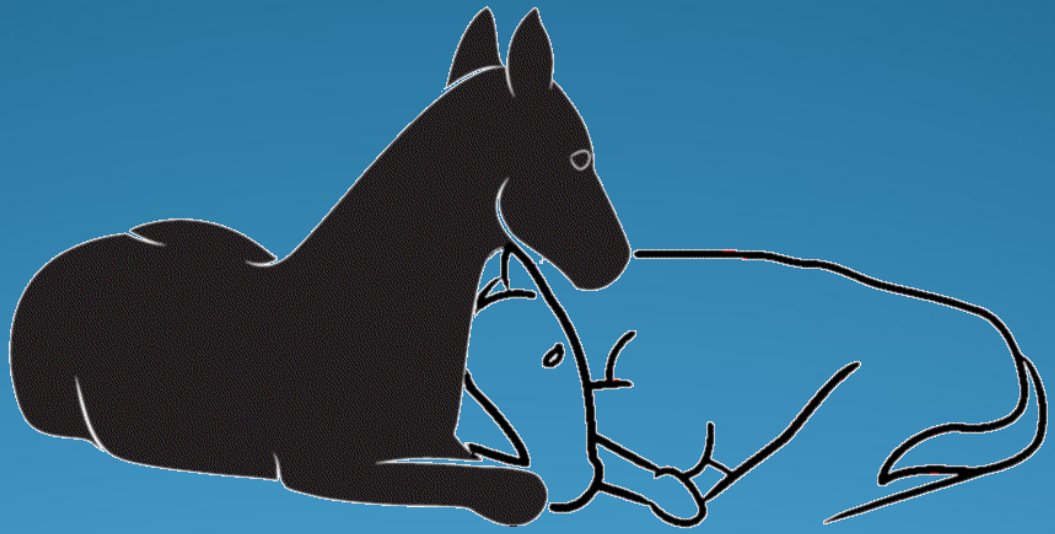
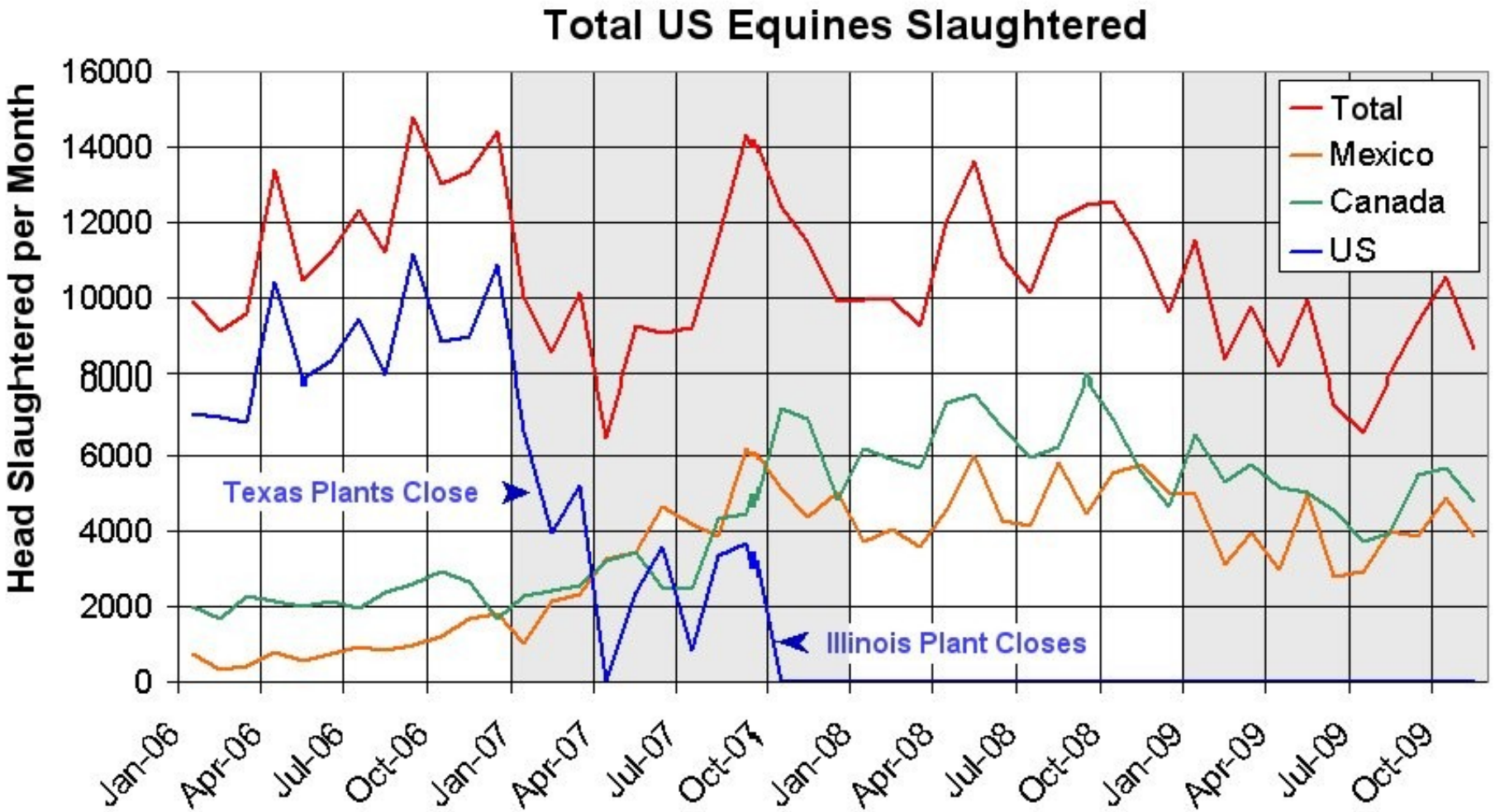
Drug Residues in US Horsemeat



