



NE Forage-based Challenges and Opportunities

Kathy Soder

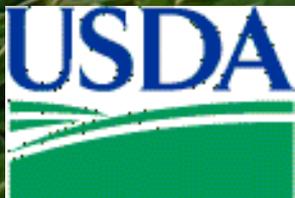
USDA-ARS Pasture Systems & Watershed Mgmt.

Research Unit

Forages and Pastures Special Symposium

2008 ADSA/ASAS joint meeting

Indianapolis, IN



Outline

- Current perspective
- Challenges
- Opportunities
- What's happening now

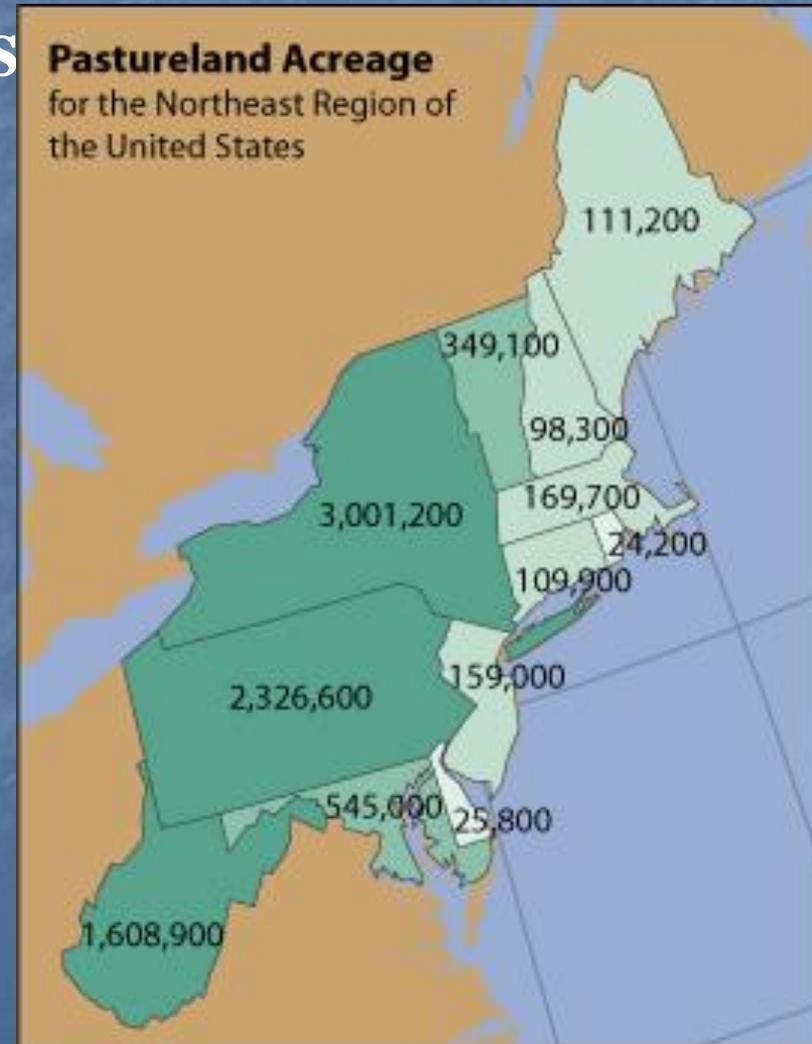


Current Perspective



NE Pasture Acreage

- 8.5 million acres
- Soil, site, climatic conditions limit other ag practices
- Often small parcels of steep and/or highly erodible land





