From: Carson, Bryce - FSIS
Sent: Wednesday, January 02, 2013 7:18 AM
To: Hagen, Elisabeth - OSEC; Ronholm, Brian - OSEC; Derfler, Phil - FSIS
Subject: Horse decision memo - 7416749

Good morning,

Attached is the horse decision memo prepared for OFS. For your reference, this document is also found in ECM folder 7416749.

Please let me know if you need anything further or have any questions.

Thank you,

Decision Memo for Equine Slaug...

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Rm. 1164-S

ENTERPRISE CONTENT MANAGEMENT FOLDER COVER SHEET

7416749

07/17/2013

Control Number: 7416749 **Folder Status:** Active **Processing Code:** FIRJK4

Folder Owner: OSEC/OFS/FSIS/OPACE/MG/ECIMS/Folder Setup Group

Action Organization: OSEC/OFS/FSIS/OPACE/MG/ECIMS/Ottery

Date on Letter: None **Due Date:** None

Received Date: 09/14/2012 **Interim Date:** None

VIP Type:

Correspondent:

Referrer:

Addressee:

Final Signer: **Sign Date:** None

Subject: **Special Attention:**

Reference Number: **Special Instruction:**

Synopsis:

	Assignee	Task	Status	Actual User	Assigned Days	Due Date	Date Received	Date Completed	Days Over Due
1	ECIMS Red Jackets	Review	Completed	EVENIA PALMER as proxy for THERESA OTTERY	2	09/18/2012	09/14/2012 02:55:26 PM CDT	09/14/2012	-2
2	OA Red Jackets	Clearance	Completed	Ethel Fumey	2	09/18/2012	09/14/2012 03:09:04 PM CDT	10/11/2012	+16
3	ECIMS Red Jackets	Review	Completed	EVENIA PALMER	2	10/15/2012	10/11/2012 09:45:01 AM CDT	10/11/2012	-2
4	BRYCE CARSON	Review	Completed	THERESA OTTERY	2	10/15/2012	10/11/2012 01:57:34 PM CDT	10/12/2012	-1
5	ECIMS Red Jackets	Review	Completed	EVENIA PALMER	2	10/16/2012	10/12/2012 06:30:23 AM CDT	10/12/2012	-2
6	OA Red Jackets	Signature	Completed	Ethel Fumey	2	10/16/2012	10/12/2012 06:54:39 AM CDT	10/12/2012	-2
7	OFS Red Jackets	Clearance	Started	Sandra Stasiak	2	10/16/2012	10/12/2012 01:22:59 PM CDT		+188
8	ECIMS Red Jackets	Close Folder	Not Started		1	10/17/2012			+187

USDA

ECM COVER NOTES

7416749

07/17/2013

Control Number:	7416749	**Processing Code:**	FIRJK4
Folder Owner:	OSEC/OFS/FSIS/OPACE/MG/ECIMS/Folder Setup Group		
Action Organization:	OSEC/OFS/FSIS/OPACE/MG/ECIMS/Ottery		
Date on Letter:	None	**Due Date:**	None
Received Date:	09/14/2012	**Interim Date:**	None

Synopsis:

Created By	Date	Notes
Sandra Stasiak	03/07/2013 03:36:26 PM CST	still no decision has been made yet
Sandra Stasiak	02/21/2013 07:33:37 AM CST	still no decision has been made yet
Sandra Stasiak	01/09/2013 06:58:08 AM CST	per my conversation with Katie on the status of this document on January 4th, there is still no decision yet.
DELPHINE HYMAN	11/07/2012 09:52:45 AM CST	OFS will be holding the memo until further notice.
DELPHINE HYMAN	11/06/2012 03:14:30 PM CST	Adela sent email stating Dr. Hagen has not signed off on the Memo.
DELPHINE HYMAN	11/06/2012 01:26:52 PM CST	Tiffanie is speaking with Adela about the Memo. Will get back to ECIMS as soon as she knows something.
Sandra Stasiak	10/24/2012 08:34:43 AM CDT	OFS still has; put in Under Secretary Hagen's box for review
ndra Stasiak	10/16/2012 12:11:13 PM CDT	fwd to Katie Naessens for review and clearance
ethel Fumey	10/12/2012 01:22:29 PM CDT	Memo cleared and signed by P Derfler for A Almanza on 10 12 2012.
Ethel Fumey	10/12/2012 10:33:02 AM CDT	Printed for OA review.
EVENIA PALMER	10/12/2012 06:54:35 AM CDT	OA, forwarding this back in case Al wants to sign the letter itself, although he signed off on the cover sheet. If he wants to sign, the edits have been addressed and the attachments are uploaded per Phil's request, if not, please complete task to move to OFS. Thanks
THERESA OTTERY	10/12/2012 06:22:17 AM CDT	Confirmed the Appendices are in place and edits made. Modified workflow to route to CCO.
THERESA OTTERY	10/12/2012 06:20:03 AM CDT	Rolled in changes to document: This is ready to move forward. Completed Task.
THERESA OTTERY	10/11/2012 04:19:24 PM CDT	Please ignore note below.
THERESA OTTERY	10/11/2012 04:06:39 PM CDT	CCO/OA: Please print out both enclosures (in the documents tab), along with the Decision Memorandum.
THERESA OTTERY	10/11/2012 04:05:00 PM CDT	Made revisions to Draft Document. This is ready to return to OA for signature.
EVENIA PALMER	10/11/2012 01:57:28 PM CDT	Bryce please see OA's notes. Thanks
Ethel Fumey	10/11/2012 09:44:06 AM CDT	A Almanza initialed off on the cover notes sheet at the bottom and per Phil there are changes needed on pages 3, 5, and 7. Also, per P Derfler's note make sure the attachments referenced are included before this document go's forward....these attachements were not in ECM when documents were pritned out for OA review on 9/14/2012.
Ethel Fumey	09/14/2012 03:18:41 PM CDT	Printed for OA review.
EVENIA PALMER as proxy for THERESA OTTERY	09/14/2012 02:50:49 PM CDT	OA please review and clear uploaded Decision Memo. Thanks