Equine Welfare Alliance

Presented by John Holland, Pres. EWA

to the Finance, Ways and Means Committee


Total US Equines Slaughtered
Head Slaughtered per Month
16000
14000
12000
10000
8000
6000
4000
2000
0
Total
Mexico
Canada
US
Texas Plants Close
Illinois Plant Closes
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Apr-09
Jul-09
Oct-09

Many equine medications not approved for use in food animals.

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Food and Chemical Toxicology

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Association of phenylbutazone usage with horses bought for slaughter: A public health risk

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ABSTRACT

Sixty-seven million pounds of horsemeat derived from American horses were sent abroad for human con-

Horses are not raised as food animals in the United States and, mechanisms to ensure removal of horses treated with banned substances from the food chain are inadequate at best.

ous and lethal idiosyncratic adverse effects in humans. The number of horses that have received phenylbutazone prior to being sent to slaughter for human consumption is unknown but its presence in some is highly likely. We identified eighteen TB race horses that were given PBZ on race day and sent for intended slaughter by matching their registered name to their race track drug record over a five year period. Sixteen rescued TB race horses were given PBZ on race day. Thus, PBZ residues may be present in some horsemeat derived from American horses. The permissive allowance of such horsemeat used for human consumption poses a serious public health risk.

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A B S T R A C T

Sixty-seven million pounds of horsemeat derived from American horses were sent abroad for human consumption last year. Horses are not raised as food animals in the United States and, mechanisms to ensure

Phenylbutazone (PBZ) is the most commonly used non-steroidal anti-inflammatory drug (NSAID) in equine practice.

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Phenylbutazone is banned for use in any animal intended for human consumption because it causes serious and lethal idiosyncratic adverse effects in humans.

highly likely. We identified eighteen TB race horses that were given PBZ on race day and sent for intended slaughter by matching their registered name to their race track drug record over a five year period. Sixteen rescued TB race horses were given PBZ on race day. Thus, PBZ residues may be present in some horsemeat derived from American horses. The permissive allowance of such horsemeat used for human consumption poses a serious public health risk.

