

February 1, 2021

Docket No. APHIS–2020-0103
Regulatory Analysis and Development
PPD, APHIS, Station 3A–03.8
4700 River Road Unit 118
Riverdale, MD 20737–1238

Re: Docket No. APHIS–2020-0103: Notice of Request for Extension of Approval of an Information Collection; Commercial Transportation of Equines for Slaughter

Dear Mr. Moxey,

Thank you for this opportunity to comment on the information collection activities of the Animal and Plant Health Inspection Service (APHIS) related to its regulation of the commercial transport of equines for slaughter. *See* 7 U.S.C. 1901; 9 C.F.R. § 88.1 *et seq.* APHIS regulations require anyone transporting equines to slaughter to complete an owner-shipper certificate for each equine transported. *See* 9 C.F.R. § 88.4(a)(3). This certificate should be modified to provide for better administration of the APHIS’s commercial horse transport program, to address several concerns expressed by USDA’s Office of Inspector General (OIG) in its 2010 audit of the program, and to support USDA’s statutory mandate to ensure that adulterated meat does not enter the food supply. *See* 21 U.S.C.A. § 610(c). We recommend that APHIS modify the owner-shipper certificate to require (1) a record of all of the horse’s prior owners, (2) a record of all drugs, treatments, and substances administered to the horse since birth, (3) verification that the horse has at no time been administered any substance prohibited by federal law for use in animals slaughtered for use as food, and (4) certification that the transporter is not subject to any outstanding fines under the Agency’s commercial transport regulatory scheme.

A. Requiring Ownership and Medical Treatment History Would Advance Food Safety.

APHIS should modify the owner-shipper certificate to harmonize and strengthen APHIS’s commercial horse transport program and the Food Safety Inspection Service’s (FSIS) food safety program. Although complete medical treatment histories are necessary to prevent the sale, transportation, and offer for sale or transportation of adulterated meat derived from horses, FSIS currently does not have a mechanism for obtaining this information.

Virtually all American horses sold for slaughter were purchased at auction by “killer-buyers” (who often act as middlemen to the final auctioneer or stockyard). These horses have spent most of their lives in highly-managed, highly-medicated home and stable environments. Their lives, before their final weeks or months as commodities in the slaughter industry, are both privately controlled out of the public eye and almost completely unregulated. They are treated as pets or as valuable commodities, and they therefore routinely are administered numerous chemical substances. Most of these substances are prohibited by federal law for administration to horses slaughtered for human consumption because of the detrimental or unknown side effects to humans.

Exhibit 1 to these comments, “Banned And Dangerous Substances Commonly Given To Horses Sent To Slaughter,” is an illustrative list of drugs and other substances that are routinely administered to American horses throughout their lives, through injection, ingestion, or topical application. Exhibit 1 includes (1) drugs that are expressly prohibited (by law or by label) from

use in food animals; (2) drugs and other substances that are known to be harmful to humans when eaten; and (3) drugs and other substances that have never been tested in humans, so that the potential dangers from ingestion of horsemeat laced with the residue of these substances creates a frightening unknown possibility of medical consequences. The substances listed on Exhibit 1 are only illustrations of some of the more commonly used drugs and additives that may potentially be lurking poisons in horsemeat. There are multiple products and brand name compounds that may incorporate many of the items listed on Exhibit 1.

Aside from not meeting domestic food safety requirements, horsemeat from American horses currently cannot meet other nations' food safety restrictions. For example, the European Union, one of the largest importers of horsemeat, bans horsemeat from horses that have ever been treated with any of a list of prohibited substances and categories of substances in order to protect public health and avoid environmental contamination. See Commission Regulation (EU) 37/2010 (L 15), Table 2; Council Directive 96/23/EC (L 125/10, Annex 1). Table 1 of Regulation 37/2010 also establishes maximum residue limits for pharmacologically active substances permitted in food-producing animals, including horses slaughtered for food, and sets up procedures for testing those animals to ensure compliance with the regulation. Pursuant to these European Commission rules and related regulations and directives, such as Commission Regulation 853/2004 (L 139), countries exporting horses and horsemeat to the EU must submit to the European Commission (1) a "residue control plan" establishing guarantees equivalent to those applicable to EU member states and (2) an "action plan" with information sufficient to assess whether the importer has implemented specific measures to ensure that it does not export any contaminated animals or meat. At this point, the U.S. has not established a system to comply with the EU requirements for an action plan and currently cannot comply with the EU requirements due, in part, to USDA's failure to verify the medical treatment history of horses sold for slaughter.

For the same reason, importers of horsemeat from American horses have demonstrated serious concern over the lack of traceability in place for American horses and the harm that their adulterated horsemeat poses to consumers. For example, in December 2014, the European Union imposed a moratorium on horsemeat imports from Mexico after a Food and Veterinary Office audit highlighted that Mexico slaughters mostly American horses and questioned the reliability and truthfulness of vendor statements about American horses' medical treatment records.¹

Modifying the owner-shipper form to include previous owner histories, acquisition dates, and a lifetime medical history for each horse would provide valuable food safety information for use by FSIS, as well as importers of meat derived from American horses. Providing this additional information would not impose an unforeseen or unnecessary burden on transporters, because they already are required to maintain this information.²

B. Requiring Transporters to Attest That They Have No Outstanding Fines or Violations Would Advance Enforcement Efforts.

¹ See Commission Implementing Decision (EU) 2014/891; European Commission, Food and Veterinary Office, *Final Report of an Audit Carried out in Mexico* (Apr. 12, 2014), available at http://ec.europa.eu/food/audits-analysis/act_getPDF.cfm?PDF_ID=11431.

² See, e.g., U.S. Food and Drug Administration Warning Letter, Three L Farm 12/19/13, No. NYK-2014- 14, available at <http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/2013/ucm379652.htm> (explaining that meat is adulterated and, therefore, prohibited for sale or transport in interstate or foreign commerce, when complete medical treatment records are not maintained for the animal from whom it is derived).

APHIS has failed to establish adequate controls to penalize transporters for violations of its transport regulations and prevent them from continuing to transport horses. A 2010 OIG audit criticized APHIS for having “little recourse if owners/shippers who have been fined do not pay their penalties.”³ USDA responded to OIG’s recommendation by agreeing to consult with USDA’s Office of General Counsel (OGC) to address this failure of enforcement. However, despite its considerable enforcement authority, APHIS has refused to withhold shipping certificates from violators with outstanding fines. And APHIS has not identified alternative methods for penalizing transporters who flout the law.

Modifying the certificate to require transporters to attest that they have no outstanding violations or fines would provide USDA with a new avenue for enforcement against violators. Title 18, Section 1001 and Title 43, Section 1212 of the United State Code make it a crime for any person to knowingly make a false statement to any federal agency about any matter in its jurisdiction. A transporter who fraudulently states that he has no outstanding fines would be subject to penalty under these sections.

This slight modification also would help APHIS-Investigative Enforcement Services (IES) address difficulties in collecting evidence for use against violators. A review of IES cases brought for transport violations reveals a substantial number of cases closed due to insufficient evidence. Future cases of fraud would be easy to prove using the signed owner-shipper certificate and the agency’s record of violation. This would provide an effective means for targeting repeat violators.

We thank you for this opportunity to comment and for your consideration.

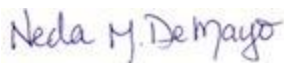
Sincerely,



Gillian Lyons
Senior Regulatory Specialist
Humane Society Legislative Fund



Joanna Grossman, PhD
Equine Program Manager and Senior Advisor
Animal Welfare Institute



Neda DeMayo
President
Return to Freedom

³ Animal and Plant Health Inspection Service Administration of the Horse Protection Program and the Slaughter Horse Transport Program, September 2010, USDA Office of Inspector General Audit Report 33601-2-KC, at 26.