United States Department of Agriculture | Food Safety and Inspection Service | Washington, D.C. 20250

DECISION MEMORANDUM FOR THE UNDER SECRETARY

FROM: Alfred V. Almanza
Administrator

SUBJECT: Development of an Equine Slaughter and Further Processing Inspection Regime

ISSUE: The Under Secretary has asked for a proposed way forward on equine slaughter and further processing of equine meat for human consumption. This memorandum discusses the relevant technical issues and suggests how FSIS should proceed in light of a petition from the Humane Society of the United States (HSUS) to ban the slaughter and further processing of equines.

BACKGROUND: The Federal Meat Inspection Act (FMIA) provides for inspection of amenable livestock species intended for human consumption, including equine. Meat from amenable species that has not been inspected and passed cannot be shipped or sold for human consumption.

In 2006, Congress prohibited FSIS from spending any appropriated funds for ante-mortem inspection of equines. Because no equines can be slaughtered under the FMIA without ante mortem inspection, this action effectively shut down equine slaughter in the United States. In 2012, however, Congress did not include this prohibition in the appropriation law, and as a result, two establishments – one in Missouri and the other in New Mexico – have applied for a grant of inspection exclusively for equine slaughter. FSIS has yet to act on these applications. In addition, FSIS recently received an inquiry from an individual in Missouri who was looking into the feasibility of purchasing an existing further processing establishment and then further processing imported equine meat for human consumption for distribution through a mail-order catalog.

Additionally, FSIS received a petition from HSUS to ban equine slaughter. The petition's primary assertion is that drug use in horses is so widespread in the United States that it will be virtually impossible for FSIS to establish a residue testing program that will ensure the safety of equine meat.

DISCUSSION: Given that FSIS last conducted equine inspection 6 years ago, the Agency has determined that it needs to spend a significant amount of time reestablishing the processes needed for appropriate inspection of equines. In particular, a number of technical issues need to be addressed before the infrastructure for any equine inspection system is ready, and any establishment can receive a grant of inspection to slaughter or further process equines. These issues include:

- Slaughter and Further Processing Inspection Processes

- Inspector Training
- Environmental Impacts
- Residue Testing
- Petition Issues

Inspection Processes: Just as FSIS does for all amenable livestock species, the Agency would ensure industry compliance with all relevant statutes and regulations, including the FMIA, Hazard Analysis and Critical Control Point (HACCP) regulations, Sanitation Standard Operating Procedures (SOPs), other sanitation regulations, and the Humane Methods of Livestock Slaughter Act.

The principal difference between equine establishments and other livestock slaughter and further processing establishments is that the Agency's regulations require equine slaughter to be done in establishments separate from any establishment in which cattle, sheep, swine, or goats are slaughtered (9 CFR 305.2(b)). FSIS has denied three requests for a waiver of this regulation from domestic establishments. FSIS regulations provide authority for waivers for purposes of permitting experimentation so that new procedures, equipment, or processing techniques may be tested to facilitate specific and definite improvements (9 CFR 303.1(h)). FSIS denied the requests for waivers because FSIS concluded that simply permitting a practice that is prohibited under our current regulations would not be consistent with the purpose of the regulation that provides authority for such waivers.

> **Next Steps**: FSIS will continue to work closely and consistently with the establishments that have applied for a grant of inspection to ensure that all FSIS requirements are fully understood. When appropriate, the Agency will update its notices and directives for equine inspection.