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Adverse Effects

Phenylbutazone

- Carcinogen
- Agranulocytosis – Loss of infection-fighting white blood cells
- Aplastic Anemia – Bone marrow suppression 94% mortality
- Liver failure

Metabolite Oxyphenbutazone

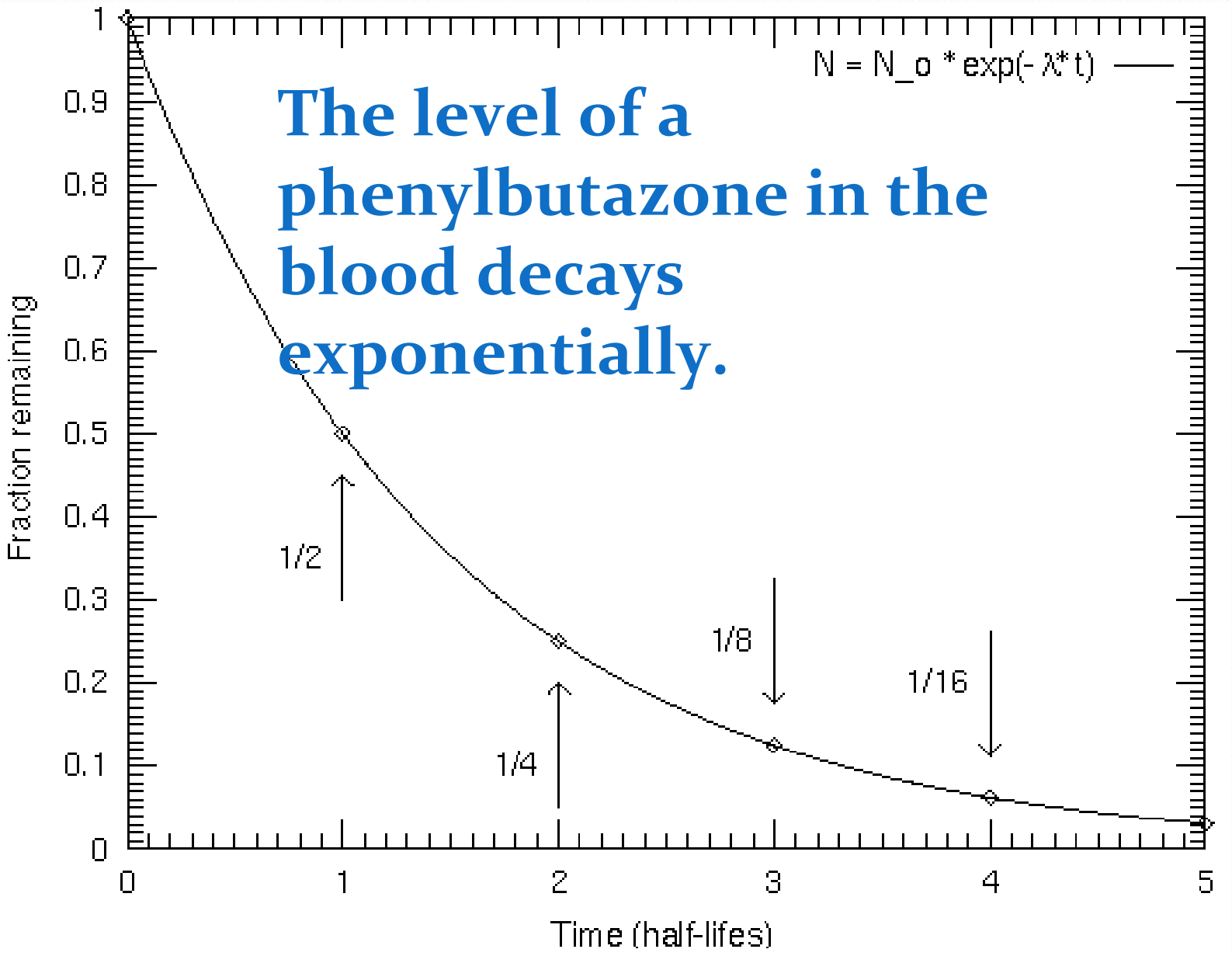
- Agranulocytosis – Loss of infection-fighting white blood cells
- Aplastic Anemia – Bone marrow suppression 71% mortality
- Thrombocytopenia – Loss of platelets (increased bleeding)
- Leucopenia – Abnormal decrease in white blood cells
- Pancytopenia – Abnormal decrease of all blood cells & platelets

Thoroughbred race horses were chosen because they can be identified by a lip tattoo and unlike other breeds their drug records are available.