EXHIBIT 1

Banned And Dangerous Substances Commonly
Given To Horses Sent To Slaughter

BANNED AND DANGEROUS SUBSTANCES COMMONLY GIVEN TO HORSES SENT TO SLAUGHTER

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
1.	Acepromazine	Anti-anxiety/tranquilizer Previously used in humans, but use discontinued	<i>See also</i> Citak A, Soysal DD, Uçsel R, Karaböcüoğlu M, Uzel N., <i>Seizures associated with poisoning in children: tricyclic antidepressant intoxication</i> , PEDIATR INT. 48(6):582-585 (2006) (Two children suffered cardiac arrest from intoxication from acepromazine and died.).
2.	Acetazolamide	Diuretic for horses. Used to treat epilepsy and benign intracranial hypertension in children and adults.	Acetazolamide (sulfonamide) induces metabolic alkalosis and is contraindicated in patients with hyperchloremic acidosis, angle-closure glaucoma, kidney and liver disease, and in patients with Addison's disease. Fatalities have occurred (rare) due to Stevens-Johnson syndrome (diffuse rash that sloughs), toxic epidermal necrolysis, fulminant hepatic necrosis, agranulocytosis, aplastic anemia, and other blood dyscrasias. Sensitizations may recur when a sulfonamide is readministered irrespective of the route of administration. If signs of hypersensitivity or other serious reactions occur, discontinue use of this drug. Caution is advised for patients receiving concomitant high-dose aspirin and Acetazolamide, as anorexia, tachypnea, lethargy, coma and death have been reported. http://www.drugs.com/pro/acetazolamide.html
3.	Acriflavine	Blue-Kote (topical ointment, antiseptic, protective wound dressing) http://www.drugs.com/vet/dr-naylor-blu-kote.html Not for use on animals intended for food. http://www.horsesuppliesplus.com/antiseptics.html	Acriflavine is an ingredient found in Blue-Kote, which is itself labeled "not for use on animals intended for food." The dangers for humans who ingest this substance are unknown.
4.	Altrenogest	Regu-Mate (altrenogest/oral progestin) (growth promoter) 21 CFR § 520.48: - "Do not use in horses intended for human consumption." "Do Not Use In Horses Intended For Human Consumption." http://www.drugs.com/vet/regu-mate-solution.html	<u>Active harmful ingredients (residue): Progestin.</u> Progestin is used in the mini-pill to prevent contraception so progestin could result in an aborted fetus in a pregnant woman. Progestin along with estrogens are pro-thrombotic meaning that they cause deep blood clots, including venous thrombosis and cerebral thrombosis. http://www.nejm.org/doi/full/10.1056/NEJM200105173442007 Combined with estrogens, progestin increases the risk of breast cancer and cardiovascular problems.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
			http://www.whi.org/findings/ht/eplusp_3yr.php Increased stroke risk. http://www.whi.org/findings/ht/ealone_stroke.php HUMAN WARNINGS Skin contact must be avoided as Regu-mate® (altrenogest) Solution 0.22% is readily absorbed through unbroken skin. Protective gloves must be worn by all persons handling this product. Pregnant women or women who suspect they are pregnant should not handle Regu-mate® (altrenogest) Solution 0.22%. Women of child bearing age should exercise extreme caution when handling this product. Accidental absorption could lead to a disruption of the menstrual cycle or prolongation of pregnancy. Direct contact with the skin should therefore be avoided. Accidental spillage on the skin should be washed off immediately with soap and water. http://www.drugs.com/vet/regu-mate-solution.html
5.	Aluminum hydroxide	Strepvax II (component in equine vaccine) Used in humans for gastrointestinal problems, ulcers. http://www.drugs.com/vet/strepvax-ii.html	WARNINGS/PRECAUTIONS May cause constipation. Caution with renal failure; prolonged use may result in or worsen dialysis osteomalacia. Elevated tissue aluminum levels contribute to the development of dialysis encephalopathy and osteomalacia syndromes. Caution with normophosphatemic patients; prolonged use may result in hypophosphatemia if phosphate intake is inadequate. ADVERSE REACTIONS Constipation, dialysis osteomalacia, hypophosphatemia. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=1544 Can cause constipation, confusion, loss of appetite, and muscle weakness. http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001056/
6.	Amikacin	Antibiotic 21 CFR § 529.56 - “Do not use in horses intended for human consumption”	Antibiotics are potentially dangerous to humans who either have allergies or sensitivities to them. Additionally, the use of antibiotics in food animals, and the subsequent ingestion by humans of those animals, has the potential to create antibiotic resistance in humans, which can cause significant problems for humans upon subsequent illness.
7.	Amoxicillin	Antibiotic	<u>Infections and Infestations:</u> Mucocutaneous candidiasis. <u>Gastrointestinal:</u> Nausea, vomiting, diarrhea, black hairy tongue, and hemorrhagic/pseudomembranous colitis. Onset of pseudomembranous colitis symptoms may occur during or after antibiotic treatment. <u>Hypersensitivity Reactions:</u> Anaphylaxis Serum sickness-like reactions, erythematous maculopapular rashes, erythema multiforme, Stevens-Johnson syndrome, exfoliative dermatitis, toxic epidermal necrolysis, acute generalized exanthematous pustulosis, hypersensitivity vasculitis and urticaria have been reported. <u>Liver:</u> A moderate rise in AST (SGOT) and/or ALT (SGPT) has been noted, but the significance of this finding is unknown. Hepatic dysfunction including cholestatic

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
			jaundice, hepatic cholestasis and acute cytolytic hepatitis have been reported. <u>Hemic and Lymphatic Systems:</u> Anemia, including hemolytic anemia, thrombocytopenia, thrombocytopenic purpura, eosinophilia, leukopenia, and agranulocytosis have been reported during therapy with penicillins. These reactions are usually reversible on discontinuation of therapy and are believed to be hypersensitivity phenomena. <u>Central Nervous System:</u> Reversible hyperactivity, agitation, anxiety, insomnia, confusion, convulsions, behavioral changes, and/or dizziness have been reported rarely. <u>Miscellaneous:</u> Tooth discoloration (brown, yellow, or gray staining) has been rarely reported. Most reports occurred in pediatric patients. Discoloration was reduced or eliminated with brushing or dental cleaning in most cases. http://www.drugs.com/sfx/amoxicillin-side-effects.html
8.	Ampicillin sodium	Antibiotic for treatment of respiratory tract infections (pneumonia and strangles) and skin and soft tissue infections (abscesses and wounds), when caused by susceptible organisms. 21 CFR § 522.90c - “Do not use in horses intended for human consumption.”	COMMON SIDE EFFECTS Inflammation and redness of the tongue; irritation of mouth or throat; mild diarrhea; nausea; second infection; vomiting. SEVERE SIDE EFFECTS Severe allergic reactions (rash; hives; itching; difficulty breathing; tightness in the chest; swelling of the mouth, face, lips, or tongue); bloody stools; severe diarrhea; stomach pain/cramps; vaginal irritation or discharge. http://www.drugs.com/sfx/ampicillin-side-effects.html See also side effects for ampicillin injection: •upset stomach, diarrhea, vomiting, mild skin rash More severe: •severe skin rash, itching, hives, difficulty breathing or swallowing, wheezing, unusual bleeding or bruising, headache, dizziness, seizures, sore mouth or throat http://www.nlm.nih.gov/medlineplus/druginfo/meds/a601133.html Material Safety Data Sheet (“MSDS”) for ampicillin sodium salt: Toxic Effects on Humans: Hazardous in case of ingestion, of inhalation. http://www.sciencelab.com/msds.php?msdsId=9925610
9.	Aspirin	Aspir-paste http://www.drsfostersmith.com/1/1/10913-aspir-paste-by-oral-x.html Reduces joint, muscle, and lameness pain.	WARNINGS/PRECAUTIONS Avoid in children or teenagers for chickenpox or flu symptoms; Reye’s syndrome may occur. May cause severe allergic reaction (hives, facial swelling, asthma, shock) and stomach bleeding. Avoid in asthma, stomach problems that persist or recur, ulcers, or bleeding problems. ADVERSE REACTIONS Allergic reaction, hives, facial swelling, asthma, shock. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=195