Inspector Training: Although hiring and training new inspectors typically takes up to 3 months, if an existing cattle slaughter establishment decides to convert to equine slaughter establishment, then inspectors at that facility would only need to receive a few days of on-the-job training. FSIS is not aware of any reason why it could not use the inspection procedures it used for equine slaughter before 2006. Moreover, FSIS will likely be able to use the training materials it used at that time. In fact, one of the Agency's trainers formerly worked in an equine slaughter plant.

> **Next Steps**: Once FSIS fully incorporates equine slaughter into PHIS, FSIS will need to update the training materials to incorporate the reporting of inspection results into PHIS.

Environmental Impacts: HSUS has asserted that the National Environmental Policy Act (NEPA) requires FSIS to prepare an environmental assessment (EA) or an environmental impact statement (EIS) prior to approving a Grant of Inspection to an equine slaughter facility.

Actions of FSIS have been categorically excluded from the preparation of an EA or EIS unless the Administrator determines that an action may have a significant environmental effect (7 CFR 1b.4). The Department has long determined that FSIS' programs and activities would have no individual or cumulative effect on the human environment.

The inspection laws mandate that FSIS provide inspection as long as the establishment complies with the statutes' requirements and the Agency's regulations. A Grant of Inspection from FSIS differs from licenses, such as the nuclear reactor licenses issued by the U.S. Nuclear Regulatory Commission (NRC), because the FMIA does not give FSIS permitting authority over the construction of facilities like the Atomic Energy Act (42 U.S.C. 2133 and 2235) and the Federal Power Act (16 U.S.C. 797(e)) give the NRC.

HSUS relies on the case of *The Humane Society of the United States v. Johanns,* 520 F. Supp. 2d 8 (D.D.C. 2007). The Agency believes that case is not applicable to this situation. The *Johanns* case arose after Congress prohibited FSIS, as discussed above, from spending appropriated funds to carry out ante mortem inspection of equines. While the congressional prohibition cited inspection conducted under the FMIA, FSIS subsequently issued a regulation under the Agricultural Marketing Act (AMA) of 1946 that set up a voluntary user fee or fee-for-service program in which FSIS would provide ante-mortem inspection, just as it had done before under the FMIA, for a fee. The District Court ruled that because the regulation did not perpetuate the regulatory status quo, the effects of the horse slaughter operations should have been assessed pursuant to NEPA prior to promulgation of that rule. However, the Agency's view is that FSIS' current activities to potentially resume equine slaughter inspection are occurring under the FMIA, not the AMA, and therefore the situation in the HSUS case is not applicable.

> **Next Steps**: FSIS has evaluated the potential decision to provide equine slaughter inspection and has documented its tentative conclusion in an internal memo. The memo tentatively concludes that FSIS can invoke its categorical exclusion because no unique or potentially significant environmental effects exist compared to the thousands of existing Grants of Inspections for other species.

***Residue Testing*:** As for all amenable species, FSIS will need to verify that any equines slaughtered do not contain an illegal drug residue that would render the meat unfit for human consumption. However, because the Food and Drug Administration (FDA) does not consider equine muscle to be "food," it has not set acceptable daily intake or tolerance levels for residues in equine meat as it has for the other amenable species. Thus, if FSIS finds a drug residue in any equine meat sample, it would not be able to find that the product is not adulterated, and thus the Agency would not be able to apply its mark of inspection to the meat. Importantly, unlike most other livestock, some equines are not raised for human food purposes. Some equines are used for racing and pleasure riding and, consequently, are administered drugs that never were intended for use in food animals (e.g., steroid treatments). Thus, drug residue profiles in equine tissue may be markedly different than for other livestock.

> **Next Steps**: To test equine meat for the presence of drug residues, the Agency intends to validate the methods that it uses to test other amenable species for use on equine meat. The equine residue testing data that the Agency developed from 1983 through 2007 (see attachment 1) suggests that many of the compounds likely to be used in equines fit for use as human food mirror to a large extent those for other amenable species. These data

from that period show that the majority of violations involved antibiotics such as Streptomycin (59 violations in 2000, 35 in 1999); Penicillin (9 violations in 2000, 8 in 1999); and Chlortetracycline, Gentamicin, and Oxytretatratcycline, among others. The remaining violations included various sulfa compounds, pesticides, and antiparasitic drugs.

FSIS has started to validate several new methods for equine tissue. A comprehensive residue testing program could be implemented by the end of the current calendar year. However, implementing validated lab methods for hormones and tranquilizers in equine tissue will not occur until 2014.

Petition Issues: While resolving these technical issues is critical to the development of any inspection system, the decision on how to respond to the HSUS petition will likely determine what type of inspection system FSIS would seek to implement and when. HSUS has petitioned FSIS to ban equine slaughter because, the petition asserts, drug use is so widespread in the United States that it will be virtually impossible for FSIS to establish a residue testing program that will ensure the safety of equine meat. Specifically, the petition requests that FSIS engage in rulemaking to prevent the risk that consumers of equine meat will have painful or prolonged adverse reactions or drug side effects or contract diseases after they have eaten the meat from these equines; and to ensure that proper controls are in place to prevent these equines from being slaughtered for food. HSUS highlights 42 compounds administered to equines that it believes pose food safety risks. FSIS has developed a plan for implementing testing for the majority of these compounds (see attachment 2).

