Intro to Equine and Specialty Species: Pennsylvania’s Other Livestock

• Welcome to Session IV of AG 101.
• You should be able to hear music – and can control the MP3 Player shown in your view.
• Program will begin at 1:00 PM.
• Helene McKernan, Penn State, Moderating
The Winter “Burst” focuses on Intro to Pennsylvania Farms and Livestock Operations

Session I
- Intro to PA Farms
- Intro to PA Farm Partners

Session II
- The Farmer: Social Influences
- The Farmer: Economic Influences

Session III
- Intro to PA Livestock Operations
- Cows, chicken, and pigs
The Winter “Burst” focuses on Intro to Pennsylvania Farms and Livestock Operations.

Session IV – 2/10/11
- Equine
- Specialized Species

Session V – 2/17/11
- Pre-farm visit preparation
- Biosecurity & other important info

FARM & FIELD VISITS
http://guest.cvent.com/d/vdqt1f
Your Perspectives about Equine & Specialty Species in PA

When you consider what might constitute "specialty species" in Pennsylvania, please check all that you believe the industry may include:

- Veal
- Llama
- Sheep
- Goat
- Deer
- Bison
- Emu
- Iguana
- Agouti

Graph showing the distribution of species preferences.

Penn State College of Agricultural Sciences • Cooperative Extension
• Program Focus of Session IV
  – *EQUINE* Dr. Ann Swinker, Penn State Dairy and Animal Science
  – *SPECIALTY SPECIES* Dr. Robert VanSaun, Penn State Veterinary and Biomedical Sciences
Equine Industry

• Equine are the fastest growing segment of the livestock industry.

• PA’s equine population has increased by 50% from 1993 to 2005 (170,000 to 255,000) but the density of the average equine/operation decreased from 10 to 4 head.

  (2005 American Horse Council’s Study, Washington, DC)

Not considered Agriculture
Recent Increase

Nationally and in Pennsylvania there has been an increase in the horse population due to:

• Newly introduced slot machines and increased purses for the state’s equine racing industry.
• The elimination of the slaughter processing industry has increased the number of un-wanted horses.
• Both the racing industry and general horse populations have increased dramatically in PA.
Use of US Horses

9.2 million horses (PA 255,000):

• 844,531 racing /race horse breeding,
• 2,718,900 showing,
• 3,907,000 recreation,
• 1,725,400 - other activities, such as farm/ranch work, rodeo, polo, police work, therapeutic riding and other horse related activities.

(American Horse Council’s Study, Washington, DC, 2005)
Pennsylvania Operations

- 64% of horse operations are involved with personal, recreational, or pleasure riding and/or driving (trail riding, youth, and showing).
Impact to U.S. & Pennsylvania

Direct economic effect on the US of $39 billion annually.

PA $8 Billion

Two million people own horses & 4.6 million Americans are involved in the industry.

PA 190,000 people involved in equine activities,
38,000 households in PA own horses & 31,000 operations house horses.

American Horse Council, Horse Industry Statistics Survey, 2005
Pennsylvania’s Equine Industry Inventory, Basic Economic and Demographic Characteristics, 2003
How Many Horse Farms in Pennsylvania?

31,000 operations which house horses (Average 8 horses)
23,250 are non-commercial operations
75 percent are on limited resources acreages

Top Five Counties by Total Equine Population:

1. Lancaster - 20,396
2. Chester - 15,504
3. York - 12,089
4. Washington - 8,572
5. Berks - 6,241
The Equine Owners
(source: HIA)

- College education, Professional
- Increasingly female 68%
- 35-50 years old (getting older)
- Average income – $48,600
- 97% ride for pleasure, 6% for competition
- “Rural Lifestyle” No agricultural background or previous rural connection
The Equine Owner
(source: USEF 2009)

• Average age – 39
• 85% female
• Average income
• Ride infrequently unless involved in competition
• 66% have a college degree
Horse Racing is a Man’s Sport

• 844,531 horses race in US. Racing impact of $26.1 billion and supports 383,826 jobs. (AHC 2005)

• PA 70% of equine owners are female and 30% are males.

• PA Racehorse ownership was just the opposite with 70% male & 30% female. (2003 PSU Economic Impact Study)
Land: PA Equine Operation Acreage

- 56% under 20 acres
- 21% under 5 acres
- 20%, 21 to 50 acres
- 14%, 50 to 100
- 11% over 100

1.14 million acres of open space
Few acre farmettes to thousand acre estates (average 52).
Equine land values, $4.8 billion.
Managing Horses
Fence is a Challenge
General - Equine Owners

• Manage horses with individual turnout & hours/day.
• Concept of rotational grazing??
• Eager to learn and want to learn and go green!
Sacrifice Area Construction

The size of the sacrifice area can range from a double box stall (~12’x24’) attached to a stall.