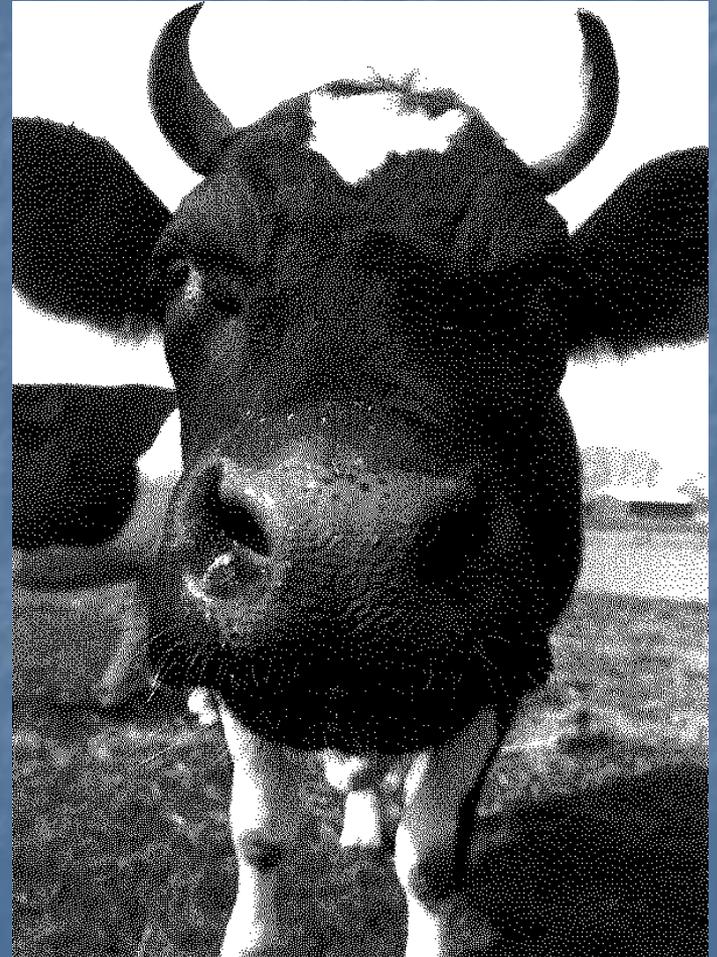
© 1992 MAGELLAN Geographix, Santa Barbara, CA



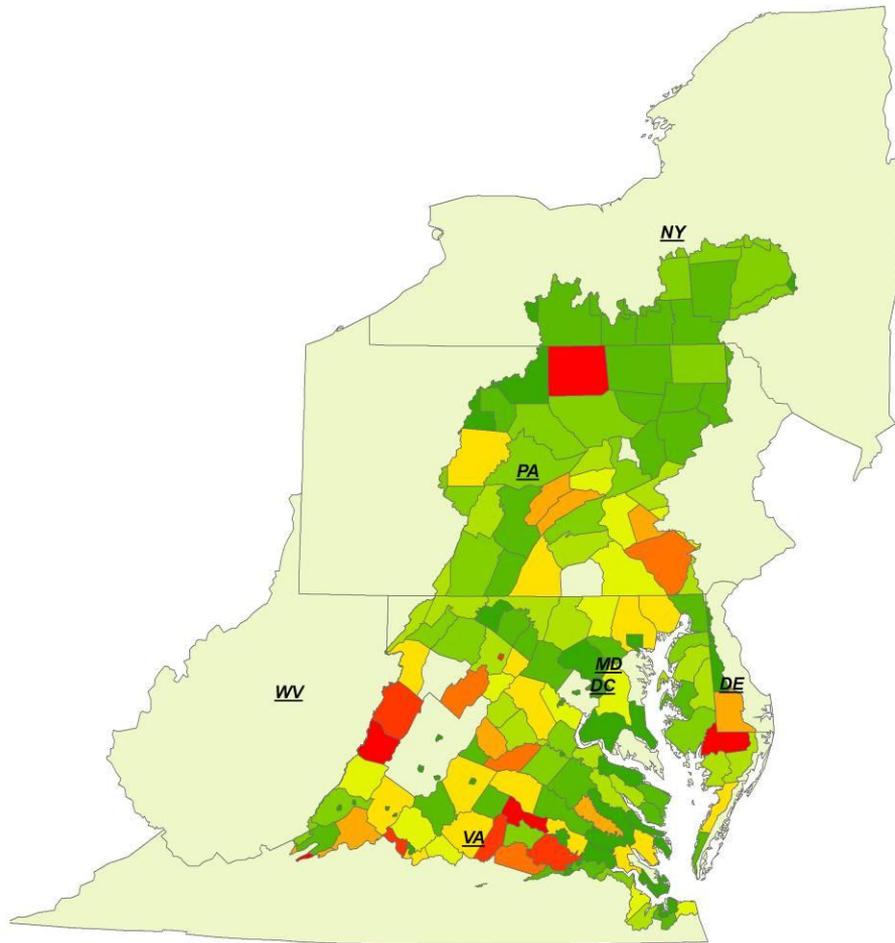
*

Livestock Inventory

- 1,486,900 Dairy Cows (18%)
 - 8,133 kg milk (9,325 kg)
- 563,900 Beef cows (1%)
- 272,000 Sheep (5%)
- 118,600 Meat Goats (5%)
- 30,900 Milk Goats (10%)



