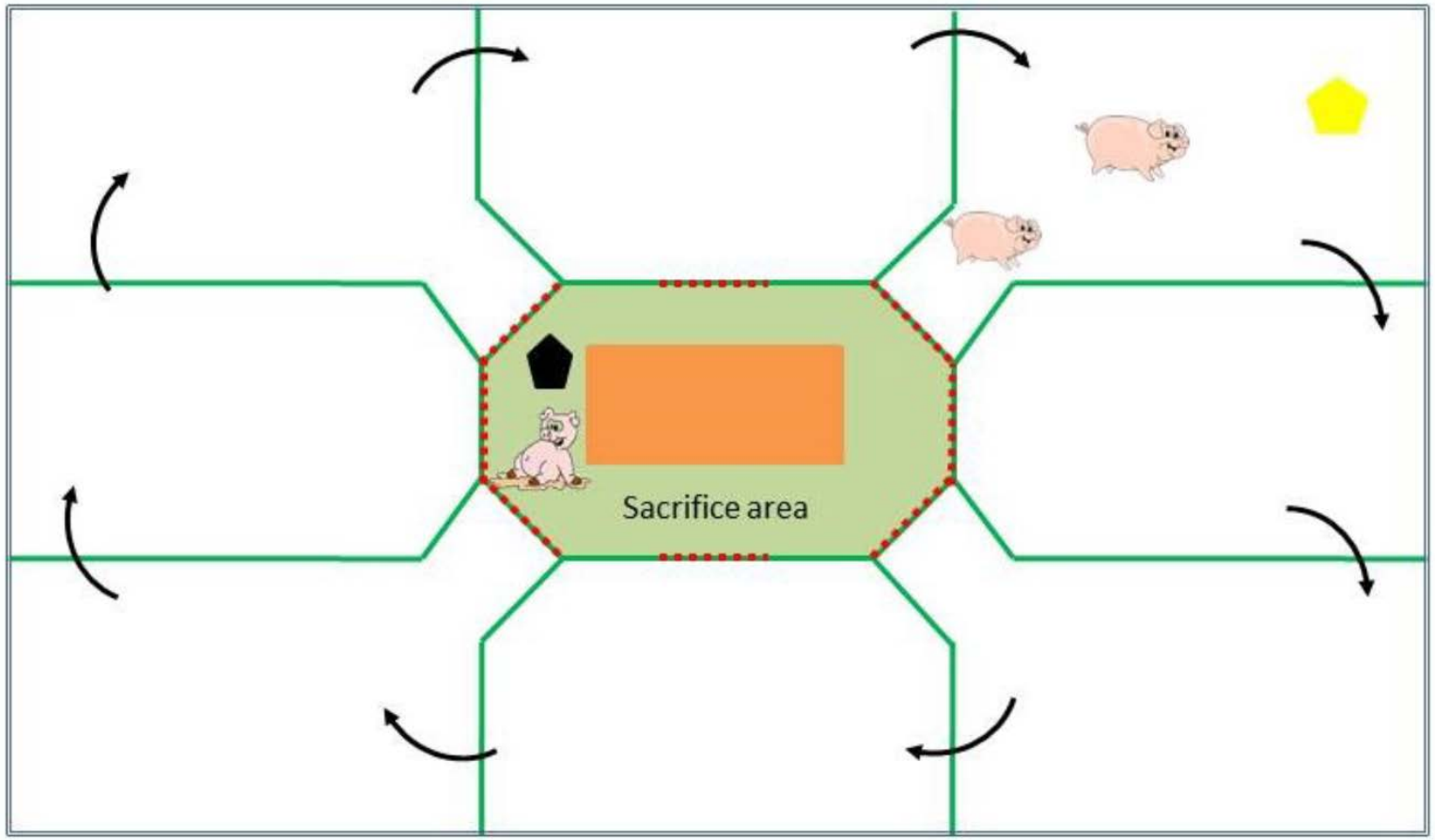
https://cefs.ncsu.edu/portfolio_tags/outdoor-hog-production/