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
			Can cause excessive bleeding in those taking warfarin; http://stroke.ahajournals.org/content/40/5/1944.full Severe allergic reactions (rash; hives; itching; difficulty breathing; tightness in the chest; swelling of the mouth, face, lips, or tongue); black or bloody stools; confusion; diarrhea; dizziness; drowsiness; hearing loss; ringing in the ears; severe or persistent stomach pain; unusual bruising; vomiting. http://www.drugs.com/sfx/aspirin-side-effects.html
10.	Avermectin A1a, 5-O-demethyl-25-de(1-methylpropyl)-22,23-dihydro-25-(1-methylethyl)-	Farnam Ivercare (dewormer) http://msds.farnam.com/m001116.htm Ivercare Paste is labeled “Do not use in horses intended for food purposes.” http://www.drugs.com/vet/ivercare-paste-1-87.html	A hazardous component of the Farnam Ivercare dewormer product. http://msds.farnam.com/m001116.htm Links to the toxicological literature here: http://pubchem.ncbi.nlm.nih.gov/summary/summary.cgi?sid=14145#x50 http://toxnet.nlm.nih.gov/cgi-bin/sis/search/r?dbs+toxline:@term+@rn+65195-51-9+@OR+@all
11.	Benzyl alcohol	Equipoise Equipoise Injectable http://www.drugs.com/vet/equipoise-injectable-can.html	ADVERSE REACTIONS Pruritis, erythema, pyoderma, ocular irritation. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Benzyl+alcohol
12.	Boldenone undecylenate	Equipoise injectable 21 CFR § 522.204 - “Do not administer to horses intended for human consumption.” Equipoise injectable (boldenone undecylenate injection) is recommended as an aid for treating debilitated horses when an improvement in weight, haircoat or general physical condition is desired. http://www.drugs.com/vet/equipoise-injectable-can.html	Boldenone undecylenate is a steroid ingredient in Equipoise (for horses). It is not indicated for use in humans but appears to have off-label uses as a bodybuilding steroid. Known side effects consist of: nausea, leukopenia, symptoms resembling a peptic ulcer, acne, excitation (commonly referred to as roid rage), sleeplessness, chills, vomiting, diarrhea, hypertension, prolonged blood clotting time, increase in libido. Females had reported menstrual irregularities, post-menopausal bleeding, increased sex drive, swelling of the breasts, hoarseness or deepening of the voice, and enlargement of the clitoris. Men had reported acne, gynecomastia, and increased aggression. http://www.anabolicsmall.com/equipoise.html Steroids should be taken under a doctor’s supervision and have multiple significant adverse affects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain.
13.	Butorphanol	For the relief of pain associated with colic and postpartum pain in adult horses and yearlings.	COMMON SIDE EFFECTS Dizziness; drowsiness; dry mouth; light-headedness; nasal irritation; nausea; runny nose; sore throat; stuffy nose; trouble sleeping; unpleasant taste; vomiting.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		21 CFR § 522.246 - “Do not use in horses intended for human consumption.”	SEVERE SIDE EFFECTS Severe allergic reactions (rash; hives; itching; difficulty breathing; tightness in the chest; swelling of the mouth, face, lips, or tongue); blurred vision; burning, numbness, or tingling; change in the amount of urine produced; chest pain; confusion; ear pain; fainting; fast, slow, or irregular heartbeat; flushing; hallucinations; mental or mood changes (agitation, anxiety, depression); restlessness; ringing in the ears; seizures; severe or persistent dizziness, drowsiness, or light-headedness; severe or persistent headache or trouble sleeping; shortness of breath; slow, shallow, or difficult breathing; tremors; unusual swelling. http://www.drugs.com/sfx/butorphanol-side-effects.html
14.	Butoxy Polypropylene Glycol	Farnam Bronco Gold (fly spray) http://msds.farnam.com/m001650.htm Farnam Endure Fly Spray http://msds.farnam.com/m000080.htm Farnam Endure Sweat-Resistant http://msds.farnam.com/m001046.htm Farnam Tri-Tec 14 http://msds.farnam.com/m000490.htm Farnam Wipe (fly control)	In 2002, a woman in Oklahoma was hospitalized after using Pyranha fly spray on horses. Her face was distorted, and her words slurred. She reportedly had leg problems, tremors, memory problems. The medical toxicologist's conclusion was that the patient, a professional horse trainer, developed a complex neurotoxic movement disorder following sensitization to a product that contained 33% /butoxypolypropylene glycol/ BPG. Adverse reactions and side effects of ingestion are unknown.
15.	Carbadox	Antibiotic used for growth promotion purposes (generic)	Not permitted for use in food-producing animals in Australia (http://www.apvma.gov.au/registration/not_permitted.php) Or in Canada, or the European Union. (http://www.hc-sc.gc.ca/dhp-mpps/vet/faq/faq_mrl-lmr-eng.php#a6) Not for human use. http://www.drugs.com/pro/mecadox.html Chronic health effects, including cancer, mutagenic effect, changes in lung function. Accidental ingestion may cause serious harm or be fatal. MSDS SUPPLIER http://datasheets.scbt.com/sc-204668.pdf
16.	Ceftiofur Crystalline Free Acid	Excede (antibiotic) For the treatment of lower respiratory tract infections in horses. 21 CFR § 522.313a	Intended for use in horses which are non-food animals. Because this indication for this new animal drug is not intended for use in food producing animals, there is no data pertaining to drug residues in food (i.e., human food safety). WARNINGS

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		- “Do not use in horses intended for human consumption.” http://www.excede.com/Excede.aspx?country=US&drug=XT&sec=100&species=EQ	Not for use in humans. For use in animals only. Consult a physician in case of accidental human exposure. Do not use in horses intended for human consumption. http://animalhealth.pfizer.com/sites/pahweb/US/EN/Products/Documents/Combined%20Full%20PI%20(8_5x11)%20-%20EXEQ0110014.pdf
17.	Ceftiofur Sodium	Ceftiflex powder For treatment of respiratory infections in horses. 21 CFR §522.313c - “Do not use in horses intended for human consumption.” http://www.drugs.com/vet/ceftiflex.html	Penicillins and cephalosporins can cause allergic reactions in sensitized individuals. Topical exposure to such antimicrobials, including ceftiofur, may elicit mild to severe allergic reactions in some individuals. Repeated or prolonged exposure may lead to sensitization. Avoid direct contact of the product with the skin, eyes, mouth, and clothing. http://www.drugs.com/vet/ceftiflex.html
18.	Chloramphenicol	Chlor-500 Chlor-1000 Chloramphenicol 1% Ointment “Not for use in animals that are raised for food production. Must not be used in meat, egg, or milk-producing animals. 21 CFR § 520.390a; 520.390c; 522.390; 524.390. http://www.drugs.com/vet/chlor-500-can.html http://www.drugs.com/vet/chlor-1000-can.html http://www.drugs.com/cdi/chloramphenicol.html http://www.drugs.com/vet/chloramphenicol-1-ophthalmic-ointment-can.html	Some medicines may interact with Chloramphenicol: •Anticoagulants (e.g., warfarin) because side effects, including risk of bleeding, may be increased. •Hydantoins (e.g., phenytoin) or sulfonylureas (e.g., glyburide) because the actions and side effects of these medicines may be increased. •Medicines that may decrease your bone marrow (e.g., cancer chemotherapy) because the risk of serious side effects, such as low blood platelet levels and low white blood cell counts, may be increased. Chloramphenicol has caused severe and sometimes fatal blood problems (e.g., anemia, low blood platelets, low white blood cell counts). Leukemia has also been reported after use of Chloramphenicol. Blood problems have occurred after both short-term and long-term use of Chloramphenicol. Do not use chloramphenicol if safer, effective medicines can be used. http://www.drugs.com/cdi/chloramphenicol.html Prohibited for use in food-producing animals in the European Union.
19.	Chloroform	Anesthetic	The IARC (International Agency for Research on Cancer) classifies chloroform as possibly carcinogenic to humans. http://monographs.iarc.fr/ENG/Monographs/vol73/mono73.pdf
20.	Cimetidine	Prevention and prophylaxis of	ADVERSE REACTIONS

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		gastrointestinal irritation and ulcers	Diarrhea, headache, dizziness, somnolence, reversible confusional states, reversible impotence, increased serum transaminases, rash, gynecomastia, blood dyscrasias. WARNINGS/PRECAUTIONS Reversible confusional states reported, especially in severely ill patients. Increased risk of developing confusional states with advancing age (≥ 50 yrs), renal and/or hepatic impairment. Risk of hyperinfection of strongyloidiasis in immunocompromised patients. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=1440
21.	Clenbuterol	Beta-agonists used for growth promotion purposes Prohibited from any use in any food-producing animal. http://www.farad.org/eldu/prohibit.asp	Not approved for human use. http://www.deadiversion.usdoj.gov/drugs_concern/clenbuterol.htm
22.	Copper Naphthenate	Kopertox Treatment of thrush. 21 CFR § 524.463 - “Do not use in horses intended for human consumption.” http://www.drugs.com/vet/kopertox.html http://www.sciencelab.com/msds.php?msdsId=9923553	Toxic to central nervous system, blood, and kidneys. May produce vomiting, headache, shock, jaundice, kidney damage, nervous system damage, liver damage.
23.	Crude Liver Extract	Liver 7 injection http://www.drugs.com/vet/liver-7-injection.html	FDA cautions against the use by humans of any animal organ extract. http://www.healthline.com/natstandardcontent/liver-extract
24.	Cupric Sulfate	Proudsoff (ointment for control and removal of proud flesh) Not for use on animals intended for food. http://www.drugs.com/vet/proudsoff.html	Harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea, metallic taste, burning sensation in the stomach or epigastrium, abdominal pain, and possible gastrointestinal tract bleeding. May affect metabolism, liver (liver damage, jaundice), blood, urinary system (kidney damage, hematuria, hemoglobinuria, albuminuria), behavior/nervous systems (somnolence, tremor, psychosis, muscle weakness, coma), cardiovascular system (lowering of blood pressure, dysrhythmia).
25.	Cypermethrin	Farnam Endure Sweat-Resistant (fly spray) http://msds.farnam.com/m000080.ht	“Pyrethroid ingestion gives rise within minutes to a sore throat, nausea, vomiting and abdominal pain. There may be mouth ulceration, increased secretions and/or dysphagia. Systemic effects occur 4-48 hours after exposure. Dizziness, headache and fatigue are common, and palpitations, chest tightness and blurred vision less