HSUS argues that the only way to ensure the safety of equine meat is to establish a system that captures the history of drug use on each animal, similar to that employed by the European Union. Canada also has an equine slaughter system that may provide a model.

The EU System: The EU recently introduced the following requirements for equines intended for human food:

- The creation of a system of identity verification for equines intended for human food;
- A prohibition of anabolic steroids, or a system of segregating equines that have been treated with steroids;
- A system providing that all equines have lifetime treatment records documenting all substances used for treatments;
- Compliance with required 6-month withdrawal periods for veterinary medical products administered to equines; and
- The creation of a risk-based program to control the use of veterinary medical products and substances banned for use in the EU

The Canadian System: The Canadian Food Inspection Agency (CFIA) maintains a domestic equine slaughter inspection program that includes traceability and chemical residue testing. This program meets the EU requirements discussed above.

All Canadian equine slaughter establishments must keep complete identity and medical records of all animals presented for slaughter, either by an Equine Information Document (EID) or the Equine Lot Program (ELP), which is similar to the U.S. EV program. EID contains the animal description, 6-month drug history, picture ID/or other means of identification of the animal, and medical history. This document must accompany the animal at time of ownership transfer. In the ELP, an owner of a group or groups of animals may present a group declaration instead of individual EIDs. CFIA audits the ELP annually. According to CFIA, the advantage of ELP is that the owner is not required to provide a full narrative description of each individual animal, paperwork is reduced, and CFIA deems these animals under this program to be of lesser food safety risk.

CFIA has provided a list of drugs that food-producing animals should not receive throughout life and a list of drugs that should be not given during last 6 months of life. FSIS has not identified a mechanism used by CFIA to determine whether the prohibited drugs were ever given during an animal's life, as CFIA only reviews records from the last 6 months. However, CFIA has informed FSIS that Canada is working to develop a lifetime identity and traceability system for equine slaughter.

CFIA operates a residue testing program for equines based on EU requirements (EU Directive 96/23), and equines are also tested for Trichinae using a digestion method.

The question thus becomes whether, assuming that FSIS validates the methods that it intends to use on equine meat, and assuming that none of the questions discussed above present an insurmountable obstacle, FSIS could appropriately apply its mark of inspection to equine meat without requiring the type of documented drug use history required by the EU or Canada, or should it institute rulemaking to require such a history? There are two factors that bear on this question. First, once validated, will the tests that FSIS intends to employ be broad enough so that FSIS can confidently assert that a negative result in this testing ensures that no drugs have been illegally used on the equine? There is some sentiment in the FSIS labs that the answer to this question is yes. There is a belief that the presence of a residue of any drug likely to be illegally used in equines would be discovered by one of the tests that the Agency is validating for equine meat. FSIS would likely need to confirm this view with FDA should there be tentative acceptance of it.

The second factor is largely political. FSIS is already seen in some quarters in Congress as dragging its feet on the equine slaughter issue. To require a passport-type approach like that of the EU, FSIS would have to engage in rulemaking. Such rulemaking would likely take at least 2 years. Some are sure to argue that such a passport is unnecessary because FSIS operated the equine slaughter program prior to 2006, and prior to the EU's new requirements adopted in 2009, without requiring such information. Another factor to be considered is the possibility of punitive congressional action if FSIS fails to institute an equine slaughter program.

Finally, the Agency needs to consider the argument that equines are an amenable species under the FMIA, and therefore FSIS has no choice but to institute an equine slaughter and further

processing program. Under this argument, the fact that drug use is widespread in equines is essentially irrelevant. FSIS needs to have an inspection program for equines even if every equine presented for slaughter is condemned for a drug residue. It is up to the producers and the slaughter plant whether they wish to risk the investment that they have in the equines. It is FSIS's obligation to provide the slaughter program and take appropriate steps to ensure food safety.

RECOMMENDED OPTIONS:

FSIS expects to make recommendations on how to respond to the HSUS petition by late October. Assuming the technical issues discussed above (inspection processes, inspector training, environmental impacts, and residue methods) are satisfactorily resolved, FSIS could:

Option 1: Accept the petition and initiate rulemaking to require lifetime medical history for horses slaughtered for human consumptions on the grounds that equines, especially since 2006, have not been raised as food animals and have thus been administered a wide variety of drugs unfit for human consumption. To give the Agency time to develop rulemaking and formulate a process to implement a system that is EU-equivalent, as the petition recommends, FSIS would delay moving forward with implementing a system for equines that is based on lab methods for other amenable species. FSIS would need to initiate rulemaking to establish a system that captures the history of drug use on each animal, including lifetime treatment records, or simply request public input on the issue.