# CEFS




*Picture shows a 0.37 ac paddock divided into nine sections: One central/ sacrifice area, and 8 "Grazing" plots used once a week*

# CEFS

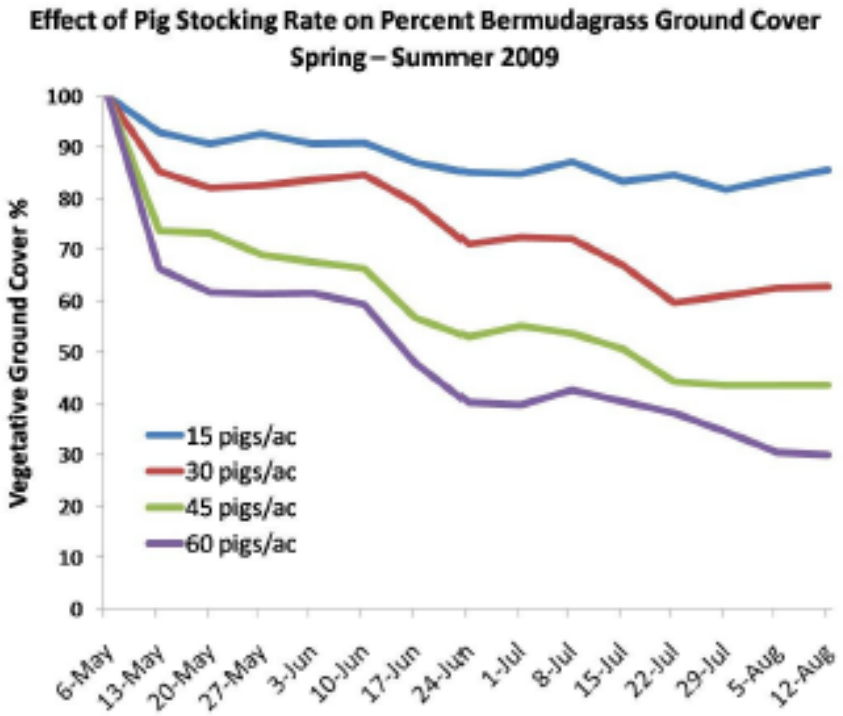


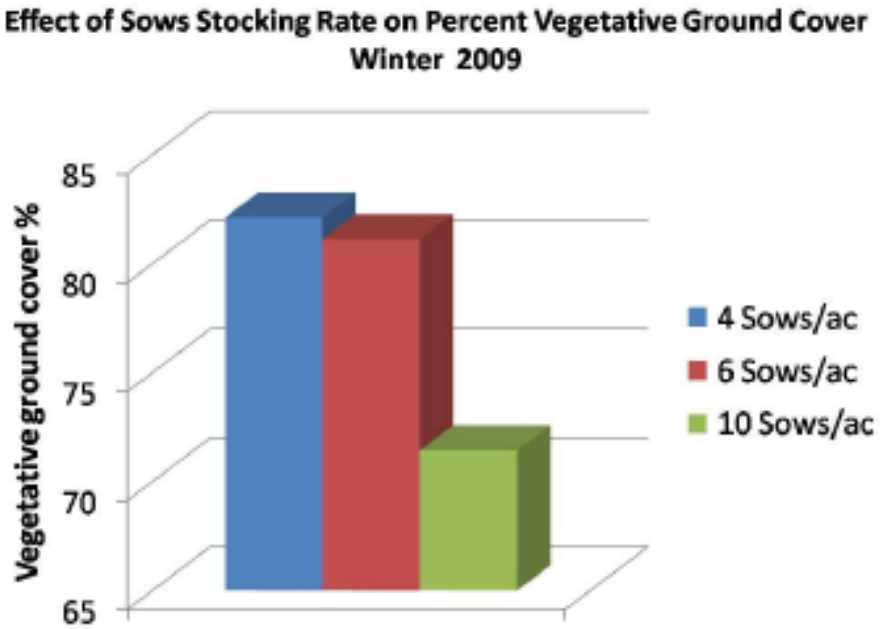

**LEGEND**

- Exterior fences: Woven wire or 4-wire electric wires
- Internal fence: 1-2 aluminum wire or poly wire
- Internal gate
- Shelter
- Waterer
- Feeder