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		m	frequent. Coma and convulsions are the principal life-threatening features. Most patients recover within 6 days. . . .” S.M. Bradberry <i>et al.</i> , <i>Poisoning Due to Pyrethroids</i> , Toxicol Rev. 24(2):93-106 (2005) (quoting abstract). Potential organ damage. http://pmep.cce.cornell.edu/profiles/extoxnet/carbaryl-dicrotophos/cypermeth-ext.html
26.	Dapsone	Dermatitis skin problems in horses. Acne treatment in humans.	Adverse effects include agranulocytosis, aplastic anemia, leucopenia, thrombocytopenia, hemolysis, and other blood dyscrasias have been reported after treatment. It may cause significant reduction in leukocytes, platelets, or hemopoiesis. Caution with glucose-6-phosphoate dehydrogenase (G6PD) deficiency, methemoglobin reductase deficiency, or hemoglobin M, and those who are exposed to other agents or conditions such as infection or diabetic ketosis capable of producing hemolysis. Toxic hepatitis and cholestatic jaundice reported after use. Liver function tests must be monitored if there are any abnormalities. Can cause muscle weakness. Peripheral neuropathy, nausea and vomiting, abdominal pain, and pancreatitis may occur. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Dapsone
27.	Deodorized Kerosene	Component in Farnam Repel Xp (fly spray). http://msds.farnam.com/m000031.htm	Ingestion may cause aspiration hazard, nausea, fatigue, pulmonary edema, central nervous system depression, convulsions and loss of consciousness. http://www.sciencestuff.com/msds/C1955.html
28.	Deslorelin	Used for inducing ovulation within 48 hours in ovulating mares. 21 CFR § 522.533 - “Do not use in horses intended for human consumption.”	Deslorelin stops the production of certain sex hormones in horses, and has never been approved for use on humans. If it was approved, it would be for a small targeted complement of the human population with identified diseases related to the production of too much of certain sex hormones, but could otherwise produce unwanted hormonal effects and responses.
29.	Detomidine Hydrochloride	Dormosedan Pain relief and sedative for minor surgery. Also used in humans for sedation in intensive care and surgery conditions. 21 CFR § 522.536; 529.536 - Not for use in horses intended for food.” - “Do not use in horses intended for human consumption.” http://www.dormosedan.com/	Can cause hypotension, hypertension, bradycardia, dry mouth, respiratory depression, tachycardia, nausea and vomiting, atrial fibrillation, fever, hyperglycemia, anemia, hypovolemia, hypoxia, atelectasis. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=2848

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
30.	Dexamethasone	Dexium injection Anti-inflammatory drug. 21 CFR § 522.540 - (d)(4) (sterile aqueous solution). “Not for use in horses intended for food.” - (e)(5) (sterile aqueous solution). “Not for use in horses intended for food.” 21 CFR § 522.542 - “Not for use in horses intended for food.” http://www.drugs.com/vet/dexium-injection.html Steroid for humans.	Adverse reactions include fluid/electrolyte disturbances, muscle weakness, osteoporosis, peptic ulcer, pancreatitis, ulcerative esophagitis, impaired wound healing, headache, psychic disturbances, growth suppression (pediatrics), glaucoma, hyperglycemia, weight gain, nausea, malaise. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=798 Steroids should be taken under a doctor’s supervision and have multiple significant adverse affects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain.
31.	Dichloromethane	Furall Antibacterial http://msds.farnam.com/m000394.htm	If eaten, this drug can cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause carboxyhemoglobinemia. Dichloromethane has been treated as a carcinogen in California since 1988 and it may also have adverse reproductive effects. http://www.sciencelab.com/msds.php?msdsId=9948&code=SLM2677
32.	Diclazuril	Clinacox Antiprotozoal Used to treat infections leading to myoencephalitis. 21 CFR § 520.606 - “Do not use in horses intended for human consumption.”	Administered to some AIDS patients, but effects in humans largely unknown.
33.	Diclofenac Sodium	Surpass (topical) Arthritis treatment in humans and horses. 21 CFR § 524.590 - “Do not use for horses intended for human consumption.” http://www.drugs.com/vet/surpass-	May cause hypertension, edema, or heart failure. Some individuals with prior gastrointestinal disease may be hypersensitive to the drug’s effects. Potential kidney failure and danger for patients with renal disease. May cause anaphylactic reactions; may harm fetus in utero. May cause liver problems. May cause anemia and affect blood. May cause abdominal pain, constipation, diarrhea, dyspepsia, flatulence, gross bleeding/perforation, heartburn, nausea and vomiting, gastrointestinal ulcers, renal function abnormalities, anemia, dizziness, edema, elevated liver enzymes. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Diclofenac+Sodium

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		topical-cream.html	
34.	Diflubenzuron	Equitrol II Fly control http://www.drugs.com/vet/equitrol-ii-feed-thru-fly-control.html	May cause anemia.
35.	Dimethylsulfoxide	Topical application for sprains, soreness; may also be injected or combined with other drugs for administration. Limited treatment use in humans -- used as a topical application to reduce acute swelling due to trauma. 21 CFR § 524.660a - Dimethyl sulfoxide solution - “Not for use in horses and dogs intended for breeding purposes nor in horses slaughtered for food.” 21 CFR § 524.660b - Dimethyl sulfoxide gel - “Do not use in horses and dogs intended for breeding purposes or in horses slaughtered for food.” http://www.webmd.com/vitamins-supplements/ingredientmono-874-DMSO%20(DIMETHYLSULFOXIDE).aspx?activeIngredientId=874&activeIngredientName=DMSO%20(DIMETHYLSULFOXIDE)	May cause headache, dizziness, drowsiness, nausea, vomiting, diarrhea, constipation, breathing problems, vision problems, blood problems, and allergic reactions. Also may harm the liver and kidneys. http://www.webmd.com/vitamins-supplements/ingredientmono-874-DMSO%20(DIMETHYLSULFOXIDE).aspx?activeIngredientId=874&activeIngredientName=DMSO%20(DIMETHYLSULFOXIDE) MSDS available here: http://www.sciencelab.com/msds.php?msdsId=9927347
36.	Dimetridazole (generic)	Bactericidal Antibacterial	Withdrawn from European market because of dangers of gastrointestinal problems, potential for cancer. http://www.bioagrimix.com/msds/36/36280/3628007.pdf
37.	Di-n-propyl isocinchomeronate	Fly control products:	High toxicity – classified as a carcinogenic Pesticide Action Network (PAN) “Bad Actor”. ¹

¹ “PAN Bad Actor pesticides” belong to a “most toxic” set of pesticides identified by the Pesticide Action Network and Californians for Pesticide Reform (CPR). These pesticides are at least one of the following: known or probable carcinogens, as designated by the International Agency for Research on Cancer (IARC), U.S. EPA, U.S. National Toxicology Program, and the state of California’s Proposition 65 list; reproductive or developmental toxicants, as designated by the state of

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		Flysect Super-7 repellent spray Flysect Super-C Mosquito Halt http://www.drugs.com/vet/flysect-super-7.html http://msds.farnam.com/m000811.htm http://www.drugs.com/vet/flysect-super-c.html http://www.drugs.com/vet/mosquito-halt-repellent-spray-for-horses.html	www.pesticideinfo.org/Detail_Chemical.jsp?Rec_id=PC2798
38.	Dipropyl isocinchomeronate	Farnam Roll-On Repellent (fly spray) http://msds.farnam.com/m000018.htm	High toxicity – PAN Bad Actor. Carcinogenic. www.pesticideinfo.org/Detail_Chemical.jsp?Rec_id=PC2798
39.	Domperidone	In horses, used for treatment of toxicity from fescue grass that affects pregnancies. In humans, used to increase bowel contractions and combat nausea and vomiting caused by other drugs. 21 CFR § 520.766 - “Do not use in horses intended for human consumption.” http://www.fda.gov/AnimalVeterinary/SafetyHealth/ProductSafetyInformation/ucm235691.htm	FDA has warned that this drug passes into breast milk and should not be used in nursing human mothers. Side effects include dizziness, dry mouth, nervousness, flushing, irritability, insomnia, stomach cramps, hot flashes and leg cramps, chest pain, slow/fast/irregular heartbeat, swelling of the feet or ankles, difficulty urinating, swelling of the breasts or discharge from the nipple in men or women, menstrual changes, sexual difficulties. May affect absorption and action of other drugs, and interact with other drugs. http://www.medicinenet.com/domperidone-oral/article.htm
40.	Doxycycline	Antibiotic for horses and humans. http://www.drugs.com/cdi/doxycycline-capsules.html	Dangerous for pregnant women; may cause tooth problems, gastrointestinal symptoms, autoimmune syndrome, renal problems.