Chesapeake Bay Watershed County P balances



1:5,000,000

National Land Cover 2001

chesa_COUNTIES_Clip2

chesa_Counties_P.P





Nutrient Accumulation

- Many NE soils high in P and K
- Historical overfeeding of P and K
- Heavy manure application to crops
 - Especially around barn areas
 - Livestock allowed access to waterways
- High level of nutrient runoff





SOIL TEST REPORT FOR:

LOU SAPORITO
 USDA-ARS
 3702 CURTIN RD
 UNIVERSITY PARK PA 16802

ADDITIONAL COPY TO:

11/24/03 UMES
 Sampling

DATE	LAB #	SERIAL #	COUNTY	ACRES	ASCS ID	FIELD ID	SOIL
01/19/2004	S03-17635	113568	Centre			SIGMA	

SOIL NUTRIENT LEVELS		Below Optimum	Optimum	Above Optimum
¹ Soil pH	6.0	██████████		
² Phosphorus (P)	535 ppm			██
³ Potassium (K)	49 ppm			██
² Magnesium (Mg)	187 ppm			██

RECOMMENDATIONS: *(See back messages for important information)*

Limestone*: 3000 lb/A for a target pH of 6.5. **Magnesium (Mg)**: NONE
**Calcium Carbonate equivalent*

Pasture DMI for Organic Dairy Standards



NOSB Recommendations

- Ruminant livestock must graze pasture for the growing season but not less than **120 days**
- The grazed pasture must provide a significant portion of the total feed requirements but not less than **30% DMI** during the growing season



Challenges in the Northeast





Stereotypes

- Grazing has been viewed as a ‘step backwards’
- No ‘bragging rights’ at the coffee shop for top milk production
 - *But what about profitability?*
- Pasture..... On my ‘corn’ ground?????????
 - Competition for corn ground
 - Producers are taking 1st cut hay, and planting corn in late June
- NZ and Europe pasture are managed very intensively
 - “Cutting edge”

Current Economics

- Grain, fuel, fertilizer prices
- Disposable income is shrinking
- Will consumers still buy a 'specialty' product?
- Taxes can be high, and are increasing
 - Clean and Green

Bottlenecks

- **Mindset**
- **Custom USDA-inspected abattoirs**
 - Limited availability, expensive to start
 - PA custom abattoir spent \$1.2M 5-10 years ago
 - Adv. – may be existing vacant abattoirs available at reasonable prices
 - Liability issues/insurance
 - Regulations (HACCP)

Management Issues

- **Lack of animal husbandry skills in new farmers**
 - Own land, want to raise livestock
- **Current farmers often lack ‘next level’ of grazing management**
 - “Expert grazier” pool small
 - Lack of knowledge of cost of production
 - Many part-time operations
 - Grass-fed beef producers may need to ‘re-think’ pastures
 - May need dairy-quality pastures to produce high-quality grass-fed meat

Management Issues

- **Misconception: High-protein pasture is ‘bad’**
 - Some producers letting pastures get ranker
 - ↓ protein, but ↑ fiber
 - May not be advisable for lactating dairy cows
 - ↓ forage production
- **Low or no-grain for dairy cows**
 - What is optimum?



Opportunities in the Northeast

Growing Population

- **Greater demand for food**
 - **Local food**
 - **“carbon footprint” or “food miles”**
- **Affluent customer base**
- **Concerned with ‘open space’ and source of food**
- **Grass-based operations often better received/perceived by non-ag public**

Cooperatives

- **Direct marketing products**
- **Co-op owned abattoirs**
- **Transportation to custom/organic abattoirs**
- **Pooling transportation to auctions**