*View of the sacrifice area of a 0.4 ac Bermudagrass paddock being managed rotationally with a stocking rate equivalent to 30 pigs/ac (3900 lb/ac)*

*Tall fescue pasture (0.42 ac) under rotational management. View of the sacrifice area at the end of the second growing cycle (12 weeks each). The stocking rate was equivalent to 20 hogs/ac (2600 lb/ac). Notice the location of shelter and drinkers and of the feeder in the grazing plot under use.*


Effect of Pig Stocking Rate on Percent Bermudagrass Ground Cover
Spring – Summer 2009
Vegetative Ground Cover %
100
90
80
70
60
50
40
30
20
10
0
15 pigs/ac
30 pigs/ac
45 pigs/ac
60 pigs/ac
6-May
13-May
20-May
27-May
3-Jun
10-Jun
17-Jun
24-Jun
1-Jul
8-Jul
15-Jul
22-Jul
29-Jul
5-Aug
12-Aug


Effect of Sows Stocking Rate on Percent Vegetative Ground Cover
Winter 2009
Vegetative ground cover %
85
80
75
70
65
4 Sows/ac
6 Sows/ac
10 Sows/ac

# Table 4. Potential vegetative cover crops to provide temporary soil cover during the "rest period" between groups of finishing animals

| Dry Lot Pen # | # pigs per group | # pigs per acre | 1st Use Period | Rest Period | Potential crops planted at high seeding rates to provide temporary cover during the dry lot rest period. | 2nd Use Period | Rest Period | Potential crops planted at high seeding rates to provide temporary cover during the dry lot rest period. |
|---|---|---|---|---|---|---|---|---|
| 1 | 28 | 15 | Jan-Apr | May-Jun | Crabgrass, Millet, Sudan, Teff, Lovegrass, Buckwheat | Jly-Oct | Nov-Dec | Cereal Rye &/or Brassicas |
| 2 | 28 | 15 | Feb-May | Jun-Jly | Crabgrass, Millet, Sudan, Teff, Lovegrass, Buckwheat | Aug-Nov | Dec-Jan | Cereal Rye &/or Brassicas |
| 3 | 28 | 15 | Mar-Jun | Jly-Aug | Crabgrass, Millet, Sudan, Teff, Lovegrass, Buckwheat | Sep-Dec | Jan-Feb | Cereal Rye &/or Brassicas |
| 4 | 28 | 15 | Apr-Jly | Aug-Sep | Crabgrass, Millet, Sudan, Teff, Lovegrass, Buckwheat | Oct-Jan | Feb-Mar | Cereal Rye &/or Brassicas or Ryegrass |
| 5 | 28 | 15 | May-Aug | Sep-Oct | Cereal Rye, Oats, Brassicas | Nov-Feb | Mar-Apr | Cereal Rye, Oats&/or Brassicas or Ryegrass |
| 6 | 28 | 15 | Jun-Sep | Oct-Nov | Cereal Rye, Oats, Brassicas | Dec-Mar | Apr-May | Crabgrass,Sudan, Buckwheat |

*Cereal rye and ryegrass mixture that could be harvested for nutrient removal or provide cover during the subsequent feed out period.*

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# Livestock and Pasture

The resources offered here deal with sustainable livestock production literally from the ground up. Pasture management, feeds and forages are covered by several publications and videos, while others address care and management for specific animals and marketing of the products derived from them. Whether you're an experienced or a beginning producer, you can find useful information relating to traditional livestock such as beef and dairy cattle, sheep, hogs and poultry, as well as introductions to alternative livestock options from bees to bison.

