An HSUS Report: Food Safety Risks Associated With U.S. Horse Slaughter

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Abstract

Meat originating from U.S. horses may contain residues from substances banned by the U.S. Food and Drug Administration and the European Union for use in animals intended for consumption. Phenylbutazone, for example, is commonly administered to U.S. horses and has been associated with life-threatening reactions in humans. Requiring a thorough drug history for each U.S. horse intended for human consumption may help circumvent human health risks.

Introduction

According to the Food and Agriculture Organization of United States, an estimated 9.5 million horses reside in the United States.[1] The American Veterinary Medical Association defines the horse as a "companion animal," along with dogs and cats.[2] Horses are utilized for service, recreation, and competition in the United States.[3] Despite their multi-faceted views of the horse, the U.S. population largely considers the consumption of horsemeat taboo.[4] In the state of California, for instance, eating horsemeat is restricted under the state's Criminal Code[5] and horse slaughter is illegal in Florida[6] and Illinois.[7] Given the attitude towards equids and the lack of demand for horsemeat in the United States, they are defined as non-food producing animals by the Food and Drug Administration (FDA).[8]

Despite the U.S. population's disinterest in horsemeat, it remains a part of the diet of some consumers in other countries, such as France, Japan, and Italy.[9] In 2007, a combination of state laws prohibiting horse slaughter and a simultaneous de-funding of United States Department of Agriculture (USDA) inspections by Congress[10] lead to the closure of the few, mainly foreign-owned, horse slaughter plants that operated within the United States.[11,12,13] In November 2011, this defunding of USDA horse slaughter inspections was omitted from a spending bill signed into law. While new funds are not being provided for the USDA's resumption of horsemeat inspections, the ban on domestic horse slaughter has been lifted.[14]

The 2007 provisions did not end the slaughter of U.S. horses for human consumption. Rather, the closing of U.S. slaughterhouses almost doubled the production of horse meat in Canada in 2007, with approximately 40% of the horses being slaughtered imported from the U.S.[15] In 2012, the European Commission released their findings of a 2011 audit which noted that 85% of the horses slaughtered in a Canadian processing plant originated from the United States.[16] The United States also exports its horses to plants in Mexico for local and foreign consumption.[17]

Since U.S. horses are primarily used for companionship and competition rather than consumption, drugs may be administered without taking food safety implications into account. This is especially pertinent in regards to the administration of the substance phenylbutazone (PBZ). The presence of PBZ—as well as many other FDA-banned substances—in U.S. horses destined for slaughter results in the high likelihood of contaminated horsemeat, which poses a potentially serious risk to the health of human consumers.[18,19]

Phenylbutazone

In 1949 the potent nonsteroidal anti-inflammatory drug (NSAID) PBZ became available as a treatment in the United States for people suffering from both rheumatoid arthritis and gout. However, within three years of its availability, PBZ was linked to serious adverse reactions, including aplastic anemia, bone marrow depression, renal failure, and even death. After examining several case studies of PBZ use, the FDA banned PBZ for human use in the United States.[20] According to the FDA:

> "Phenylbutazone is known for its ulcerogenic, nephrotoxic, and hemotoxic effects in horses, dogs, rats, and humans. It is known to induce blood dyscrasias, including aplastic anemia, leucopenia, agranulocytosis, thrombocytopenia, and deaths. The reported adverse reactions were associated with the human clinical use of 200 to 800 milligrams phenylbutazone per day….[I]t is unclear what level of exposure would be required to trigger such reactions in sensitive people. Moreover, phenylbutazone is a carcinogen, as determined by the National Toxicology Program (NTP) based on positive results in genotoxicity tests and some evidence of carcinogenicity seen in the rat and mouse in carcinogenicity bioassays NTP conducted."[21]

For animals, the only FDA-approved phenylbutazone use is as an oral or injectable dose in dogs and horses.[22,23] As it stands, PBZ use in humans and food-producing animals alike remains unapproved.[24]

Phenylbutazone in Thoroughbreds Bound for Slaughter: A Case Study

There can only be one winner at the end of each horse race, and many of the horses that do not place, show signs of injury, or are past their prime are sent to auction, and ultimately end up in slaughterhouses in Canada or Mexico.[25] The European Union (EU) has found that horse meat originating from Mexican slaughterhouses contain harmful residues of several EU prohibited substances such as clenbuterol (bronchodilator), zilpaterol (used as a steroid substitute), and furanics (anabolic steroid).[26,27] Due largely to over-breeding, the thoroughbred racing industry is one of the principal contributors to the estimated 133,241 U.S. horses slaughtered in 2011.[28,29]

Because of the intense training and racing endured by these horses, many develop musculoskeletal injuries that trainers and owners treat with NSAIDs, of which PBZ is the common due to its legality in the racing industry. A study done by the Daily Racing Form found 99% of racehorses in California and 92% of horses at Suffolk Downs in Massachusetts are given PBZ on a regular basis.[30] Certain racetracks allow only PBZ administration on race day, but all usage must be recorded on the horse's track record.[31] This documentation requirement makes racing thoroughbreds convenient candidates for a case study of PBZ usage in U.S. horses bought for slaughter.