Horses have 1.76 times as much blood per pound of body weight as cattle.

Horse Meat

Beef


N = N_o * exp(- λ* t)
The level of a phenylbutazone in the blood decays exponentially.
Fraction remaining
Time (half-lifes)
1/2
1/4
1/8
1/16
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
1
2
3
4
5

Results - 100% for Slaughtered Horses

Table 2
Data on PBZ administration and slaughter date.

Thoroughbred horse	Date of last known PBZ administration	Date horse sent to slaughter	Approximate time interval (months)
1	6/17/2006	4/18/2008	10
2	6/28/2007	4/18/2008	10
3	9/2004[a]	9/2004	1
4	2/09/2008	4/21/2008	2
5	3/2/2003	3/2003	1
6	12/13/2006	4/18/2008	16
7	6/03/2008	10/17/2008	4
8	9/17/2007	9/2007	0.5
9	–[b]	6/20/2008	0.25
10	10/14/2007	4/11/2008	6
11	03/01/2007	4/18/2008	13
12	10/07/2004	7/2008	45
13	10/30/2004	1/2005	3
14	5/07/2008	10/17/2008	5
15	9/06/2003	4/22/2004	7
16	3/24/1993	3/1993	0.25
17	10/29/2004	11/2004	0.25
18	11/17/2004	2008	48

Documents received from the USDA/FSIS confirm findings:

In response to a letter under the Freedom of Information (FOIA) act, the United States Department of Agriculture (USDA) indicated that during an "exploratory project" they found two of twenty-four horse carcasses tested (8.3%) that were violative for PBZ in 2004–2005. The USDA also stated that they determined PBZ levels in equine fat samples in 2002 and 2003 and none was detected. Horse carcasses were not among those animal carcasses tested for PBZ during the year of 2006, the year that horses were under Federal Inspection by the Food Safety and Inspection Service (FSIS), the USDA's Public Health Regulatory Agency. This agency works with the

New EU regulations for horse slaughter

- **July 31,2010 – All equines slaughtered in third countries for the EU market will require a certificate documenting any medication in the past 6 months.**
- **July 31, 2013 – All equines slaughtered in third countries for the EU market will require lifetime medication records.**
- **No wild equines except zebras will be accepted.**

Summary

- Race horses were followed in the peer-reviewed study because their race track drug records could be obtained on a public database.
- Race horses were identified by their lip tattoo through the Jockey Club.
- All 18 thoroughbred (TB) race horses sent to slaughter were given PBZ. The time interval between PBZ administration and slaughter date varied from a week to 48 months.
- At least 9,000 pounds of contaminated horsemeat was consumed by people who believed it safe.

Summary continued

- PBZ and its metabolites are eliminated by exponential decay. **Therefore, there will always be PBZ residue in horsemeat and any other food-producing animal given the drug.**

- Adding to this issue is the fact that horses have 1.76 more blood than cows. Since almost all of the PBZ is retained in the bloodstream and an extensive network of blood vessels permeate every organ including muscle (steak), it is very possible that PBZ contaminates more horse meat and PBZ residue may in fact be higher in horsemeat than in beef.

- Previous findings from FSIS showed 8.3% of the horse carcasses were contaminated with PBZ. This fact lends substantial validation to the peer-review study and would extrapolate to indicate approximately 5.5 millions pounds of PBZ contaminated American horsemeat are being shipped per year.

The Future of Horse Slaughter

In EU countries, horses are tracked with a "passport" microchip.

Without such a system, US horses will soon be banned from sale for human consumption in the EU.

Horsemeat is no longer used in pet food in the US and only a small amount is used by zoos.

The slaughter market for American horses decreased 20% in 2009 and may soon dwindle away.