> *Pro*: This approach could both ensure that equine meat is safe, and work toward meeting new requirements implemented in 2009 by the EU.
>
> *Con*: First, developing and implementing such a system would require substantially more time, planning, and resources. Rulemaking would require at least 2 years. Second, this approach would be contrary to the one applied to all other livestock, for which the existing drug surveillance testing program is sufficient. Third, implementing validated lab methods for hormones and tranquilizers in equine tissue will not occur until 2014. Finally, establishing such an animal identification system, as required by the EU for export of equine meat, should come as a broader government-wide decision, not simply for one species.

Option 2: Deny the HSUS petition on grounds that it is not compelling as to why equine slaughter and processing are unique versus other livestock, and because the FSIS surveillance program for drug residues in horses should be sufficient to protect public health. When all lab methods relevant to equine tissue are validated, FSIS would proceed with implementing a residue program that parallels the one used for other amenable species. Establishments seeking to export to the EU would still need to separately meet EU requirements, and FSIS could work with the Agricultural Marketing Service to develop a voluntary, fee-for-service Export Verification (EV)-style program to verify that those requirements were met before export. AMS would be responsible for reviewing and approving companies as eligible suppliers of equine

meat and for maintaining approved supplier and products lists.

Pro: Implementing a system based on that used for other amenable species is logically consistent with FSIS' overall approach to residue testing. Once lab methods are fully developed, FSIS labs will be capable of testing for the compounds of concern in the petition. An EV program would allow establishments to export to the EU, and potentially other foreign markets.

Con: Many stakeholders, including the general public, may perceive that using a system based on other amenable species is not sufficient to protect the public health, potentially leading to further stakeholder and congressional action. Developing and implementing an EV program would require substantial time and resources.

Option 3: Postpone ruling on the merits of the petition or implementing inspection of horse slaughter or processing on the grounds that the petition has raised sufficient concern about the safety of equine meat that FSIS must further evaluate residue testing for equine tissue. FSIS would need to determine first, whether or not residues are present, and second, if the residues that are present have a lasting, harmful effect. While implementing validated testing methods for equine tissue would determine residue presence, FSIS would consult with FDA to determine whether or not FDA would find that certain drugs administered to equines have a lasting, harmful effect on the muscle tissue.

Pro: Further evaluating residue presence in equine tissue would provide evidence to substantiate or refute stakeholder claims that there is a public health risk associated with consumption of equine meat.

Con: FSIS could be seen as not following congressional direction and again delaying the process of developing a system for equine slaughter and further processing. FSIS would likely need to deflect persistent efforts from all interested stakeholders to change the Agency's course in the meantime. Industry would be indefinitely prevented from proceeding with equine slaughter. Acknowledging the uncertainty of the concerns raised in the petition would also likely open FSIS' existing residue testing program for all other species to similar scrutiny.

DECISION BY THE UNDER SECRETARY:

Option 1 _____

Option 2 _____

Option 3 _____

Discuss with me _____

Reviewed by _____

Date _____

Appendix 1

Updated - 8/8/2012 PB

FSIS National Residue Program - Historical Data on Equine Residue Testing

YEAR	Monitoring Program				Surveillance Samples		
1983	Compounds	# Analyzed	NV Positive	Violations	# tested	NV Positive	Violations
	Sulfadimethoxine	96	0	0	8	0	0
	Sulfamethazine	96	3	4	8	2	0
	Sulfathizole	96	1	0	8	0	0
	Sulfabromomethazine	96	0	0	8	0	0
	Penicillin	94	0	1	8	0	0
	Streptomycin	94	0	0	8	0	1
	Tetracycline	94	0	0	8	0	0
	Erythromycin	94	0	0	8	0	0
	Neomycin	94	0	0	8	0	0
	Oxytetracycline	94	0	0	8	0	0
	Chlortetracycline	94	0	0	8	0	0
	Chloramphenicol	11	0	0			