California’s Proposition 65 list; neurotoxic cholinesterase inhibitors, as designated by California Department of Pesticide Regulation, the Materials Safety Data Sheet for the particular chemical, or PAN staff evaluation of chemical structure (for organophosphorus compounds); known groundwater contaminants, as designated by the state of California (for actively registered pesticides) or from historic groundwater monitoring records (for banned pesticides); pesticides with high acute toxicity, as designated by the World Health Organization (WHO), the U.S. EPA, or the U.S. National Toxicology Program.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
41.	Doxylamine succinate	Antihistamine Anticholinergic 21 CFR 520.784 - “Not for use in horses intended for food.”	Not to be combined with other antihistamines. Can cause multiple adverse side effects.
42.	Equine Influenza vaccine	Killed virus vaccine	Not intended for human use and no testing on human ingestion of this vaccine.
43.	Equine Rhinopneumonitis – Influenza vaccine	Killed virus vaccine Prestige II with Havlogen (vaccine) http://intervetus.naccvp.com/?m=product_view&id=1047348	Not intended for human use and no testing on human ingestion of this vaccine.
44.	Estradiol	Female hormone for management of reproductive functions in horses, and for relief of menopausal symptoms in humans Estradiol Cypionate in Oil Estradiol enanthate; Estradiol benzoate	Risk of cancer is among the multiple potential negative side effects related to the unapproved and uncontrolled use of this synthetic female hormone. Other side effects include headaches, dizziness, breast pain, increased risk for yeast infections, flu-like symptoms, arthritic pain, hair loss, gastrointestinal problems including nausea or vomiting, and incidences of spotting in between periods or other menstrual irregularities. May be unsafe for people with blood disorders, heart disease, obesity, seizure disorders or certain allergies.
45.	Eucalyptus Oil	Scarlet Oil Wound Dressing http://www.drugs.com/vet/scarlet-oil.html Labeled “Not for use on animals intended for food.”	Potential side effects include seizures, poisoning, drowsiness, morbidity in children, central nervous system, depression.
46.	Fenbendazole	Dewormer (Panacur) Equi-bits Panacur Paste Panacur Power Pac Panacur Suspension Safe-Guard Safe-Guard Power-Dose 21 CFR § 520.905a - “Do not use in horses intended	No human formulation, and adverse effects on humans who eat this dewormer, that directly affects the gastrointestinal tract, are unknown.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		for human consumption.”	
47.	Firocoxib	Equioxx Non-steroidal anti-inflammatory drug (NSAID). 21 CFR § 520.930; 522.930 - Firocoxib paste. - “Do not use in horses intended for human consumption.” http://www.equioxx.com/	There is no approved use of this drug for humans and so any adverse effects on humans who ingest this drug are completely unknown. Firocoxib is one of the NSAIDs, all of which have extensive potential adverse side effects in humans including cardiovascular, gastrointestinal, kidney and eye problems. The NSAIDs can be dangerous for individuals with blood disorders. They are also contraindicated during pregnancy. They also present significant risk for people with a history of ulcers or gastrointestinal bleeding. Can cause nausea, abdominal pain, diarrhea, headaches, excitability, and nervous system problems.
48.	Flunixin	<u>NSAID:</u> Banamine (solution or paste) (pain killer) Flunazine injectable Flu-nix D injection Flunixinamine 21 CFR § 520.970 - Granules - “Do not use in horses intended for human consumption.” 21 CFR § 522.970 - Injectable - “Do not use in horses intended for human consumption.”	Flunixin is one of the NSAIDs, all of which have extensive potential adverse side effects in humans including cardiovascular, gastrointestinal, kidney and eye problems. The NSAIDs can be dangerous for individuals with blood disorders. They are also contraindicated during pregnancy. They also present significant risk for people with a history of ulcers or gastrointestinal bleeding. Can cause nausea, abdominal pain, diarrhea, headaches, excitability, and nervous system problems.
49.	Flunixin Meglumine	<u>NSAID:</u> Flunazine injectable Flu-nix D injection Flunixinamine Labeled: Not for use in horses intended for food. http://www.drugs.com/vet/flunixin-meglumine-injection.html http://www.drugs.com/vet/flunazine-injectable-solution.html http://www.drugs.com/vet/flu-nix-d-	This is also one of the NSAIDs, all of which have extensive potential adverse side effects in humans including cardiovascular, gastrointestinal, kidney and eye problems. The NSAIDs can be dangerous for individuals with blood disorders. They are also contraindicated during pregnancy. They also present significant risk for people with a history of ulcers or gastrointestinal bleeding. Can cause nausea, abdominal pain, diarrhea, headaches, excitability, and nervous system problems.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		ivx.html http://www.drugs.com/vet/flunixamine.html	
50.	Furaltadone	<u>Antibacterial</u> http://www.chemblink.com/MSDS/MSDSFiles/139-91-3_Sigma-Aldrich.pdf	May cause cancer in humans, but very little known about effect on humans because the drug has not been tested on humans and the potential side effects upon ingestion are unknown.
51.	Furazolidone	<u>Antibacterial:</u> Furall Furox Aerosol Powder Used in humans as an anti-diarrheal 21 CFR § 524.1005 - “Not for use in horses intended for food.” http://msds.farnam.com/m000394.htm http://www.drugs.com/vet/furazolidone-aerosol-powder.html Federal law prohibits the use of this product in food-producing animals.	Contains chemicals known to the state of California to cause cancer. Should only be taken under strict medical oversight; dangerous if taken with alcohol, when pregnant, or for individuals with certain blood disorders. Adverse effects include headache, stomach upset, nausea, vomiting, dizziness or weakness, fever, skin rash, itching, muscle aches, flushing, breathing trouble. This medication may cause the urine to turn brown in color.
52.	Furosemide	<u>Diuretic:</u> Lasix Used in humans and horses	May cause pancreatitis, jaundice, anorexia, paresthesias, ototoxicity, blood dyscrasias, dizziness, rash, urticaria, photosensitivity, fever, thrombophlebitis, restlessness. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Furosemide
53.	Gentamicin sulfate solution	<u>Antibiotic:</u> Gentamicin solution Do not use for horses intended for human consumption. http://www.drugs.com/vet/gentamicin-sulfate-solution.html 21 CFR § 529.1044a - “Do not use in horses intended for human consumption.”	Can cause severe hearing and kidney problems. May cause dizziness, vertigo, ringing in the ears, hearing loss, numbness, muscle twitching or weakness, difficulty breathing, decreased urination, rash, itching, or sore throat. Interaction and potential harm with other drugs can cause adverse reactions.
54.	Gentian violet	Blue-Kote	Usually used topically on humans. Unknown side effects upon ingestion.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		Topical ointment, antiseptic, protective wound dressing. Not for use on food producing animals. http://www.drugs.com/vet/dr-naylor-blu-kote.html http://www.dr-naylor.com/index.php?option=com_content&task=blogcategory&id=20&Itemid=47 “Not for use on animals intended for food.” http://www.horsesuppliesplus.com/antiseptics.html	
55.	HCl	Component of Dexium injection http://www.drugs.com/vet/dexium-injection.html	Very hazardous if touched; not fully tested on humans; may be fatal if inhaled or swallowed. Causes irritation and burning, ulceration, or perforation of the gastrointestinal tract and resultant peritonitis, gastric hemorrhage and infection. Can also cause nausea, vomiting (with “coffee ground” emesis), diarrhea, thirst, difficulty swallowing, salivation, chills, fever, uneasiness, shock, strictures and stenosis (esophageal, gastric, pyloric). May affect behavior (excitement), the cardiovascular system (weak rapid pulse, tachycardia), respiration (shallow respiration), and urinary system (kidneys- renal failure, nephritis). Acute exposure via inhalation or ingestion can also cause erosion of tooth enamel.
56.	Hyaluronate sodium	Arthritis treatment Legend Legend injectable 21 CFR § 522.1145 - “Do not use in horses intended for human consumption.” - “Not for use in horses intended for food.” http://www.bayerdvm.com/products/legend/legend.cfm http://www.drugs.com/vet/legend-multi-dose-hyaluronate-sodium-injectable-solution.html	May cause gastrointestinal tract information with nausea and vomiting. It may affect blood (normocytic anemia, change in leukocyte count), metabolism, behavior (ataxia, convulsions), respiration (respiratory stimulation), and urinary system. The toxicological properties of this substance have not been fully investigated. http://www.sciencelab.com/msds.php?msdsId=9924276
57.	Hyaluronic acid sodium salt	Polyglycan	May cause gastrointestinal irritation, affect blood, metabolism and behavior. The dangers upon ingestion by humans has not been fully investigated.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		For use only as a surgical lavage in animals not intended for food use. http://www.medi-vet.com/Polyglycan.aspx Also used in race horses prior to a race.	
58.	Hydroxyzine Pamoate	Anti-anxiety in humans and preoperative sedation. Antihistamine, anti-itching and sedative in animals. http://www.drsfostersmith.com/product/product_display.cfm?pcatid=20678	May impair mental and physical abilities in elderly, may potentiate other medications, and not for use by pregnant or nursing mothers. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=1096
59.	Hyoscine butylbromide	Buscopan Scopolamine Antispasmodic; colic pain relief. http://www.drugs.com/vet/buscopan-sterile-solution-can.html	Potential adverse effects include blurred vision, severe allergic reactions, confusion, urinary problems, and mood changes. www.drugs.com/sfx/scopolamine-side-effects.html
60.	Isoflurane	Surgical anesthetic 21 CFR § 529.1186 - “Do not use in horses intended for human consumption.”	MSDS reports no information on toxicity upon ingestion.
61.	Isoparaffinic Petroleum Solvent	Fly Control: Farnam Bronco Gold (spray) Farnam Wipe http://msds.farnam.com/m001650.htm http://msds.farnam.com/m000490.htm	Unknown human toxicity and side effects after ingestion.
62.	Ivermectin	Dewormers: Agri-mectin Paste Bimectin Paste Equell Paste	Can act for up to twelve months; carcinogenicity not studied; not recommended for pregnant women; distributes into breast milk. Adverse reactions include pruritus, edema, papular/pustular/frank urticarial rash, fever, axillary/cervical/inguinal lymphadenopathy, arthralgia/synovitis, limbitis, tachycardia, peripheral edema, leukopenia, eosinophilia