Nicholas Dodman of Tufts University Cummings School of Veterinary Medicine, Nicolas Blondeau of the Institut de Pharmacologie Moléculaire et Cellulaire, and Ann Marini of Uniformed Services University of the Health Sciences conducted a study to investigate whether thoroughbred race horses were given PBZ prior to being bought for human consumption, and to see how widely the FDA ban on PBZ usage in horses that end up on consumers' plates is ignored. The study identified 50 thoroughbreds rescued from slaughter and 18 thoroughbreds that were sent to slaughter. Each horse's Jockey Club lip tattoo allowed the researchers to find the registered name of all 68 horses, and each horse's drug record was obtained from their race track records.[32]

Upon review of the records, one of the horses sent to slaughter was not documented as receiving PBZ but the drug was identified in his blood test results, and another thoroughbred was administered PBZ by a veterinarian in the same month he was sent to slaughter. The remaining 16 of the 18 horses slaughtered and all 16 of the rescued horses were recorded as receiving PBZ within 24 hours of a race. Data collected by the researchers determined that the time interval between horses' last known dose of PBZ and the date

they were bought for slaughter varied from a week to four years. However, it is important to note that the FDA, the EU, the United Kingdom, and Canada do not allow any use of PBZ in horses intended for human consumption regardless of withdrawal time.[33]

Another important aspect in understanding the risk of PBZ contamination in horsemeat is the circulation of PBZ in the bloodstream. Horses possess 1.76 times the amount of blood per pound of body weight compared to cattle. With this much blood, it is possible that high-volume slaughterhouses—one Canadian slaughterhouse processed 100 horses a day—do not allow sufficient time for the horse's blood to be completely drained from the muscle, increasing the risk of meat contamination.[34]

The findings of Dodman, et al., indicate a serious discontinuity between food safety regulations and practice. Horses with a history of PBZ use are making their way to slaughter plants despite the United States' and other countries' ban of the use of the drug in food producing animals.

The European Union's Evaluation of Imported Horse Meat

In 2010, The European Commission's Food and Veterinary Office (FVO) evaluated food safety standards of imported equine meat from third countries (non-members of the European Union).[35] The FVO have found that many third countries—such as Mexico, Canada, and the United States—do not keep veterinary pharmaceutical treatment records for horses; and there are no systems in place to differentiate equines intended for human consumption from all other equines. The evaluations also reported that third countries tolerate the administration of substances that are prohibited or unauthorized in food-producing animals in the EU.[36,37] The United States has no official controls in place to verify the authenticity or reliability of the medical records and equine documents now required for horses destined for slaughter, only records of physical identification are required.[38] These discoveries prompted the European Commission to facilitate corrective measures to their own regulations regarding imported horsemeat, and to require third countries to implement action plans addressing compliance with the EU's requirements regarding equine meat.[39]

Since 2000, the EU's regulations state that horse meat cannot contain residues of veterinary medicinal products exceeding previously set limits or residue from substances banned for use in food producing animals in the EU. These restrictions include phenylbutazone. If substances prohibited for use in food-producing animals are administered to equids, those animals must be excluded from the food chain.[40] Finally, imported horsemeat can only be authorized if equines are included in European Commission-approved residue control plans in third country slaughterhouses.[41]

Both Canada and Mexico have submitted action plans in order to comply with the EU's import requirements for equine meat, and both plans have been approved by the FVO.[42]

In Mexico, horses imported for slaughter are to be microchipped and border controls have been strengthened. A sworn statement on veterinary medical treatments is requested for all slaughter horses, no matter what their country of origin. United States providers of imported horses (holding facilities) have been targeted in samplings of the Mexican National Residue Monitoring Programme (NRMP). According to the NRMP nineteen samples of horsemeat in 2008, nine in 2009, and six in 2010 tested positive for residues of banned substances. All of the horses who tested positive were covered by a declaration stating that no treatments were given to the horses, and all of these horses came from U.S. providers. [43]

In Canada, the Canadian Food Inspection Agency (CFIA) has implemented the Equine Information Document (EID). The EID contains a physical description of the animal, record of the animal's medical treatment for the previous six months, and requires the signature of the animal's owner at the time of ownership transfer to verify that all information is accurate. Horses bought for intended slaughter must have their EIDs also signed by the transient agent responsible for the care of the equine from time of purchase for slaughter until arrival at the meat processing establishment. Each CFIA inspected facility

engaged in equine slaughter must present an EID for all domestic and imported equines presented for slaughter. If the EID indicates a horse has been given a substance not permitted for use in equine slaughtered for food, such as phenylbutazone, the horse will not be eligible for slaughter.[44] However, the 2011 FVO audit noted "for those horses imported from the United States of America for direct slaughter, the equine identification documents received were not reliable…." The audit further noted that 85% of the horses slaughtered in this Canadian processing plant originated from the U.S. and all of these horses were imported for direct slaughter.[45] Considering cases such as the one above, as long as there is no identification system in place, U.S. horses will not meet the European Commission's new food safety regulations, which will become effective in July 2013.

The European Commission mandated a transitional period of three years in which third countries have to provide guarantees regarding medical and drug history for horses during their last six months before slaughter. After the three-year transition period—which ends in 2013— guarantees must be provided for the lifetime of the horses.[46] This policy would complement the EU's "horse passport" legislation, which requires records to be kept of certain medicinal products.[47] This required lifetime guarantee that a horse be cleared of all EU prohibited substances for use in food-producing animals could eliminate virtually all U.S. horses from the food chain. The substances banned for use in food-producing animals routinely administered by U.S. horse owners render most American horses ineligible for foreign slaughter. [48]

Conclusion

The slaughter of U.S. horses poses a potentially serious health risk to human consumers, yet thousands are still slaughtered and sold to consumers. New measures put in place in the European Union to address the human health risk associated with horse slaughter are vital steps to insure U.S. horses, who are regularly given phenylbutazone along with other EU-banned substances, are kept out of the slaughter pipeline.

Prevention needs to start within U.S. borders. The United States should look to the European Union's horse passport and Canada's Equine Identification Document (EID) benchmarks. Requiring accurate medical records and identification documents, regardless of the horse's intended use, would draw clear lines regarding each individual horse's eligibility for human consumption. Until such a system is in place, meat from American horses may pose a public health threat.

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