**Check out our Small Ruminant Toolbox**

It was developed in order to provide a collection of information for small ruminant producers and educators.

- **Cattle, Sheep, Goats, Hogs, Other Species, Animal Health and Nutrition**
- **Poultry**
- **Pasture, Rangeland, and Grazing Management**

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Published every Wednesday, the Weekly Harvest e-newsletter is a **free** Web digest of sustainable agriculture news, resources, events and funding opportunities gleaned from the Internet. See past issues of the Weekly Harvest.

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**What Is Sustainable Agriculture?**

We are here!

Away

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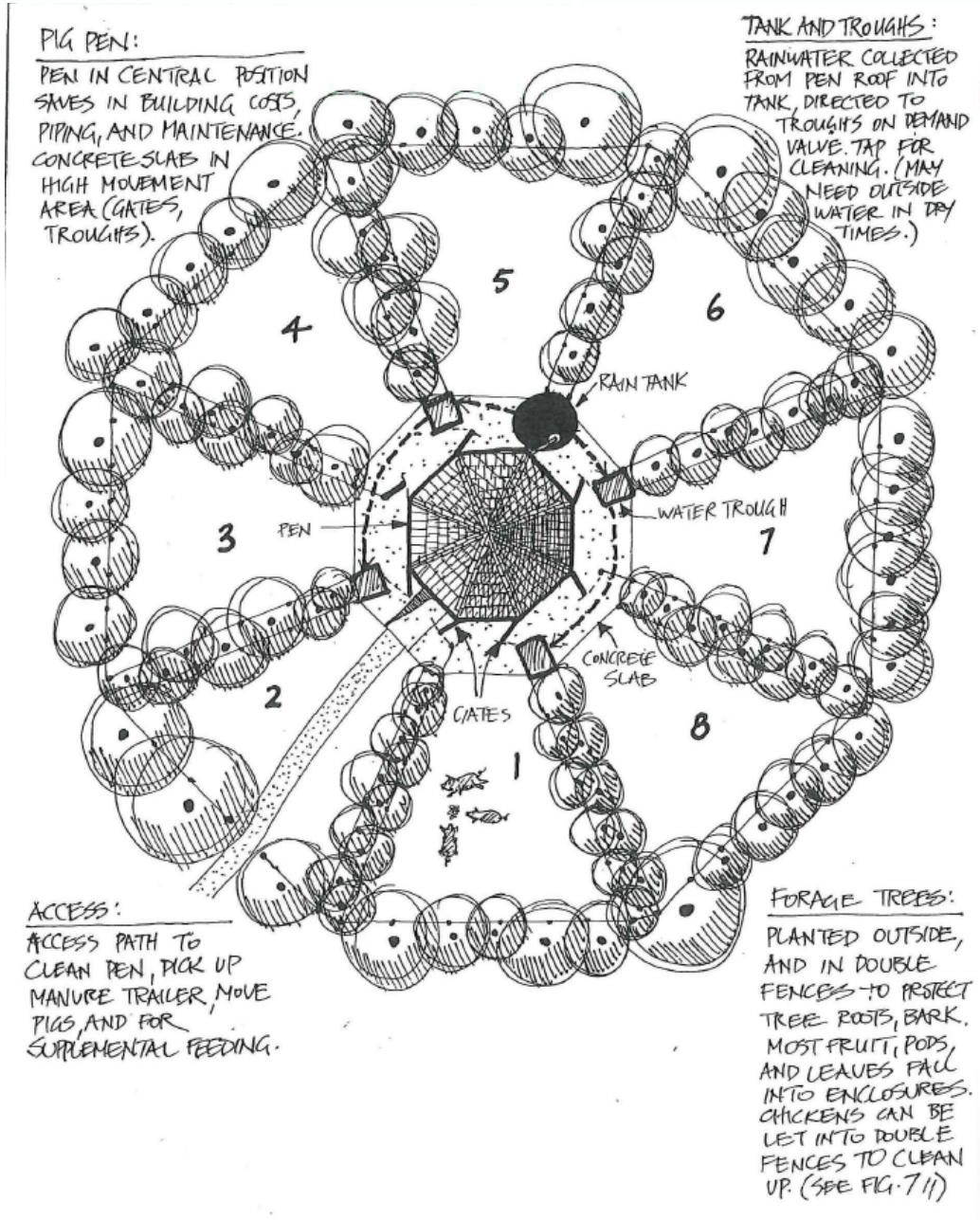
# Polyface Farms Pigaerator Pork