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		Equimax Farnam Ivercare Horse Health Ivermectin Ivercare paste ProMetin E™ Paste Zimecterin Gold Zimecterin Paste Also found in human anthelmintic compounds 21 CFR § 520.1192 - Paste - “Do not use in horses intended for human consumption.” 21 CFR § 1194 - Meal - “Do not use in horses intended for human consumption.” 21 CFR § 1195 - Liquid - “Do not use in horses intended for human consumption.” 21 CFR §1198 - Ivermectin and praziquantel paste - “Do not use in horses intended for human consumption.” http://www.drugs.com/vet/agri-mectin-paste-1-87.html http://www.drugs.com/vet/agri-mectin-paste-1-87.html http://www.davisandlawrence.com/1-x-6-08-g.html http://www.horsehealthusa.com/details/Equell-Paste/37-105.html http://www.equimaxhorse.com/	http://www.pdr.net/search/searchResult.aspx?searchCriteria=ivermectin

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
63.	Ketoprofen	NSAID: Ketofen Used as NSAID in horses and humans. 21 CFR § 522.1225 - “Not for use in horses intended for food.” http://www.drugs.com/vet/ketofen.html	Ketoprofen is one of the NSAIDs, all of which have extensive potential adverse side effects in humans including cardiovascular, gastrointestinal, kidney and eye problems. The NSAIDs can be dangerous for individuals with blood disorders. They are also contraindicated during pregnancy. They also present significant risk for people with a history of ulcers or gastrointestinal bleeding. Can cause nausea, abdominal pain, diarrhea, headaches, excitability, and nervous system problems.
64.	Levothyroxine Sodium	Thyro-L Thyroid replacement hormone. http://www.drugs.com/vet/thyro-l.html	This artificial thyroid hormone can exacerbate thyroid and hypertension problems in susceptible individuals. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Levothyroxine+Sodium
65.	Luprostiol	For control of reproductive cycles and inducing termination of pregnancy. 21 USC § 522.1290 - solution - “Do not use in horses intended for human consumption.” - “Labeling shall bear the following statements: Warning: Women of child-bearing age, asthmatics, and persons with bronchial and other respiratory problems should exercise extreme caution when handling this product. In the early states, women may be unaware of their pregnancies...”	Dangerous for children, pregnant and lactating mothers, individuals with respiratory problems. Can cause hormonal effects when taken.
66.	Mepivacaine	Anesthetic 21 CFR § 522.1372 - “Not for use in horses intended for human consumption.”	Because this is an injectable drug, studies have not been done on the dangers of ingestion.
67.	Methocarbamol	Robaxin Muscle relaxant in animals and humans.	Potential adverse reactions include lightheadedness, dizziness, drowsiness, nausea, urticaria, pruritus, rash, conjunctivitis, nasal congestion, blurred vision, headache, fever, seizures, syncope, flushing. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Methocarbamol

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		http://www.petplace.com/drug-library/methocarbamol-robaxin-v/page1.aspx	
68.	Methyl Salicylate	Scarlet Oil Wound dressing for horses. Muscle and joint pain relief in humans. Not for use on animals intended for food. http://www.drugs.com/vet/scarlet-oil.html	“When ingested, the highly concentrated liquid methyl salicylate in the form of wintergreen oil, as with other volatile oils, can induce vomiting and is a notorious source for severe, often fatal poisonings.” http://www.drugs.com/npp/wintergreen.html Dangerous if used in conjunction with other analgesics, anticoagulants, steroids, NSAIDs, alcohol, and diuretics. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Methyl+Salicylate
69.	Methylandrostenediol	Methandriol Anabolic steroid Used as growth stimulator and steroid in horses and humans. http://www.drugs.com/international/methandriol.html	Can cause estrogenic (female hormone) and androgenic (male hormone) effects. Steroids should be taken under a doctor’s supervision and have multiple significant adverse affects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain.
70.	Methylprednisolone	Human and horse steroid 21 CFR § 522.1410 - “Do not use in horses intended for human consumption.”	Steroids should be taken under a doctor’s supervision and have multiple significant adverse affects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain.
71.	Metronidazole	Antibiotic in humans and horses (Flagyl) http://www.wedgewoodpetrx.com/learning-center/professional-monographs/metronidazole-for-veterinary-use-ab.html	This drug can cause gastrointestinal problems, serious allergic reactions in sensitive individuals, flu-like symptoms, seizures, encephalopathy, aseptic meningitis, peripheral neuropathy, nausea and vomiting, headache, anorexia and neutropenia. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Metronidazole
72.	Moxidectin	Quest Gel Quest Plus Antiparasitic (dewormers) Not for horses or ponies intended for human consumption. http://www.fda.gov/AnimalVeterinary/GuidanceComplianceEnforcement/	Very limited testing on humans – potential adverse effects still unknown.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		ComplianceEnforcement/ucm168782.htm 21 CFR § 520.1452; 520.1463 - Gel - “Not for use in horses and ponies intended for food.” http://www.drugs.com/vet/quest-plus-equine-oral-gel.html	
73.	N-(2-Ethylhexyl)-5-norbornene-2,3-dicarboximide	Bug Block (fly control) http://absorbine.org/products/flycontrol/bug-block-insecticide-repellent http://www.statelinetack.com/ContentFiles/Associated_Content/absorbinebugblockMSDS.pdf	“Harmful if ingested.” Bug Block fly control has multiple adverse effects if swallowed by humans. http://www.statelinetack.com/ContentFiles/Associated_Content/absorbinebugblockMSDS.pdf
74.	N-acetyl-D-glucosamine 10%	Polyglycan Post-surgical lavage of joint compartments. “Do not administer to animals that are to be slaughtered for food.” www.arthrodynamic.com/polyglycan/	Ingredient in Polyglycan, which includes warning: “For use only as a surgical lavage in animals not intended for food use.” http://www.medi-vet.com/Polyglycan.aspx
75.	Neomycin Sulfate	Animax ointment Human and animal antimicrobial, anti-fungal steroid drug	May cause nausea and vomiting, diarrhea, malabsorption syndrome, nephrotoxicity, ototoxicity, neuromuscular blockage, neurotoxicity, fetal harm. Especially dangerous for individuals with certain diseases of the muscles. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=3174
76.	Nitrofurantoin	Equifur Antibacterial for urinary tract infections in horses and humans. This drug is not to be administered to horses that are to be slaughtered for use in food. http://www.drugs.com/vet/equifur-can.html	Adverse effects include hypersensitivity reactions, pulmonary/hepatic/psychotic reactions, peripheral neuropathy, nausea and vomiting, anorexia, dizziness, exfoliative dermatitis, anaphylaxis, hematologic abnormalities, cyanosis, angioedema, asthenia. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=383