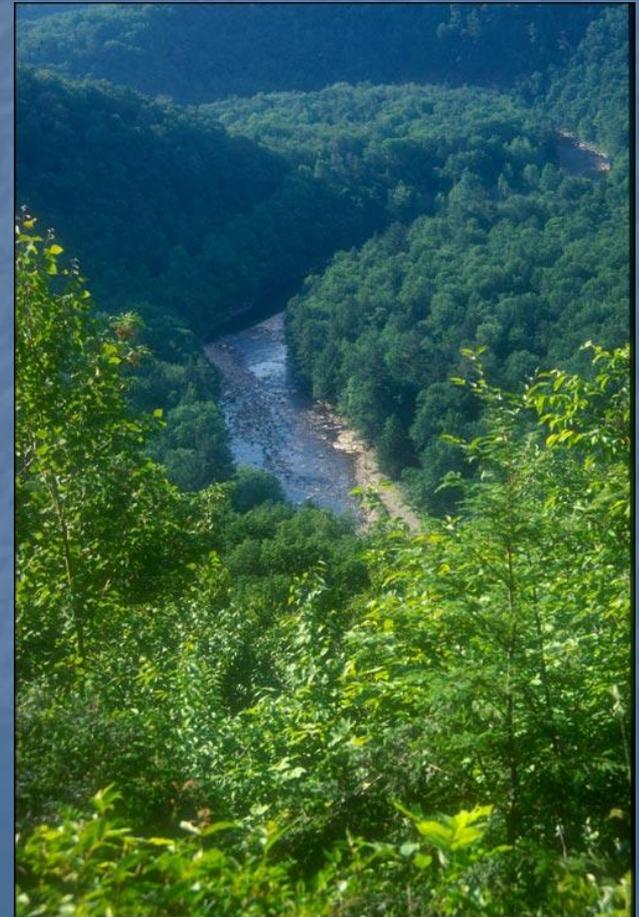
Custom grazing to solve problems

- Weed problems
- Overgrown open areas
- Powerlines
- 10-20 ac. 'lots'
- Wildlife habitat



Water

- Not limiting for the most part in the NE
- Could become future issue
- Climate changes?



Location, location, location

- Available ground suitable for grazing
 - Lease or own
 - Non-ag investors buying farmland to preserve
 - Abandoned land
- Competitive advantage- Proximity to consumers and markets
- Farm diversity
- Conservation programs
- Integrated Research Programs
- Support programs

Small Ruminants

- Add diversity to cattle operation
- Additional income source(s)
- Different grazing/browsing habits
- Rapidly growing ethnic population in NE
- Internal parasite control



Research Needs

- Genetics for pasture-based systems (esp. dairy)
- Grass-finished meat products
 - “Off”- flavors
 - Some groups actively market these ‘seasonal’ flavors

“The pasture was like a Monet painting. Everything was in bloom--purple and white clover, yarrow, orange and yellow paint brushes, blackberries, daisies, and buttercups.”

- (Promotional literature for Vermont Shepherd cheese)



'Boutique' Lamb from a PA Farm is Finding a National Following

by Steven Raichlen

As seen in *Los Angeles Times Syndicate*

"The flavor of our lamb changes with the seasons. Spring grasses contain wild onion and chives; summer grasses have lots of wildflowers."

Research Needs

- **Genetics for pasture-based systems**
- **Grass-finished meat products**
 - **“Off”- flavors**
 - **Some groups actively market these ‘seasonal’ flavors**
 - **Taste test panels can detect differences**
 - **Some customers like taste, others don’t**
 - **Cooking/Handling (toughness)**
 - **Human health benefits**
 - **Slaughter/processing procedures**

Research Needs

- Perennial forage species with ↑ energy content
 - Replace high cost concentrates
 - Less reliance on purchased feeds
- Pasture intake
 - Production often limited by pasture intake
 - How can we either ↑ pasture intake,
or
 - ↑ pasture utilization?