Polyface literally backed into the pig business many years ago as a way to build compost. When we feed hay to the cows, they eat and lounge in a pole shed that we bed down with wood chips, sawdust, and old hay to absorb the excrement. This bedding ferments in the anaerobic conditions created by the heavy cows walking on it. Added corn ferments and offers a tasty salary for pigs to aerate the bedding– hence PIGAERATOR. The oxygenation turns the entire deep bedding into a compost pile, which is the backbone of the farm's fertility program. During the summer and fall, the pigs are in special savannah pastures rotated every few days with electric fence.

# From Introduction to Permaculture Bill Mollison

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# Fences

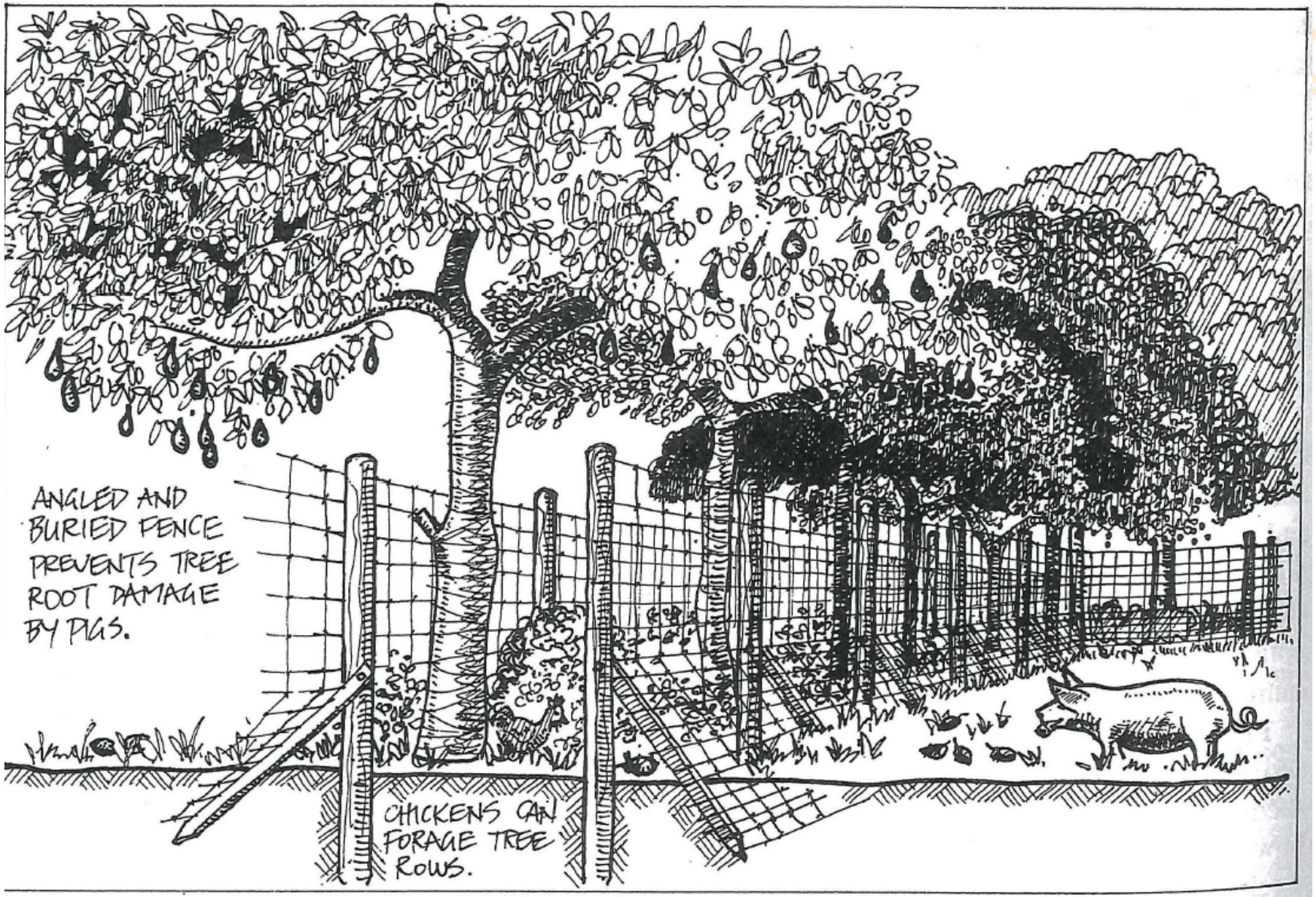
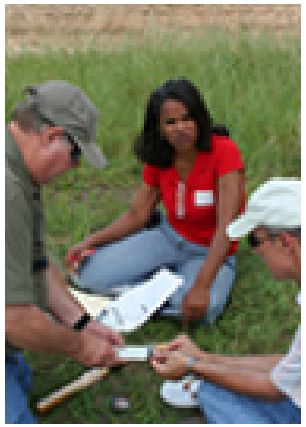