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
77.	Nitrofurazone	Niderm Ointment Antibacterial ointment, burns, skin grafts. 21 CFR § 524.1580b - “Do not use in horses intended for human consumption.” - “Federal law prohibits the use of this product in food-producing animals.” Federal law prohibits the administration of this preparation to animals that produce food or that are intended for consumption as food. http://www.drugs.com/vet/niderm-ointment-can.html	Very toxic to humans. http://www.sciencelab.com/msds.php?msdsId=9926271
78.	N-Octyl Bicycloheptene Dicarboximide	Farnam Roll-On Repellent Fly spray http://msds.farnam.com/m000018.htm	According to the manufacturer, Farnam Roll-On Repellent is “harmful if swallowed.”
79.	Nystatin	<u>Antimicrobial, antifungal and steroid</u> Animax ointment Mycostatin Bio-Statin For use in humans and horses with thrush.	Adverse reactions include oral irritation, sensitization, diarrhea, nausea and vomiting, gastrointestinal disturbances, rash, urticaria, Stevens-Johnson syndrome. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Nystatin See also: http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000767/ http://www.nlm.nih.gov/medlineplus/druginfo/meds/a682758.html
80.	Omeprazole	Treatment for ulcers in horses and humans. Gastrogard 21 CFR § 520.1615 - “Do not use in horses intended for human consumption.” http://gastrogard.us.merial.com/faq.shtml	Adverse reactions include headache, diarrhea, abdominal pain, nausea and vomiting, fever, respiratory disorders, severe allergic reactions, irregular heartbeat, bruising and bleeding. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Omeprazole
81.	Oxibendazole	Anthelcide dewormer	“Do not allow product to enter drinking water supplies, waste water or soil.”

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		21 CFR § 520.1638 - paste - “Not for use in horses intended for human consumption.” 21 CFR § 520.1638 - Suspension - “Not for use in horses intended for human consumption.” Not for use in horses intended for human consumption. http://www.drugs.com/vet/anthelcide-eq-equine-wormer-paste.html	http://www.seqchem.com/safetysheet.php?SQIndex=SRP012491o
82.	Parachlorometaxlenol	Scarlet Oil Not for use on animals intended for food. http://www.drugs.com/vet/scarlet-oil.html	May cause burning of mouth, throat and stomach, if ingested. http://surfactantsinc.com/pdf/Surcide%20PCMX-USP%20MSDS.pdf
83.	Phenol	Red-Kote Not for use on animals intended for food. http://www.drugs.com/vet/dr-naylor-red-kote.html	Phenol is considered to be quite toxic to humans via oral exposure. Anorexia, progressive weight loss, diarrhea, vertigo, salivation, a dark coloration of the urine, and blood and liver effects have been reported in chronically (long-term) exposed humans. Animal studies have reported reduced fetal body weights, growth retardation, and abnormal development in the offspring of animals exposed to phenol by the oral route. http://www.epa.gov/ttn/atw/hlthef/phenol.html
84.	Phenylbutazone	<u>NSAID:</u> Butazone 400 Butazone 1000 Butazone Concentrate Bute paste Butequine 21 USC §520.1770a - Tablets and boluses - Dogs and horses - “Do not use in horses intended for human consumption..” 21 USC § 522.1720	Serious and fatal adverse effects have been reported from ingestion of Phenylbutazone, including bone marrow suppression and aplastic anemia. Banned in America for human use. Nicholas Dodman, Nicolas Blondell, Ann M. Marini, “Association of phenylbutazone usage with horses bought for slaughter: A public health risk”, FOOD AND CHEMICAL TOXICOLOGY 48 (2010) 1270–74. “Phenylbutazone is known to induce blood dyscrasias, including aplastic anemia, leukopenia, agranulocytosis, thrombocytopenia and deaths. Hypersensitivity reactions of the serum-sickness type have also been reported. In addition, phenylbutazone is a carcinogen, as determined by the National Toxicology Program.” http://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm124078.htm Phenylbutazone is especially problematic for patients with a history of asthma attacks, hives, or other allergic reactions to aspirin or other NSAIDs. It also should be avoided by patients with peptic ulcer disease or poor kidney function, since this medication

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		- Injection - Dogs and horses - “Not for use in animals intended for food.” http://horsebackmagazine.com/hb/arc_hives/13184 http://www.farmvet.com/pc-1500-163-bute-paste-12-gm.aspx http://www.drugs.com/vet/butequine-can.html http://tuesdayshorse.wordpress.com/tag/cfia/	can aggravate both conditions. Phenylbutazone is generally used with caution in patients taking blood thinning medications (anticoagulants), such as warfarin (Coumadin), because of an increased risk of bleeding. Patients taking lithium can develop toxic blood lithium levels. Additionally, patients taking cyclosporine (Sandimmune) can develop kidney toxicity.
85.	Piperonyl Butoxide	Repel-XP Fly control Do not use on horses intended for human consumption. http://www.drugs.com/vet/repel-xp-emulsifiable-fly-spray.html	Potential dangers to humans are unknown: “Data are not available from accidental poisonings, occupational exposures, or epidemiological studies regarding the reproductive and developmental toxicity of piperonyl butoxide.” npic.orst.edu/factsheets/pbotech.pdf Ingestion can cause vomiting and diarrhea. Pesticide Action Network North America. Piperonyl Butoxide, http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC33240 The EPA classifies piperonyl butoxide as a group C carcinogen, a possible human carcinogen. Environmental Protection Agency. Reregistration Eligibility Decision for Piperonyl Butoxide. (June 2006). http://www.epa.gov/opp00001/reregistration/REDs/piperonyl_red.pdf
86.	Polysulfated Glycosaminoglycan	Adequan Joint treatment. 21 USC § 522.1850 - “Do not use in horses intended for human consumption.”	Data on human safety, pertaining to consumption of drug residues in food, were not required for approval of this supplemental new animal drug. The drug is approved for use only in horses that are not to be used for food and is to be labeled “Not for use in horses intended for food.” http://www.fda.gov/AnimalVeterinary/Products/ApprovedAnimalDrugProducts/FOIADrugSummaries/ucm054846.htm Based on the formulation of the drug, humans could develop anaphylaxis or excessive bleeding as the sulfated proteoglycans are anticoagulants.
87.	Ponazuril	Antiprotozoal Marquis paste; Marquis 21 CFR § 520.1855 - Horses only - “Not for use in horses intended	Unknown side effects and adverse reactions in humans ingesting Ponazuril. “Data on human safety, pertaining to consumption of drug residues in food, were not required for approval of this supplemental new animal drug. The drug is approved for use only in horses that are not to be used for food and is to be labeled ‘Not for use in horses intended for food.’” Freedom of Information Summary, Original New Animal Drug Application, NADA

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		for food.” “Not for use in horses intended for food.” http://www.drugs.com/vet/marquis-15-w-w-ponazuril-antiprotozoal-oral-paste.html	141-188 (Marquis), www.fda.gov/downloads/AnimalVeterinary/.../ucm117581.pdf
88.	Prallethrin	Insecticide Mosquito Halt Fly spray http://www.drugs.com/vet/mosquito-halt-repellent-spray-for-horses.html	Potential poisoning, headache, dizziness, nausea, and seizure. http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC35755 “Pyrethroid ingestion gives rise within minutes to a sore throat, nausea, vomiting and abdominal pain. There may be mouth ulceration, increased secretions and/or dysphagia. Systemic effects occur 4-48 hours after exposure. Dizziness, headache and fatigue are common, and palpitations, chest tightness and blurred vision less frequent. Coma and convulsions are the principal life-threatening features. Most patients recover within 6 days. . . .” S.M. Bradberry <i>et al.</i> , <i>Poisoning Due to Pyrethroids</i> , Toxicol Rev. 24(2):93-106 (2005) (quoting abstract).
89.	Praziquantel	Dewormer For horses and humans Equimax Quest Plus Zimecterin Gold http://www.equimaxhorse.com/ http://www.drugs.com/vet/quest-plus-equine-oral-gel.html “Not for use in humans.” (Zimecterin) http://www.zimecterin.com/ZimecterinGold/index.html?50	Available by prescription only and to be taken only under the monitoring of a physician. Contraindicated for people with pre-existing conditions involving the liver, kidney, or heart. Praziquantel may cause side effects including headache, dizziness, stomach pain, nausea, fever, itching, hives (especially serious). http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000474/ http://www.rxlist.com/biltricide-drug/patient-images-side-effects.htm
90.	Prednisone	Human and horse steroid 21 USC § 522.1890 - Horses, dogs and cats - “Not for use in horses intended for human consumption.”	Steroids should be taken under a doctor’s supervision and have multiple significant adverse effects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain.
91.	Prostaglandin	Lutalyse solution Horse and human use – regulation of	Can cause unknown and unwanted hormonal effects, including termination of pregnancy, to individuals who ingest without knowing.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		female reproduction and other uses. This drug is not to be administered to horses that are to be slaughtered for use in food. http://www.drugs.com/vet/lutalyse-sterile-solution-can.html	
92.	Pseudoephedrine HCl	Tri-Hist Granules Not for use in horses intended for food. http://www.drugs.com/vet/tri-hist-granules.html	Can cause central nervous stimulation, insomnia, anxiety, dizziness, blurred vision, colitis, and psychosis when combined with other drugs.
93.	Pyrantel Pamoate	Exodus Paste Dewormer 21 CFR § 520.2044 - Horses and ponies - “Do not use in horses intended for human consumption.” 21 CFR § 520.2043 - Horses and ponies - “Do not use in horses intended for human consumption.” http://www.drugs.com/vet/exodus-paste.html	Adverse reactions include abdominal cramps, nausea and vomiting, diarrhea, headache, dizziness. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=2985
94.	Pyridoxine HCl	Liver 7 injection	Potential health effects after ingestion unknown. http://www.sciencelab.com/msds.php?msdsId=9924765
95.	Pyrilamine Maleate USP	Tri-Hist Granules Antihistamine (human and horse use) 21 CFR § 522.2063 - “Do not use in horses intended for food purposes.” Not for use in horses intended for food. http://www.drugs.com/vet/tri-hist-granules.html	Many individuals with identified health conditions have hypersensitivities to antihistamines and the use of antihistamines is contraindicated in that portion of the population. http://www.drugs.com/pro/poly-hist-pd.html