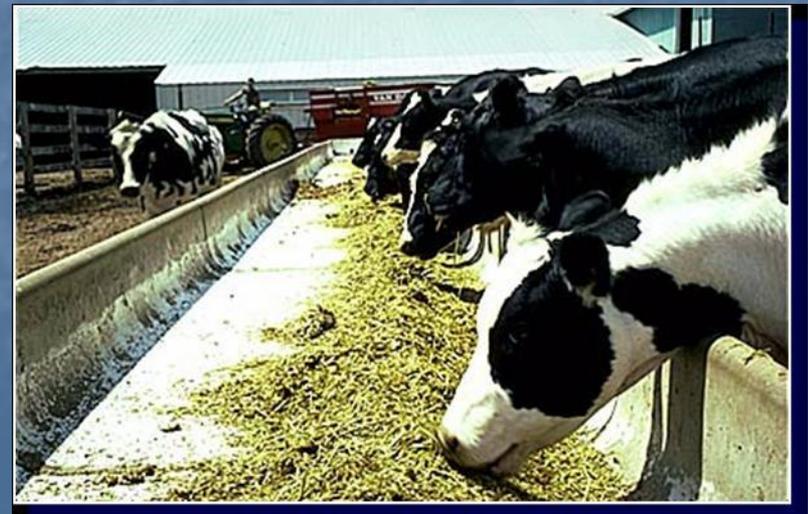
Research Needs

■ Grazing Behavior

- Need better understanding of processed driving diet selection and pasture intake
- Alter the forage to complement the animal/mgmt.
or
- Alter the animal/mgmt. to complement the pasture

Research Needs

- Supplemental feeding
 - Cost effective?
 - Improve nutrient utilization (N recapture)
 - Effective fiber
 - Additional energy
 - Effect on grazing behavior
 - Stretch pasture resources
 - limited land, summer slump



Research Needs

- **Increased pasture utilization**
 - Some dairies supplement TMR with pasture, not vice versa to stretch pasture or ↑ DMI
- **Low effective fiber in spring**
 - Can cause ↓ milk production
 - Farmers tend to over-supplement, then.....
 - Pasture ‘gets ahead’ of the herd, then summer quality ↓, milk production or ADG ↓
 - Mechanical harvest/clipping necessary, ↑ expenses

Research Needs

- **Less ‘religion’ and more ‘science’ in grass-based animal production**
- **Testing of many ‘alternative’ management strategies**
 - **‘Natural’ anthelmintics and Rx**
 - **Feed additives**
 - **Soil amendments**
 - **Need information on efficacy, safety, interactions, and withdrawal times**



What's Happening Now

The USDA-ARS Pasture Systems and Watershed Management Research Unit

Conduct research leading to the development of land, water, plant, and animal management systems, which ensure the profitability and sustainability of northeastern grazing and cropping enterprises while maintaining the quality of ground and surface waters

Northeast Pasture Research and Extension Consortium

- In 1994, the U.S. Senate Appropriations Committee, Senate Report 103-290
-to link livestock graziers and federal, state, land grant, and private research and extension groups into partnerships that will identify, develop, coordinate, and promote pasture research and extension leading to economically, socially, and environmentally sound and sustainable grazing-based livestock production systems for the NE U.S.
- Emphasis is on dairy, beef, sheep, goat, and horse enterprises.

Northeast Pasture Research and Extension Consortium

Research Priorities- 2006

- Determine the management strategies and costs of **transition or conversion from row crops** to productive and sustainable grazing lands and soils.
- **Quantify the economics** of whole-farm systems including the effects of breed selection, livestock diversification, and grazing management on animal and pasture health and well-being.
- **Evaluate new forage species and improved varieties** under grazing management and different climatic and soil conditions with emphasis on extending the grazing season.
- Determine the **environmental impacts and profitability of alternative supplemental feeding strategies** for animals on high-protein pastures.
- Evaluate the production and management aspects of pasture-based animal products for their **human health benefits**.
- Evaluate the **limiting factors and marketing opportunities in organic** dairy and livestock pasture-based production systems.

Northeast Pasture Research and Extension Consortium

Activities

- Bring farmers and researchers/extension together
- Annual meeting
- Letters of support for grant proposals
- Political action/support
- 65 members, over 150 collaborators

<http://www.umaine.edu/grazingguide>

Other Grazing Organizations/Activities

- PA Project Grass
- Franklin Co. (PA) Graziers
- PA Assn. for Sustainable Agriculture (PASA)
- “MASS GRASS”
- VT Pasture Network
- Grazing Lands Conservation Initiative (GLCI)
- Regional grazing groups in NY
- Grazing Conferences in nearly every state
- Organic industry
 - Northeast Organic Dairy Producers Alliance (NODPA)
 - Northeast Organic Farming Association (NOFA)
 - PA Certified Organic (PCO)

MARKETING



Northwest Finest

7% FAT

***NATURAL GROUND BEEF**
NO ADDED HORMONES
NO ADDED ANTIBIOTICS

***THIS BEEF IS MINIMALLY PROCESSED AND CONTAINS NO PRESERVATIVES OR ARTIFICIAL INGREDIENTS.**
FEDERAL REGULATIONS DO NOT PERMIT PRESERVATIVES IN GROUND BEEF