**FIGURE 7.11** View of pig grazing system with tree forages and fence arrangement to keep pigs from damaging

# Enhancing Standards

**NRCS National Technical Support Centers are available to help States with existing or new standards.**

## Technology Transfer and Assistance Team



The multidisciplinary Technology Transfer and Assistance Team provides direct technical assistance and technology transfer to the East service area states and Caribbean area. The team acquires and develops new technology, develops and maintains national technical standards and references, and builds collaboration and partnerships that lead to cutting-edge technology support and training.

**Table 1**
**Wire Height & Spacing**

| Fence type | Livestock type | Purpose* | Min Number of Wires | Height of Top Wire | Suggested Wire Spacing** |
|---|---|---|---|---|---|
| **Barbed Wire** (12.5 gauge standard; 12.5 guage, 2 strand, twisted, barbless; or 15.5 gauge high tensile) | Cattle | Containment | 4 | 48” | 12,12,12,12 |
| | | Deterrent | 4 | 48” | 12,12,12,12 |
| | Sheep/Goats | Containment | 6 | 48” | 6,6,6,8,10,12 |
| | | Deterrent | 5 | 36” | 6,6,6,8,10, |
| | Horses | Containment | 4 | 48” | 12,12,12,12 |
| | | Deterrent | 4 | 48” | 12,12,12,12 |
| | Hogs | Containment | 7 | 48” | 0,6,6,6,8,10,12 |
| | | Deterrent | 6 | 36” | 0,6,6,6,8,10 |
| | Deer/Predator | Deterrent | 8 | 60” | 0,6,6,6,8,10,12,12 |