YEAR	Monitoring Program				Surveillance Samples		
1984	Compounds	# Analyzed	NV Positive	Violations	# tested	NV Positive	Violations
	Aldrin	343	0	0	30	0	0
	Benzene Hydrochloride	343	62	1	30	0	0
	Chlordane	343	4	1	30	1	0
	Dieldrin	343	25	1	30	5	0
	DDT and metabolities	343	69	0	30	5	0
	Endrin	343	2	0	30	1	0
	Heptachlor	343	32	0	30	13	0
	Lindane	343	3	0	30	0	0
	Methoxychlor	343	1	0	30	0	0
	Toxaphene	343	1	0	30	0	0
	PCB	343	0	0	30	0	0
	Hexachrolobenzene	343	53	0	30	0	0
	Mirex	343	0	0	30	0	0
	Strobane	343	0	0	30	0	0
	Nonachlor	343	0	0	30	0	0
	Penicillin	281	0	1	6	0	0
	Streptomycin	281	0	1	6	0	0
	Tetracycline	281	0	0	6	0	0
	Erythromycin	281	0	0	6	0	0
	Neomycin	281	0	0	6	0	0
	Oxytetracycline	281	0	0	6	0	0
	Chlortetracycline	281	0	0	6	0	0
	Gentamicin	281	0	0			
	Sulfathoxypyridazine	24	0	0			
	Sulfachloropyridazine	76	0	0			
	Sulfadimethoxine	102	0	0	1	0	0
	Sulfamethazine	102	0	3	1	1	0
	Sulfamethoxypyridazine	24	0	0			
	Sulfathiazole	102	0	1	1	0	0
	Sulfaquinoxaline	102	0	0			
	Sulfabromomethazine	102	0	0	1	0	0
	Sulfapyridine	102	0	0	1	0	0
	Chloraphenicol	115	0	0			
	Fenbendazole	109	0	1			

YEAR	Monitoring Program				Surveillance Samples		
1985	Compounds	# Analyzed	NV Positive	Violations	# tested	NV Positive	Violations
	Aldrin	313	0	0	10	0	0
	Benzene Hydrochloride	313	3	0	10	0	0
	Chlordane	313	3	0	10	0	0
	Dieldrin	313	2	0	10	0	0
	DDT and metabolities	313	35	1	10	0	0
	Endrin	343	0	0	10	0	0
	Heptachlor	313	5	0	10	0	0
	Lindane		1	0	10	0	0
	PCB				10	1	0
	Mirex	313	1	0	10	0	0
	Penicillin	339	0	1	5	0	0
	Streptomycin	339	0	1	5	0	0
	Tetracycline	339	0	0	5	0	0
	Tylosin	339	0	0	5	0	0
	Erythromycin	339	0	0	5	0	0
	Neomycin	339	0	0	5	0	0
	Oxytetracycline	339	0	0	5	0	0
	Chlortetracycline	339	0	0	5	0	0
	Gentamicin	339	0	0	5	0	0
	Licomycin	339	0	0	5	0	0
	Novobiocin	339	0	0	5	0	0
	Virginiamycin	339	0	0	5	0	0
	Sulfathoxypyridazine	105	0	0			
	Sulfachloropyridazine	105	0	0			
	Sulfadimethoxine	105	0	0			
	Sulfamethazine	105	0	1			
	Sulfamethoxypyridazine	105	0	0			
	Sulfathiazole	105	0	0			
	Sulfaquinoxaline	105	0	0			
	Sulfabromomethazine	105	0	0			
	Sulfapyridine	105	0	0			
	OPs (Screen) /Parathion				1	1	0

OP Screen: Coumaphos, Dichlrvos, Diazinon, Ethion, Malathion, Parathion, Ronnel, Cruomate, Trichlorfon, Methyl Parathion, Dioathion

YEAR	Monitoring Program				Surveillance Samples		
1986	Compounds	# Analyzed	NV Positive	Violations	# tested	NV Positive	Violations
	Aldrin	108	0	0			
	Benzene Hydrochloride	108	5	0			
	Chlordane	108	0	0			
	Dieldrin	108	9	1			
	DDT and metabolities	108	39	0			
	Endrin	108	0	0			
	Heptachlor	108	16	0			
	Lindane	108	1	0			
	Methoxychlor	108	0	0			
	Toxaphene	108	0	0			
	PCB	108	0	0			
	HCB	108	5	0			
	Mirex	108	0	0			
	Strobane	108	0	0			
	Nonachlor	108	0	0			
	Penicillin	111	0	3	20	0	0
	Streptomycin	111	0	2	20	0	3
	Tetracycline	111	0	0	20	0	0
	Tylosin	111	0	0	20	0	0
	Erythromycin	111	0	0	20	0	0
	Neomycin	111	0	0	20	0	1
	Oxytetracycline	111	0	0	20	0	0
	Chlortetracycline	111	0	0	20	0	0
	Gentamicin	111	0	0	20	0	0
	Licomycin	111	0	0	20	0	0
	Novobiocin	111	0	0	20	0	0
	Virginiamycin	111	0	0	20	0	0
	Sulfathoxypyridazine	111	0	0			
	Sulfachloropyridazine	111	0	0			
	Sulfadimethoxine	111	0	0			
	Sulfamethazine	111	0	0			
	Sulfamethoxypyridazine	111	0	0			
	Sulfathiazole	111	0	0			
	Sulfaquinoxaline	111	0	0			
	Sulfabromomethazine	111	0	0			
	Sulfadiazine	111	0	1			
	Sulfapyridine	111	0	0			
	OP (Screen)	106	0	0			

