





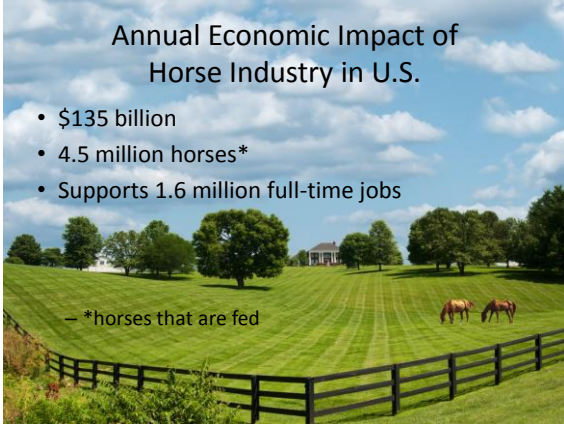
United States Horse Population Estimates

Year	Source	Estimate (Millions)	Population Covered
1986	American Horse Council	5.25	All horses
1986	American Veterinary Medical Association	6.60	"Pet" horses only
1991	American Veterinary Medical Association	4.90	"Pet" horses only
1996	American Horse Council	6.90	All horses
1996	American Veterinary Medical Association	4.00	"Pet" horses only
1997	USDA Agriculture Census	3.02	On-farm horses only
1998	USDA-NASS	5.25	All horses
1999	USDA-NASS	5.35	All horses
2001	American Veterinary Medical Association	5.10	"Pet" horses only
2002	USDA Agriculture Census	3.64	On-farm horses only
2005	American Horse Council/Deloitte Consulting	9.20	All horses
2007	USDA Agriculture Census	4.60	On-farm horses
2007	USDA Business Plan	5.80	All horses
2007	American Veterinary Medical Association	7.30	"Pet" horses only

Annual Economic Impact of Horse Industry in U.S.

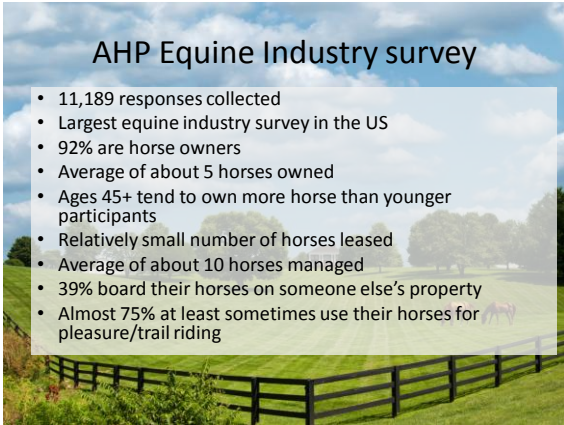
- \$135 billion
- 4.5 million horses*
- Supports 1.6 million full-time jobs

— *horses that are fed



AHP Equine Industry survey

- 11,189 responses collected
- Largest equine industry survey in the US
- 92% are horse owners
- Average of about 5 horses owned
- Ages 45+ tend to own more horse than younger participants
- Relatively small number of horses leased
- Average of about 10 horses managed
- 39% board their horses on someone else's property
- Almost 75% at least sometimes use their horses for pleasure/trail riding

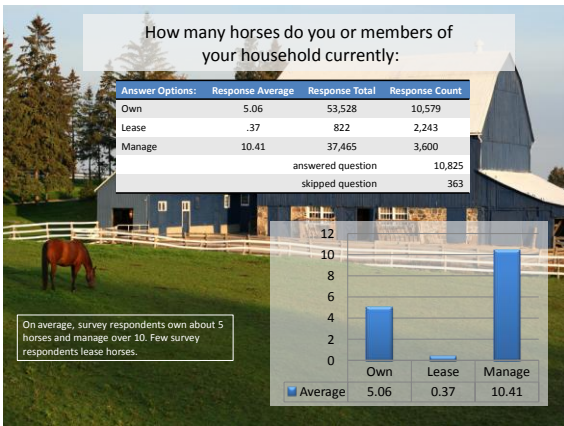


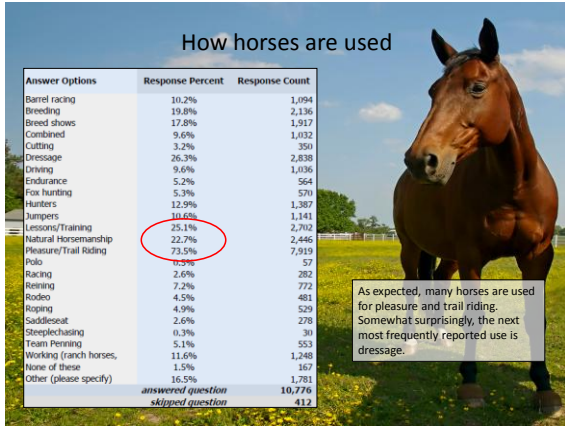
How many horses do you or members of your household currently:

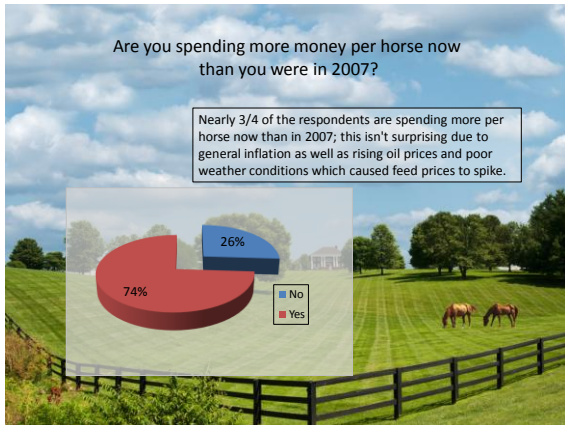
Answer Options:	Response Average	Response Total	Response Count
Own	5.06	53,528	10,579
Lease	.37	822	2,243
Manage	10.41	37,465	3,600
		answered question	10,825
		skipped question	363



On average, survey respondents own about 5 horses and manage over 10. Few survey respondents lease horses.









Vaccines used on your horse

Answer Options	Response Percent	Response Count
Rabies	72.7%	7,438
Tetanus	89.8%	9,194
Eastern equine	76.0%	7,779
Western equine	76.1%	7,788
West Nile virus	88.1%	9,020
Herpesvirus	29.4%	3,007
Other	30.0%	3,073
answered question		10,237
skipped question		951

At least 70% of the respondents indicated that their horses are vaccinated against Tetanus (89.8%), West Nile (88.1%), WEE (76.1%), EEE (76.0%), and Rabies (72.7%).

Horse health information

Source	Percentage
Veterinarian	92%
Magazines	75%
Oline	73%
Friends/other horse owners	67%
Farrier	48%
Other	14%

Health concerns

Answer Options	Response Percent	Response Count
West Nile virus	27.9%	2,827
Strangles	17.9%	1,820
Rabies	10.9%	1,104
Influenza	12.5%	1,266
EEE and/or WEE	12.8%	1,297
Herpesvirus	8.1%	820
EPM	26.3%	2,662
Parasites	36.3%	3,677
Skin disease	18.4%	1,863
Laminitis	47.1%	4,772
Joint problems	65.0%	6,592
Other lameness issue	49.4%	5,009
Respiratory problems	33.8%	2,416
Care of senior horse	52.6%	5,338
Other	19.5%	1,978
answered question		10,140
skipped question		1,048

Joint problems represent the horse health issue of most concern to respondents; care of the senior horse is the only other health issue receiving a majority of responses. This is interesting but not entirely surprising since the respondents in our sample, on average, own two horses over the age of 15.

Costs

- Cost of maintaining a horse has increased in the past few years
- 73.8% are spending more money per horse now than in 2007
- Top 3 issues facing the equine industry
 - Unwanted horses
 - Cost of keeping horse
 - Loss of trail and riding areas

Top 3 issues facing the equine industry

Answer Options	Response Percent	Response Count
Overburdened welfare groups	9.4%	994
Owners who don't understand horses	30.2%	3,176
Horses that aren't trained appropriately	17.6%	1,856
Lack of educational materials on horses	3.4%	358
Cost of horsekeeping	44.4%	4,676
Loss of trails and riding areas	35.3%	3,714
Unwanted horses and what to do with them	62.9%	6,627
Horses going to slaughter	17.0%	1,791
Not having the option of slaughter	30.0%	3,162
Ineffective welfare laws	10.0%	1,055
No marketing for the overall industry to entice new owners	13.0%	1,364
Lack of a unified voice in Washington	14.7%	1,550
Competition for open spaces from development, producers of biofuels, etc.	24.9%	2,622
Other	11.5%	1,214
answered question		10,531
skipped question		657

A majority of the respondents indicated that the issue of "Unwanted horses and what to do with them" represented the top issue facing the equine industry. The cost of horse keeping, the loss of trails and riding areas, owners who don't understand horses, and not having the option of slaughter were also selected as key issues needing attention.