# Farm Examples See Handout

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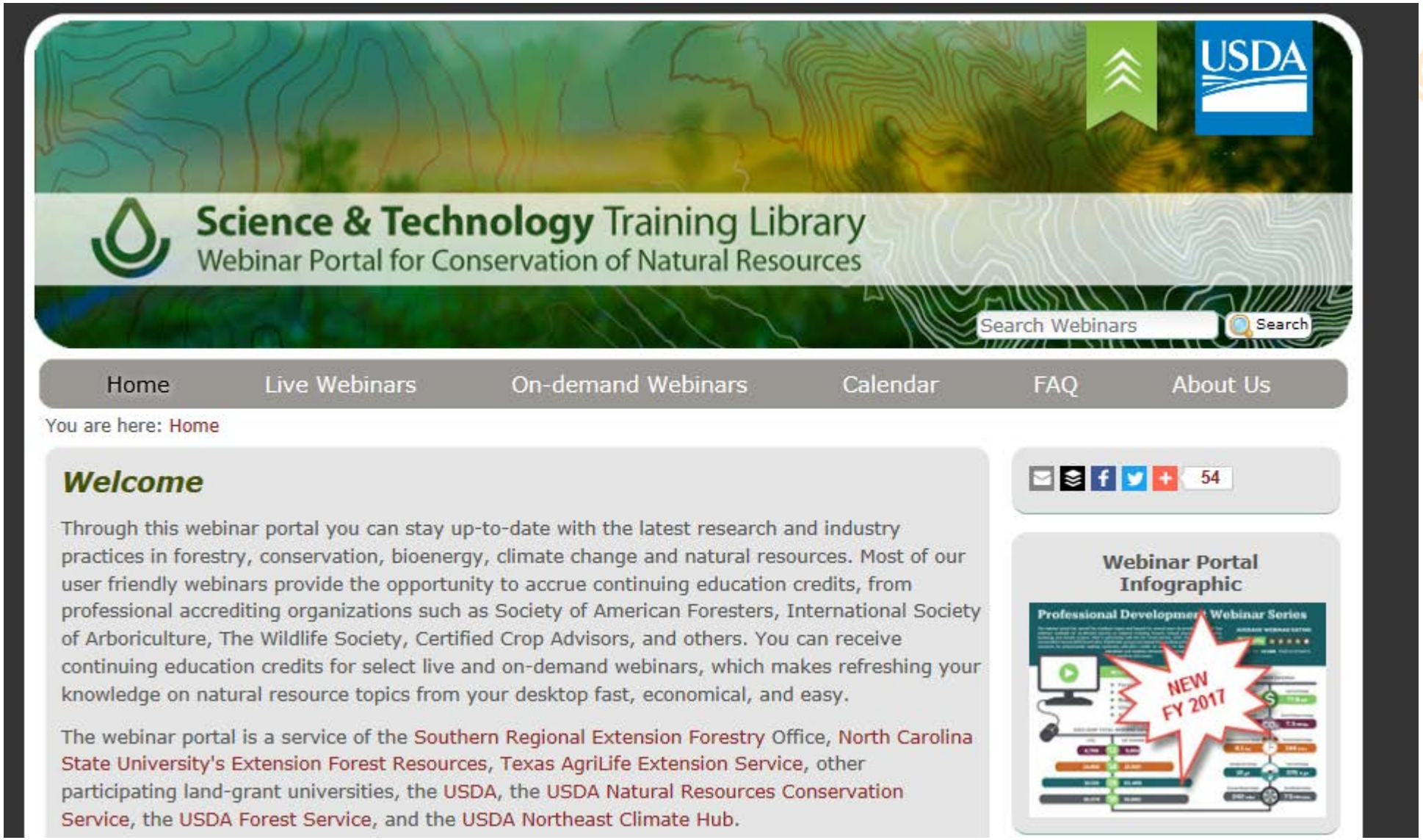
# Science and Technology Library




**http://conservationwebinars.net/**

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## Pastured Pig Rotation Explained

John Suscovich
2 years ago • 20,996 views
I did a time lapse of me moving fences to a new area here: https://youtu.be/ggdL0_NQmk0 Move the pigs when they need to move ...


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The Rodale Institute Organic Hog Facility opened in 2015 as a scalable model for farmers who want to begin similar pastured pork ...


## Make Money with Pastured Pigs

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Lumnah Acres
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## Corralling and sorting pastured pigs.

FarmBuilder
1 year ago • 73,352 views
Pastured pigs are great, right up until its time to catch and load them! In this video we are catching a larger group of pigs and ...

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# Questions?


Troy Bishopp “The Grass Whisperer” Deansboro NY

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