YEAR	Monitoring Program				Surveillance Samples		
1987	Compounds	# Analyzed	NV Positive	Violations	# tested	NV Positive	Violations
	Aldrin	337	0	0			
	Benzene Hydrochloride	337	15	0			
	Chlordane	337	4	3			
	Dieldrin	337	17	0			
	DDT and metabolities	337	68	0			
	Endrin	337	0	0			
	Heptachlor	337	30	1			
	Lindane	337	4	0			
	Methoxychlor	337	1	0			
	Toxaphene	337	0	0			
	PCB	337	0	0			
	HCB	337	44	0			
	Mirex	337	0	0			
	Strobane	337	0	0			
	Nonachlor	337	0	0			
	Penicillin	338	0	3	25	0	4
	Streptomycin	338	0	6	25	0	4
	Tetracycline	338	0	0	25	0	0
	Tylosin	338	0	0	25	0	0
	Erythromycin	338	0	0	25	0	0
	Neomycin	338	0	0	25	0	0
	Oxytetracycline	338	0	0	25	0	0
	Chlortetracycline	338	0	0	25	0	1
	Gentamicin	338	0	0	25	0	0
	Licomycin	338	0	0	25	0	0
	Novobiocin	338	0	0	25	0	0
	Virginiamycin	338	0	0	25	0	0
	Sulfathoxypyridazine	134	0	0			
	Sulfachloropyridazine	134	0	0			
	Sulfadimethoxine	134	0	0			
	Sulfamethazine	134	0	0			
	Sulfamethoxypyridazine	134	0	0			
	Sulfathiazole	134	0	0			
	Sulfaquinoxaline	134	0	0			
	Sulfabromomethazine	134	0	0			
	Sulfadiazine	134	0	0			
	Sulfapyridine	134	0	0			
	Arsenic	341	27	0			

YEAR	Monitoring Program				Surveillance Samples		
1988-89	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC screen	300		0			
	Chlorinated OPs	299		0			
	Ivermectin	305		1			
	Penicillin	305		0	552		5
	Streptomycin	305		3	552		1
	Tetracycline	305		0	552		1
	Tylosin	305		0			
	Erythromycin	305		0	552		0
	Neomycin	305		0	552		0
	Oxytetracycline	305		0	552		1
	Chlortetracycline	305		0	552		0
	Gentamicin	305		0	552		0
	Sulfathoxypyridazine	306		0			
	Sulfachloropyridazine	306		0			
	Sulfadimethoxine	306		0			
	Sulfamethazine	306		2			
	Sulfamethoxypyridazine	306		0			
	Sulfathiazole	306		0			
	Sulfaquinoxaline	306		0			
	Sulfabromomethazine	306		0			
	Sulfadiazine	306		0			
	Sulfapyridine	306		0			
	Arsenic	304		1			

YEAR	Monitoring Program				Surveillance Samples		
1990	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC screen	298		0			
	Chlorinated OPs	298		0			
	Ivermectin	310		0			
	Penicillin	313		1	512		14
	Streptomycin	313		17	512		8
	Tetracycline	313		0	512		
	Tylosin	313		0			
	Erythromycin	313		0	512		
	Neomycin	313		0	512		
	Oxytetracycline	313		0	512		
	Chlortetracycline	313		0	512		
	Gentamicin	313		0	512		1
	Sulfathoxypyridazine	313		o			
	Sulfachloropyridazine	313		0			
	Sulfadimethoxine	313		0			
	Sulfamethazine	313		0			
	Sulfamethoxypyridazine	313		0			
	Sulfathiazole	313		0			
	Sulfaquinoxaline	313		0			
	Sulfabromomethazine	313		0			
	Sulfadiazine	313		0			
	Sulfapyridine	313		0			
	Arsenic	310		0			

YEAR	Monitoring Program				Surveillance Samples		
1991	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC screen	106		0			
	Chlorinated OPs	106		0			
	Ivermectin	101		3			
	Penicillin	100		0	708		17
	Streptomycin	100		2	708		17
	Tetracycline	100		0	708		
	Tylosin	100		0			
	Erythromycin	100		0	708		
	Neomycin	100		0	708		
	Oxytetracycline	100		0	708		
	Chlortetracycline	100		0	708		
	Gentamicin	100		0	708		3
	Sulachloropyrazine	106		0			
	Sulfachloropyridazine	106		0			
	Sulfadimethoxine	106		0			
	Sulfamethazine	106		0			
	Sulfamethoxypyridazine	106		0			
	Sulfathiazole	106		0			
	Arsenic	101		0			