Summary of Survey

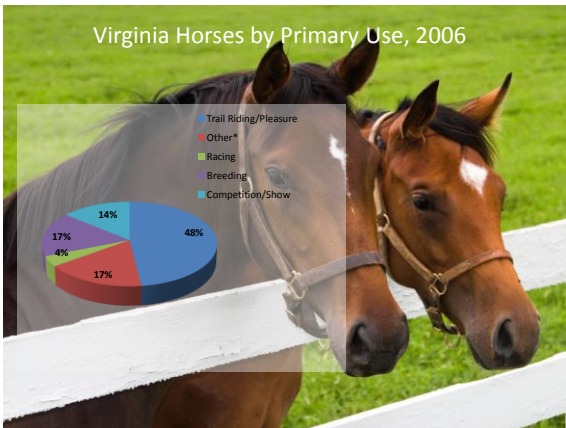
- Respondents age 45 and up are most likely to remain at the same level of participation.
- The general result is that the likelihood of increased participation is decreasing in the age of the respondent but increasing in income levels.
- Income is largely insignificant in predicting future levels of participation.
- Based on the results in the survey, the aggregate amount of participation is likely to remain roughly the same, although increases will be observed in some areas and decreases will be observed in others.



Virginia's Horse Industry

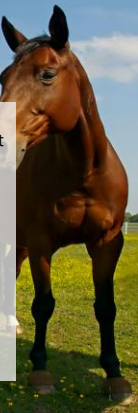
Virginia Horse Population by Breed, 2006

Breed	Number	Percent of Total
American Saddlebred	7,300	3.4
Appaloosa	9,400	4.4
Arabic and Anglo-Arabian	13,200	6.1
Belgian	3,000	1.4
Hanoverian	2,200	1.0
Miniature horses	5,800	2.7
Morgan	2,800	1.3
Paint/Pinto	10,900	5.1
Paso Fino	1,400	0.7
Pecheron	2,700	1.3
Quarter Horse	49,000	22.8
Standardbred	4,000	1.9
Tennessee Walker	15,500	7.2
Thoroughbred	30,900	14.4
Mules, donkeys	13,400	6.2
Ponies	13,800	6.4
Other equine	29,700	13.8
Total	215,000	100.00



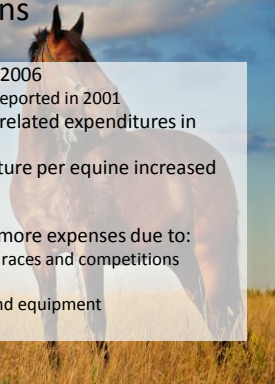
5 factors for continued growth and development

1. Availability of affordable undeveloped land
2. Maintenance of an agricultural infrastructure that provides the materials, services and facilities needed for breeding, training, stabling, feeding and caring for horses
3. A healthy pari-mutuel racing industry
4. Quality show and competition facilities and venues such as the Virginia Horse Center, Commonwealth Park, and Great Meadows Event Park
5. An active calendar of shows, competitions and other equestrian events



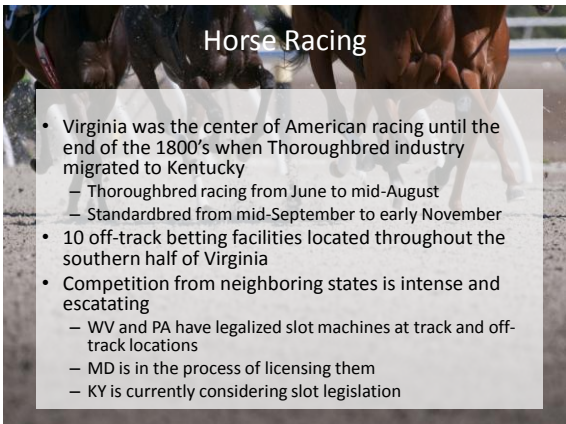
Horse Operations

- 41,000 horse operations in 2006
 - 41% increase from 29,000 reported in 2001
- Over \$780 million in horse-related expenditures in 2006
- Estimated average expenditure per equine increased nearly 9%
 - \$3,642 in 2006
- Race horses typically incur more expenses due to:
 - Transportation to and from races and competitions
 - Training and upkeep
 - Need for specialized tack and equipment