The long narrow enclosure will allow the horse to run and play.

1,000lbs. Horse will require 500sq. Ft. space

Soft footing, finish with sawdust, chips, hogfuel.
Digestive tract of the horse.

Figure 14. The horse’s digestive system.
Difference between Ruminants and non-Ruminants
Digestive system of horse

- rumen (15 to 30 gal.)
- reticulum (5 gal.)
- omasum (5 gal.)
- abomasum (3-5 gal.)
- stomach (5 gal.)
- small intestine (12 gal.)
- large intestine (30 gal.)

Digestive system of cow

- small intestine (14 gal.)
- large intestine (8 gal.)
- cecum
High Quality Forage
Horses have two grazing habits that makes management difficult

Highly selective grazers causing over grazing and avoiding of other areas

Close grazers

Spend 14-18 hrs/day
• Good quality hay/forage is sufficient feed for a mature horse that is ridden very little.
• With an increase in work, grain should be added to its diet.
Horse Owner’s Fears

Metabolic Problems
laminitis
Increased sugar concentrations in forage can cause:

Laminitis

Metabolic Problems:

Insulin Resistance
Cushing's Disease
Metabolic Syndrome, Insulin Resistance

Management to lower NSC:
• Safest Hays – Bermuda and Timothy --cut early in the day
  -cloudy day
  -recent rainfall
• Hay dried in the field for few days-even rained on hay.
Developmental Orthopedic Disease

Can be feed induced
Fescue Toxicosis

• Toxic varieties contain an endophyte that produces the toxin ergovaline. The toxin is found in all plant tissues and seeds.

• New endophyte-infected plants are propagated through infected seeds. Use endophyte-free plants.
Fescue Toxicosis in Mares, Results in Reproductive Problems

- Spontaneous abortions
- Prolonged pregnancy
- Difficult births
- No milk production
- Foal is stillborn or dies shortly after birth
- Mares have dystocias (McCann et al., 1992)
- Sweating during warm weather (Cross et al., 1995)
Conclusion

What are your limitations in altering the management of your horse operation?

Penn State University, Pennsylvania’s Equine Environmental Stewardship Demographic Characteristics, Jan. 2011.

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<td>Total</td>
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PENNSYLVANIA Ag 101

Specialty Species Operations

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Pennsylvania Ag 101

Specialty Species

• Veal operations
• Llama and alpaca (Camelids)
• Sheep
• Goats
• Deer (cervids)
• Other – bison, emu
Veal industry overview

• Estimates of PA being responsible for about 1/3rd of the country’s veal production
• Marcho Farms Inc. is the largest veal production company in the US (main facility in Harleysville, PA)
• All barns in US will switch to pull apart group housing by 2017
  – Young calves start in an individual stall, when they are ~8 wks old the dividers are removed and two calves are then per pen, eventually there will be up to 4 calves per large individual pen
• Calves receive their own feed, individual care and attention
Veal industry overview

• Typical farm has 250 calves, cared for by a farm family.

• Special-fed veal represents a $650 - $700 million industry.

• The special-fed veal industry contributes $250 million to the dairy industry through purchases of dairy by-products and calves.

• Bob Veal - Not in PA!
  – Slaughtered around 5 days of age
  – Approx. weight – 100lbs
Veal Operations

• Special-fed Veal Calves
  – all milk replacer diet, reared in temperature controlled buildings in stalls with the ability to interact with neighboring calves
    • Average dress weight – 450 lbs
    • Average time at rearing facility - 145 days

• Veal Barns
  – Temperature controlled, natural or fan ventilated
  – Follow “all-in/all-out” Ag biosecurity
Camelid industry overview

- ~ 300,000 camelids overall in the US:
  - Registered Llama/guanaco/cross-breeds = 157,545
  - Registered Alpacas = 87,546
  - Total = 245,091
- Top 4 alpaca farming states:
  - OH, WA, OR, CA
- Top 4 llama farming states:
  - OR, CA, TX, WA
- Average herd size is less than 50 animals
- Alpacas in PA:
  - Total= 5,739
  - Average herd size= 12
- Llamas in PA:
  - Total= 3,603
  - Average herd size= 5
Camelid industry overview

• Initial expansion of industry in 1980’s
• Industry focus on reproduction, sales of breeding animals ($600,000 for male alpaca!)
• Llama industry has “matured” and animal prices greatly decreased
• Increased interest in fiber industry for alpacas
• Softening of alpaca industry, more focus on fiber products, niche marketing
Sheep industry overview