SAFE HANDLING INSTRUCTIONS
THIS PRODUCT WAS PREPARED FROM INSPECTED AND PASSED MEAT AND/OR POULTRY. SOME FOOD PRODUCTS MAY CONTAIN BACTERIA THAT COULD CAUSE ILLNESS IF THE PRODUCT IS MIS-HANDLED OR COOKED IMPROPERLY. FOR YOUR PROTECTION, FOLLOW THESE SAFE HANDLING INSTRUCTIONS.

- KEEP REFRIGERATED OR FROZEN. THAW IN REFRIGERATOR OR MICROWAVE. KEEP RAW MEAT AND POULTRY SEPARATE FROM OTHER FOODS.
- COOK THOROUGHLY.
- WASH WORKING SURFACES (INCLUDING CUTTING BOARDS), UTENSILS, AND HANDS AFTER TOUCHING RAW MEAT OR POULTRY.
- KEEP HOT FOODS HOT. REFRIGERATE LEFTOVERS IMMEDIATELY ON DISCARD.

Nutrition Facts
Serving Size: 4 oz. (112g)
Serving: 3 servings

Amount Per Serving		% Daily Value*
Calories 170	Calories from Fat 70	
Total Fat 8g		12%
Saturated Fat 3g		15%
Trans Fat 0g		
Cholesterol 70mg		23%
Sodium 65mg		3%
Total Carbohydrate 0g		0%
Dietary Fiber 0g		0%
Sugars 0		
Protein 24g		
Vitamin A 0%	Vitamin C 0%	
Calcium 0%	Iron 15%	

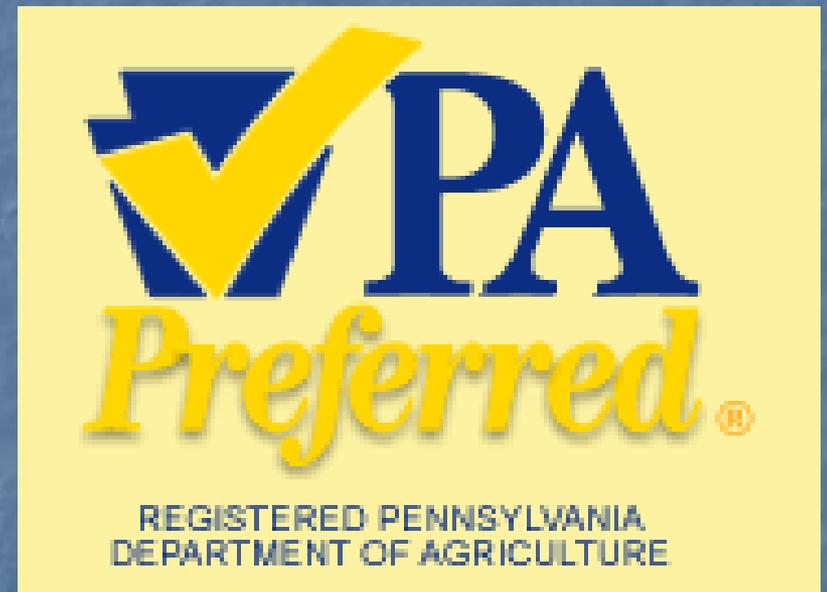
*Percent Daily Values are based on a diet of 2,000 calories per day. Your daily values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 80g	80g-240g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Carbohydrate	Less than 300g	300g
Dietary Fiber		

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4



“Locavores”



CSA

Community Supported Agriculture

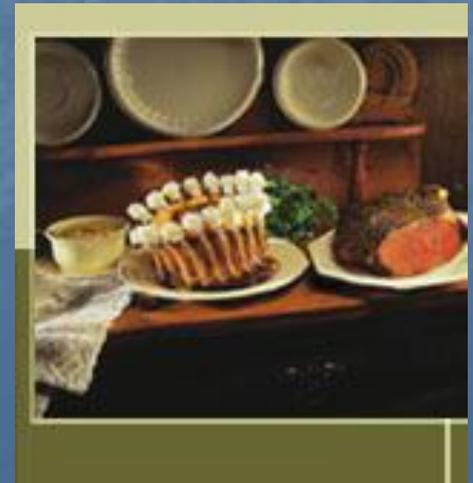


Northern Tier Sustainable Meats Cooperative, Inc.