Horse Racing

- Virginia was the center of American racing until the end of the 1800's when Thoroughbred industry migrated to Kentucky
 - Thoroughbred racing from June to mid-August
 - Standardbred from mid-September to early November
- 10 off-track betting facilities located throughout the southern half of Virginia
- Competition from neighboring states is intense and escalating
 - WV and PA have legalized slot machines at track and off-track locations
 - MD is in the process of licensing them
 - KY is currently considering slot legislation

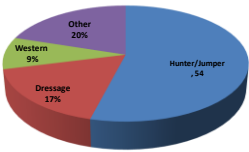


Shows, Competitions, and Other Events

- Active calendar of horse shows, competitions, and other horse related events
- Some are restricted to particular breeds or emphasize a specific type of competition
- Competition season occurs mainly in the late spring, summer, and early fall
- May is the busiest month
 - December – least active
- Average length of shows/competitions
 - National shows – 3.3 days
 - Regional events – 2.7 days
 - State events – 1.9 days
 - Local shows – 1.1 days
- Most common event is hunter/jumper shows



Virginia Horse Shows and Competitions by Discipline, 2010



Virginia Horse Show and Competition Attendance Estimates, 2010

Category/Type	Number
Attendees	
In-county	428,287
Other in-state	379,554
Out-of-state	131,031
Total	938,871
Employees	5,207
Vendors	2,782

Virginia Horse Event Attendance Characteristics, 2010

Item	Category	Percentage		
		Colonial Downs	OTB	Show/Competition
Visiting for event?	Yes	81.5	59.3	81.1
	No	18.5	40.7	8.9
Reasons for attendance:	Participant	7.8	0.0	66.8
	Spectator	92.2	100.0	33.2
Age:	Under 25	3.9	1.2	9.1
	25-44	23.3	28.4	29.9
	45-64	53.5	50.6	54.5
	65 or older	19.4	19.8	6.5
Education:	Some High School	0.0	0.0	4.1
	High School	11.7	25.6	9.5
	Some College	28.9	42.3	22.2
	Bachelor's Degree	30.5	17.9	35.8
	Graduate Degree	28.9	14.1	28.4
Gender:	Male	59.4	81.9	20.6
	Female	40.6	18.1	79.4
Residence:	In-county	9.9	32.6	16.4
	In-state, out-of-county	79.5	45.3	50.4
	Out-of-state	10.6	22.1	33.2



Impacts of the Virginia horse industry

- Largest employment effects
 - Agriculture and service sectors
 - Trade and construction
- Industry purchases
 - Agriculture (farming, farriers and groomers)
 - Construction
- Largest component of impact is related to the expenditures of Virginia horse owners

Virginia Total, Direct, Indirect and Induced Impacts of Horse Industry, 2010				
Impact	Employment	Labor Income	Value-added	Total Sales
Direct	12,098	\$323,567,325	\$347,346,016	\$642,927,067
Indirect	1,288	\$66,090,711	\$108,945,789	\$198,293,499
Induced	2,705	\$112,752,202	\$213,529,230	\$360,795,434
Total	16,091	\$502,410,239	\$669,821,036	\$1,202,016,001

Impact by component

- **Largest component is related to expenditure of Virginia horse owners**
- **Horse operations:**
 - 12,685 jobs
 - \$410.1 million in labor income
 - \$526.1 million in value-added
 - \$926.3 million in total sales
- **Shows and competitions**
 - 2,294 jobs
 - \$59.3 million in labor income
 - \$92.6 million in value-added
 - \$172.6 million in total sales
- **Pari-mutuel racing activities:**
 - 1,112 jobs
 - \$32.9 million in labor income
 - \$51.1 million in value-added
 - \$103.2 million in total sales

Distribution of Value-added Impact by Component, 2010

Component	Percentage
Horse Operations	78%
Shows and Competitions	14%
Racing	8%

- **Largest concentration of economic impacts is in Northern Virginia**
 - Fauquier and Loudon counties each have over 800 jobs attributable to the horse industry
 - Largest employment impact is in Rockbridge County (estimated 1,331 jobs stimulated)
 - New Kent County – economic impact of 789 jobs