• 2007 Census of Agriculture for PA:
  – Sheep 1 year and older = 62,828
  – Sheep + lambs = 96,883

• Average herd size (including lambs) = 26

• Production Systems:
  – Wool production
  – Meat production
  – Dairy production

• Niche marketing for wool, meat, milk products

Goat industry overview

• 2007 Census of Agriculture for PA:
  – Angora Goats = 1,298
  – Meat Goats = 43,619
  – Milk Goats = 14,297
  – Total = 59,214

• Average herd size = 12
Deer industry overview

- A large and growing industry in the US and Pennsylvania

- 2007 Census of Agriculture
  - 810 deer farms in PA (54% increase since 2002)
  - 23,451 deer (33% increase since 2002)
  - 118 elk farms in PA (30% increase since 2002)
  - 3,007 elk

- Sales growing at 12% per year
Deer industry overview

• US States (# farms)
  – Texas
  – Pennsylvania
  – Michigan
  – Ohio
  – Minnesota
  – Wisconsin

2007 Census of Agriculture - Deer, inventory, farms

Deer farming industry

- Production systems for rearing and breeding deer species in captivity

* Products
  - Antlers
  - Venison
  - Hides
  - Urine
  - Crafts

* Services
  - Hunting
  - Lodging
  - Dining
  - Observation

* Animal Sales
  - Breeding Stock
  - Hunting Stock
  - Semen
Bison industry overview

• 2007 Census of Agriculture
  – 2,707 bison in PA
  – 144 bison farms in PA
  – Average herd size= 19

http://www.flickr.com/photos/osiatynska/1448677132/
Operation Owners

• Wide range of backgrounds

• Production Ag owners – agricultural background
  – Veal producers
  – Some sheep and goat operations

• Hobby or secondary farm enterprises
  – Camelids
  – Some sheep and goat operations
  – Deer
  – Other specialty farms
Operation Owners

- Educational level spans the range, though many highly educated
- Limited to none agricultural background
- Agronomy enterprise is pasture-based, or purchased feeds
  - Limited understanding of agronomic practices
- Many looking for any level of support and help
- Internet is primary source of (mis)information
Minimum Standards of Care

• Water – free access to potable drinking water at all times

• Nutrition – adequate to sustain life and health

• Shelter – may be natural or man-made
  – provide animals relief from extreme weather (heat, cold, wet, windy)

• Mobility – enough room to move and exercise freely
Shelter facilities
Nutritional Programs

• Continuous access to potable water
• Daily access to clean, mold-free hay/nutritious pasture
• Feed supplements to complement forage (<50%)
  – Commercial products - energy/protein concentrate
  – Commercial products - energy/protein concentrate
  – Complete supplements
  – Byproducts, residues, etc
• Mineral sources
  – Free choice salt
  – Trace mineral salt
Pasture Systems

• Match animals and requirements to forage base

• Pasture stocking density a function of:
  – Agronomic species
  – Growing conditions
  – Animal units
  – Paddock size
  – Expected grazing time
Animal Management Concerns

• Fencing needs
• Housing
• Water resources – all seasons
  – Water quality
  – Water availability
• Nutrient management concerns
• Manure management
  – Disease spread
  – Water supply contamination
• Animal mortalities – composting, disposal options
Animal health concerns

- Transmissible spongiform encephalopathies
  - Scrapie in sheep and goats
  - Chronic wasting disease of deer
- Parasites – problematic in all species
  - Parasite resistance issues in small ruminants
  - Cross-species contamination, control
- Zoonotic disease concerns
  - Brucellosis (bison)
  - Tuberculosis (deer, bison)
  - Toxoplasmosis, Q-fever (sheep and goats)
- Others – Johne’s, pneumonia, foot disease
Biosecurity Concerns

• Animal traffic – on/off farm
• Quarantine facility – restricted entry
• Visitors – you!
  – Be aware of animal exposure
  – Previous farm visits
  – Disinfect boots, protective clothing
  – Park away from farm traffic
  – Always ask for permission to enter animal areas!
If you think you know
Penn State Cooperative Extension...
Think Again
• Recording of this session will be posted in the “AG DIALOGUE” box, along with a pdf of today’s powerpoint AFTER the live session at http://breeze.psu.edu/AG101

• Registered participants will receive post program/pre-program assessment survey following each live session. To register – visit http://guest.cvent.com/e/d/vdqt1f
NEXT on AG 101:

Pre-Farm Visit Prep

This session focuses on the upcoming Farm and Field Visits, paying attention to biosecurity and other important farm considerations.

- February 17—1:00 to 2:30 PM at http://breeze.psu.edu/AG101
- Register for AG101 at http://guest.cvent.com/d/vdqt1f