- **Butcher and market grass-fed meats**
- **Supply Penn Tech College with 20,000 lb. of ground beef**
- **Provide organic butchering service**

Jamison Farm Lamb

- Slaughtering 5,000 grass-fed lambs annually
- Marketed to high end restaurants
- Mail order
- Marketed based on ‘seasonal’ flavor imparted by biodiversity of forages consumed

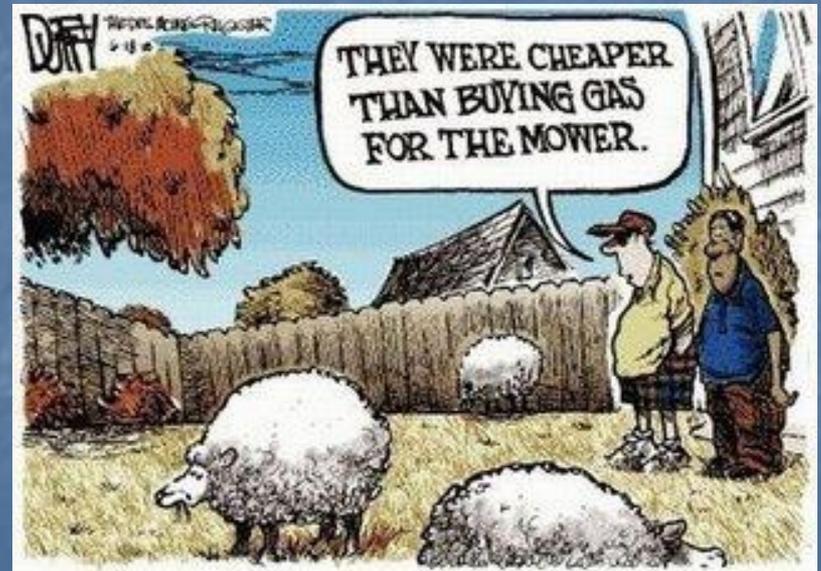
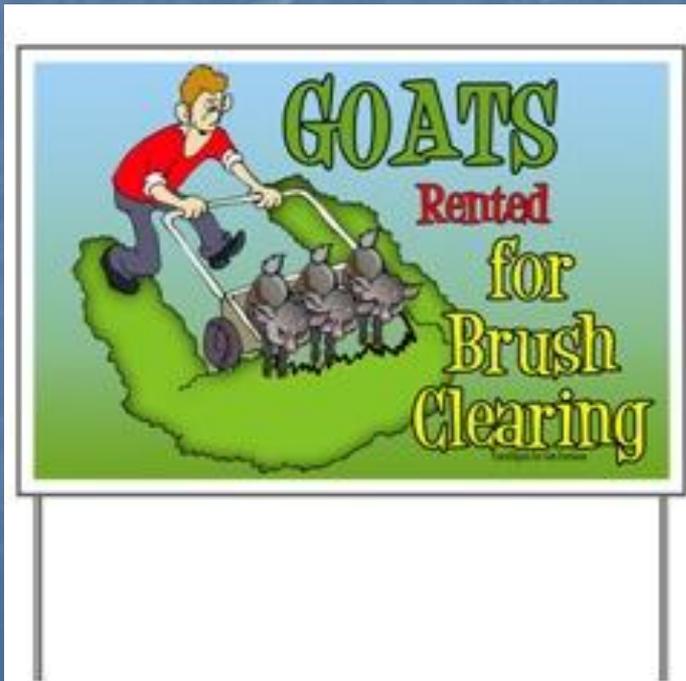


Ethnic markets

- **Large influx of ethnic communities in the NE**
 - **Cultures included lamb and chevon**
- **Sometimes require special butchering requirements**
- **Some want to butcher on farm**
- **Many are willing to pay for product**

Other Opportunities

- Custom raise dairy heifers on pasture
- “Bio” lawnmowers



Conclusions

- **Growing population can be a curse as well as a blessing**
- **Many opportunities in the NE**
- **Need to break away from some traditional methods**
- **Farmers must become aggressive marketers**
- **The future will look unlike anything we've seen in the past**



THE END