Horse Industry Expenditures

- Direct expenditures generated
 - horse operations such as farms, breeding facilities, and boarding facilities
 - Pari-mutuel race facilities and spectators
 - Horse show and competition providers, spectators, and out-of-state participants
- Largest category of expenditure is purchase and upkeep of horses
 - Feed and bedding

Equine Economics

Top five equine expenditures in VA 2006 were:

1. Feed & Bedding	\$99,648,000
2. Equipment Purchases	\$92,007,000
3. Labor Expenses	\$74,178,000
4. Capitol Improvements	\$72,574,000
5. Equine Purchases	\$63,638,000

Virginia Equine Survey, 2006

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Equine Economics

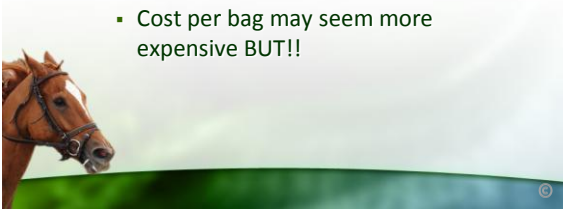
- Majority of cost = Feed
- 90% of equine operations fed grain concentrate/energy source beyond hay or pasture
- 80% of this feed was purchased in bags from a retail store
- 70% of equine operations fed an additional vitamin/mineral supp

NAHMS, 2005

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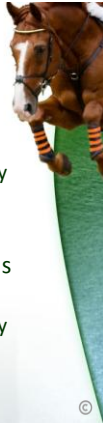
Good Quality vs Poor Quality Feeds

- Decreased feeding rate
- Highly digestible ingredients
- Incorporates technology to increase nutrient availability
- Cost per bag may seem more expensive BUT!!



Cost per head per day!!

- If a 50-pound bag of feed costs \$12.00
 - ✓ \$0.24/pound
 - ✓ Recommended minimum of 6 pounds / day
 - ✓ Cost per day = \$1.44
- Another feed costs \$15.00 for 50 pounds
 - ✓ \$0.30/pound
 - ✓ Recommended minimum of 4 pounds / day
 - ✓ Cost per day = \$1.20



Quality

- **Guaranteed Analysis doesn't tell you ANYTHING about the digestibility or quality of the feed.**
- Just because the %CF or %CP are values you expect doesn't mean quality.



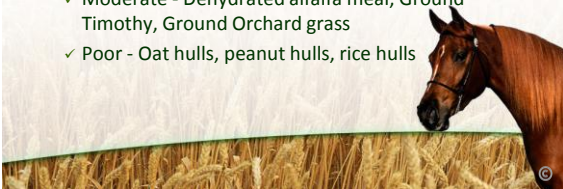
Fiber Quality

- Historically fiber was used as a filler in grain concentrates
- Horse evolved to eat a high fiber diet
- Feeds shifted to high fat, high quality fiber
- Decreased digestive disturbance



Fiber Quality

- All fiber sources are not of equal value to the horse.
- Fiber Quality is a matter of digestibility
 - ✓ Good - Dried beet pulp, soybean hulls
 - ✓ Moderate - Dehydrated alfalfa meal, Ground Timothy, Ground Orchard grass
 - ✓ Poor - Oat hulls, peanut hulls, rice hulls



Fiber Quality

- Low-roughage or poor quality roughage diets can = digestive disturbances:
 - ✓ hindgut acidosis
 - ✓ colic
 - ✓ gastric ulcers
 - ✓ behavioral problems
- Course roughage with low digestibility or particularly course fiber has been observed to impaction colic.



Protein Quality

- Type & amount of **essential** amino acids.
- Lysine, Methionine and Threonine.
- The only way to assume quality of the protein is to read the ingredients.
 - ✓ Soybean meal, dehydrated alfalfa meal ✓
 - ✓ Wheat middlings and flaxseed meal ✗



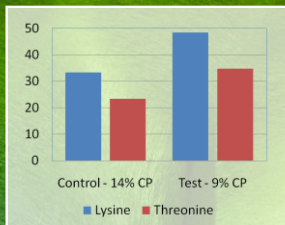
Protein Quality

- **GOOD**
 - ✓ 12% crude protein feed - Soybean meal, dehydrated alfalfa meal and milk-based ingredients (Whey).
- **BAD**
 - ✓ 12% crude protein feed – Wheat Midds as the main protein source (Collective term – “Grain Byproducts”).