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
96.	Rabies vaccination	Imovax Rabies Vaccine	The dangers of human ingestion are unknown.
97.	Ractopamine hydrochloride	Optaflexx 100 Premix Beta-agonist used for growth promotion purposes	A January 2012 article reported that ractopamine hydrochloride is “[f]ed to an estimated 60 to 80 percent of pigs in the United States, [and has] has sickened or killed more of them than any other livestock drug on the market.” While the FDA has approved the drug for use in cows and pigs, many countries have banned it from food-producing animals, and the drug has never been tested on horses intended for human consumption. http://bottomline.msnbc.msn.com/_news/2012/01/25/10220221-dispute-over-drug-in-feed-limiting-us-meat-exports
98.	Rhinopneumonitis vaccine	5-way (vaccination) http://www.alpineanimal.net/page6263a3c5.html?inc=na	Unknown consequences for humans.
99.	Ronidazole	Antiprotozoal agent http://www.wedgewoodpetrx.com/itms/ronidazole-capsule.html	Does not appear to have any human applications. Dangerous side effects in animals. Toxicity information and potential health effects are unknown. https://www.reagentworld.com/products/msds2.asp?proid_2=23072
100.	Selenium	Trace mineral supplement 21 USC § 522.2100 - “Do not use in horses intended for food.”	Rare but potential side effects include nausea, vomiting, abdominal pain, hearing loss, fatigue, weight loss, muscle tenderness, heart failure, and allergic reactions.
101.	Stanozolol	Anabolic steroid Used in both animals and humans. 21 USC 522.2150 - “Not for use in horses intended for food.” http://www.petplace.com/drug-library/stanozolol-winstrol/page1.aspx	Potential side effects of anabolic steroids are well-documented. Steroids should be taken under a doctor’s supervision and have multiple significant adverse affects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain
102.	Stilbenes	Used in estrogen-related substances	Animals treated with these drugs are banned from meat production in the European Union. http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=EN&numdoc=32008L0097
103.	Strangles vaccine (Streptococcus Equi vaccine)	Vaccination for <i>streptococcus equi</i> http://www.aaep.org/strangles.htm Pinnacle I.N. (strangles)	Dangers of human ingestion unknown.

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		http://www.drugs.com/vet/pinnacle-i-n.html	
104.	Sucralfate	Used to aid in healing gastrointestinal tract, ulcers, for humans and animals.	Adverse reactions include constipation, diarrhea, nausea and vomiting, pruritus, rash, dizziness, insomnia, back pain, headache, dry mouth, flatulence, gastric discomfort, indigestion, sleepiness. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Sucralfate
105.	Sulfadiazine	Tribrissen (oral) 400 paste 21 CFR § 520.2215 - “Do not use in horses intended for human consumption.” 21 CFR § 520.2260a - “Do not use in horses intended for human consumption.” http://www.drugs.com/vet/tribrissen-400-oral-paste.html	Sulfadiazine has potential cross-sensitivity with other drugs in the same class. Some individuals will have blood cell destruction from the drug. It can also cause transient leukopenia, skin necrosis, skin discoloration, burning sensation, rash, interstitial nephritis, and other systemic reactions. http://www.pdr.net/search/searchResult.aspx?searchCriteria=Sulfadiazine
106.	Sulfamethoxazole Trimethoprim	Antibacterial Bactrim, Septra	While these drugs are approved for human use, unnecessary ingestion of antibiotics is medically contraindicated. Additionally, adverse reactions include nausea and vomiting, anorexia, allergic skin reactions (e.g., rash, urticaria), agranulocytosis, aplastic anemia, hepatitis, renal failure, hyperkalemia, aseptic meningitis, arthralgia, convulsions, cough.
107.	Sunscreens	Components in various fly spray products http://www.horse.com/ContentFiles/Associated_Content/ultrashieldexlab el.pdf	While sunscreens are used by humans, there is no substantial literature or studies on ingestion of sunscreens or their byproducts and metabolites.
108.	Testosterone enanthate	Uni-Bol Male sex hormone http://www.drugs.com/vet/uni-bol-can.html	The ingestion of male hormones, when not medically indicated, can create hormonal imbalances. Additionally, use may cause dangerous reactions in hypersensitive individuals or those with other illnesses. Can increase prostate and other problems in elderly men. Can also cause hormone-mediated reactions, fluid and electrolyte disturbances, nausea, cholestatic jaundice, alterations in liver function, headache, and anxiety. It is also designated as “not for use” in nursing mothers. http://www.pdr.net/drugpages/concisemonograph.aspx?concise=2017
109.	Thiamine HCl	Included in liver 7 injection http://www.drugs.com/vet/liver-7-injection.html	Hazardous in case of ingestion. http://www.sciencelab.com/msds.php?msdsId=9925232

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
110.	Thyrostats	Thyroid-related growth promotion Antithyroid agents for the purpose of growth promotion	Animals treated with these drugs are banned from meat production in the European Union. http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=EN&numdoc=32008L0097 .
111.	Topazone Aerosol Powder	Antibacterial Topazone Furox http://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm137145.htm	Contains chemicals known to the state of California to cause cancer. Should only be taken under strict medical oversight; dangerous if taken with alcohol, when pregnant, or for individuals with certain blood disorders. Adverse effects include headache, stomach upset, nausea, vomiting, dizziness or weakness, fever, skin rash, itching, muscle aches, flushing, breathing trouble. This medication may cause the urine to turn brown in color.
112.	Triamcinolone Acetonide	Component in Animax ointment Antimicrobial, anti-fungal, steroid (for thrush treatment) 21 CFR § 520.2483 - tablets - “Do not use in horses intended for human consumption.” 21 CFR § 522.2483 - Suspension - “Do not use in horses intended for human consumption.”	Steroids should be taken under a doctor’s supervision and have multiple significant adverse affects including severe allergic reactions, hormonal changes, changes in menstrual functions, mental and mood changes, respiratory problems, nausea and vomiting, joint swelling, vision changes, and unusual weight gain.
113.	Trimethoprim	Uniprim antibiotic Powder For treatment of <i>Streptococcus equi</i> (“Strangles”) 21 CFR § 520.2611 - “Do not use in horses intended for human consumption.” 21 CFR § 520.2613 - Trimethoprim and sulfadiazine powder - “Not for use in horses intended for food.” “Do not use in horses intended for human consumption.”	Trimethoprim is a strong antibiotic with multiple potential adverse reactions, adverse interactions with other drugs and hypersensitivities noted in individuals with various diseases and metabolic conditions. http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000813/

	Drug	Product/Type/Warnings	Potential problems from human ingestion of residue or metabolites
		http://www.drugs.com/vet/tribrissen-400-oral-paste.html http://www.drugs.com/vet/uniprim-powder.html	
114.	West Nile virus	Recombitek West Nile Vaccine http://www.drugs.com/vet/recombitek-equine-west-nile-virus-can.html	This vaccine has only been approved for use in horses and no data exists with respect to the safety of humans eating it, or meat from animals who have received it.
115.	Xylazine	Sedative Anased 21 CFR § 522.2662 - “Not for use in horses intended for food. - “Do not use in domestic food-producing animals.”	Xylazine poisoning causes hypotension, bradycardia, and respiratory depression. Ocular administration can cause sinus bradycardia, hypotension and decreased mental status. Velez LI, Shepherd G, Mills LD, Rivera W., <i>Systemic toxicity after an ocular exposure to xylazine hydrochloride</i> , J. EMERG. MED. 30(4):407-10 (2006).