Quality not Quantity!

- Growing Thoroughbred foals
- 14% CP vs. 9% CP
- No difference in BW, ADG, physical measures



Stanjar et al., 2001



Protein Quality

- Increasing protein quality rather than quantity has advantages:
 - ✓ More efficient utilization by the horse
 - ✓ Less contamination of pasture by excreted nitrogen

Stammar et al., 2001

©



Environmental Impact

- Excess minerals
- Whatever is not used by the horse is excreted and may impact soil quality, water quality and pasture quality

Lawrence, 2004

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Manure Disposal

Method	%	Std. Error
Routine garbage pickup	2.6	(0.3)
Hauled to landfill	1.5	(0.2)
Hauled away, other than to landfill	10.9	(0.6)
Applied on fields on the operation where any livestock graze	37.2	(1.0)
Applied on fields on the operation where no livestock graze	42.0	(0.9)
Manure/waste bedding allowed to accumulate or left to nature	32.4	(1.0)
Sold or gave away	16.9	(0.7)
Other	2.3	(0.3)

NAHMS, 2005

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Environmental Impact

- 1100lb horse - maintenance
- Endogenous losses = 16mg/day
- Diet A
 - ✓ 46 mg of Cu
 - ✓ 35% available
 - ✓ 16 mg of Cu available to meet the daily endogenous loss
 - ✓ 30 mg of copper from the diet would be excreted into the environment.

Lawrence, 2004



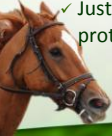
Environmental Impact

- 1100lb horse - maintenance
- Endogenous losses = 16mg/day
- Diet B
 - ✓ 23 mg of Cu
 - ✓ 70% availability
 - ✓ 16 mg of Cu available to meet the daily endogenous loss
 - ✓ 7 mg of copper from the diet would be excreted into the environment.

Lawrence, 2004

Environmental Impact

- Effects of Excess Copper In Dairy Manure Applied to Cool Season Forage Grasses
- Decreased growth rate & plant quality in Timothy and Orchard grass plots (root weight & new shoots)
 - ✓ Just Cu: what about Sodium selenite, excess protein (N)



Fis et al., 2008

Summary

- The **QUALITY** of the ingredients **DOES MATTER!!!**
- The guaranteed analysis can be met with poor quality ingredients - condition and performance of your horse will be decreased.
- Poor quality protein and fiber are not well digested by the horse.





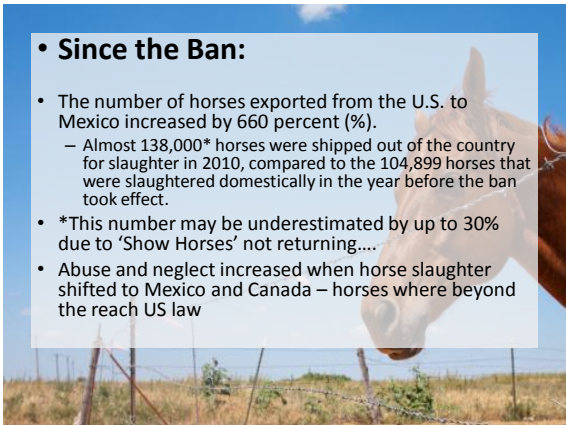
- The last U.S. slaughterhouse that butchered horses closed in 2007 in Illinois, and animal welfare activists warned of massive public outcry in any town where a slaughterhouse may open.





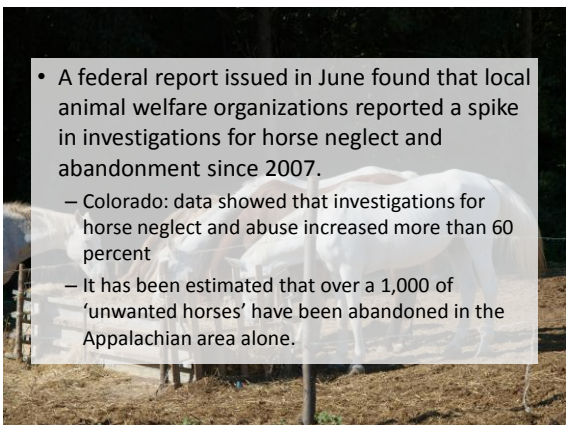
Did you know....

- Congress never banned horse slaughter but gave inspection powers to the Agriculture Department in 1996.
 - In 2006, it voted to halt federal inspections, which essentially ended the industry.
- Industry withered in 2006 when the government could no longer inspect plants that butchered horses for consumption and the meat couldn't be sold

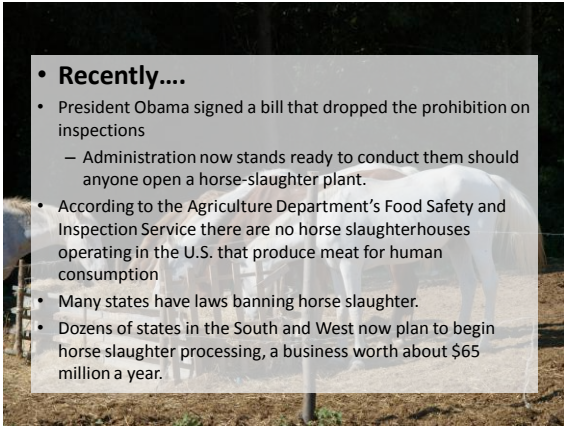


• Since the Ban:

- The number of horses exported from the U.S. to Mexico increased by 660 percent (%).
 - Almost 138,000* horses were shipped out of the country for slaughter in 2010, compared to the 104,899 horses that were slaughtered domestically in the year before the ban took effect.
- *This number may be underestimated by up to 30% due to 'Show Horses' not returning....
- Abuse and neglect increased when horse slaughter shifted to Mexico and Canada – horses where beyond the reach US law

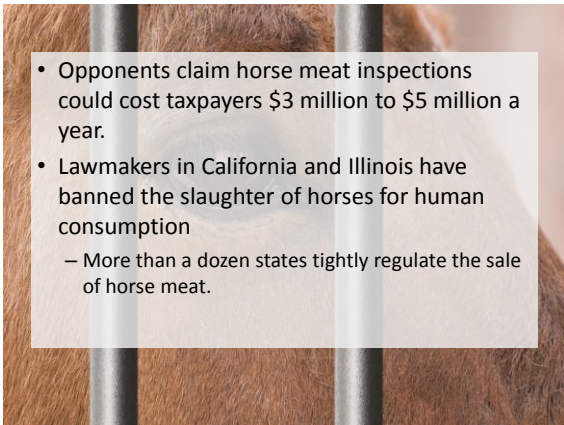


- A federal report issued in June found that local animal welfare organizations reported a spike in investigations for horse neglect and abandonment since 2007.
 - Colorado: data showed that investigations for horse neglect and abuse increased more than 60 percent
 - It has been estimated that over a 1,000 of 'unwanted horses' have been abandoned in the Appalachian area alone.



• Recently....

- President Obama signed a bill that dropped the prohibition on inspections
 - Administration now stands ready to conduct them should anyone open a horse-slaughter plant.
- According to the Agriculture Department’s Food Safety and Inspection Service there are no horse slaughterhouses operating in the U.S. that produce meat for human consumption
- Many states have laws banning horse slaughter.
- Dozens of states in the South and West now plan to begin horse slaughter processing, a business worth about \$65 million a year.



- Opponents claim horse meat inspections could cost taxpayers \$3 million to \$5 million a year.
- Lawmakers in California and Illinois have banned the slaughter of horses for human consumption
 - More than a dozen states tightly regulate the sale of horse meat.



- Pro-slaughter activists say the ban had unintended consequences:
 - increase in neglect
 - abandonment of horses
- They estimate a slaughterhouse could open in 30 to 90 days with state approval and eventually as many as 200,000 horses a year could be slaughtered for human consumption.
 - Most of the meat would be shipped to countries in Europe and Asia, including France and Japan.
- The practice of Americans dining on horse meat is virtually non-existent in this country, where the animals are treated as beloved pets and iconic symbols of the West.



Conclusions

- The horse industry is an evolving but steady market.
- The feed industry must adapt to the changing demographics.
- Consumer knowledge and environmental impact concerns will continue to increase.
- The 'unwanted horse' situation will continue to be an issue for the foreseeable future.