YEAR	Monitoring Program				Surveillance Samples		
1992	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC/COP screen	98		1 (coumaphos)			
	Ivermectin	94		2			
	Penicillin	101		0	1008		25
	Streptomycin	101		0	1008		19
	Tetracycline	101		0	1008		0
	Tylosin	101		0			
	Erythromycin	101		0	1008		0
	Neomycin	101		0	1008		0
	Oxytetracycline	101		0	1008		1
	Chlortetracycline	101		0	1008		0
	Gentamicin	101		0	1008		0
	Sulachloropyrazine	103		0			
	Sulfachloropyridazine	103		0			
	Sulfadimethoxine	103		0	1008		1
	Sulfamethazine	103		0	1008		1
	Sulfamethoxypyridazine	103		0			
	Sulfathiazole	103		0			
	Arsenic	94		0			
	Benzimidazoles	99		0			

YEAR	Monitoring Program				Surveillance Samples		
1993	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC/COP screen	425		1 coumaphos	Enforcement		11 coumaphos
				1 dieldrin			
				1 PCB			
	Ivermectin	405		0			
	Penicillin	309		2	725		19
	Streptomycin	309		10			8
	Tetracycline	309		0			0
	Tylosin	309		0			0
	Erythromycin	309		0			0
	Neomycin	309		0			0
	Oxytetracycline	309		0			4
	Chlortetracycline	309		0			0
	Gentamicin	309		0			2
	Sulachloropyrazine	306		0			0
	Sulfachloropyridazine	306		0			0
	Sulfadimethoxine	306		1			6
	Sulfamethazine	306		2			0
	Sulfamethoxypyridazine	306		0			0
	Sulfathiazole	306		0			0
	Arsenic	0					

YEAR	Monitoring Program				Surveillance Samples		
1994	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC/COP screen	217		0			
	Ivermectin						
	Penicillin	0			421		8
	Streptomycin	0			421		4
	Tetracycline	0					0
	Tylosin	0					0
	Erythromycin	0					0
	Neomycin	0					0
	Oxytetracycline	0					0
	Chlortetracycline	0					0
	Gentamicin	0			421		1
	Sulachloropyrazine	0					
	Sulfachloropyridazine	0					
	Sulfadimethoxine	0					
	Sulfamethazine	0					
	Sulfamethoxypyridazine	0					
	Sulfathiazole	0					
	Arsenic	0					

YEAR	Monitoring Program				Surveillance Samples		
1995	Compounds	# Analyzed		Violations	# STOP		Violations
	CHC/COPs screen	507		4 coumaphos	Enforcement		
				1 heptachlor	180 samples		0
	Ivermectin						
	Penicillin	0			318		8
	Streptomycin	0					
	Tetracycline	0					
	Tylosin	0					
	Erythromycin	0					
	Neomycin	0					
	Oxytetracycline	0					
	Chlortetracycline	0					
	Gentamicin	0					
	Sulfonamides	0					

YEAR 1996	Program				Surveillance Samples		
	Compounds	Monitoring	Enforcement	Violative	# STOP	# FAST	Violative
		Analyzed/V	Analyzed/V	Compound	Test/V		Componds
	Antibiotics -			**0**	**306/11**		
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						**1**
	Penicillin						**8**
	Streptomycin						**2**
	Tetracycline						
	Tylosin						
	Sufonamides -						
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	503/1	53/18	Dieldrin-1			
				Coumaphos-18			
	Trace metals	503	53	none			

Total Horse Slaughter in 1997: 82,025 heads

YEAR	Monitoring Program				Surveillance Samples		
1997	Compounds	Monitoring	Enforcement	Violative	# STOP	# FAST	Violations
		Analyzed/V	Analyzed/V	Compounds	Tests/Viol.	Tests/Viol.	Compounds
	Antibiotics -	**386/20**	**0**		**59/1**		
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						1
	Penicillin			5			
	Streptomycin			17			
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -	**234/1**					
	Sulfacloropyridazine						
	Sulfadimethoxine			1			
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	457/5		Dieldrin - 1 Heptachlor - 1 PCB - 2 Phenybutazone - 1			
	Arsenic	87/0					
	Ivermectin	256/1					
	Clenbuterol		1,420				

Total Horse Slaughter in 1998: 68,783 heads

YEAR	Monitoring Program				Surveillance Samples		
1998	Compounds	Monitoring	Enforcement	Violative	# STOP	# FAST	Violations
		Analyzed/V	Analyzed/V	Compounds	Tests/Viol.	Tests/Viol.	Compounds
	Antibiotics -	**442/20**	10-0		70/0		
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						
	Penicillin			**6**			
	Streptomycin			**15**			
	Tetracycline						
	Tylosin						
	Sufonamides -	226/0					
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	467/0					
	Arsenic	91/0					
	Ivermectin	292/0					

Total Horse Slaughter in 1999: 64,036 heads

YEAR	Monitoring Program				Surveillance Samples		
1999	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	**446**			222		
	Bacitracin						
	Chlortetracycline			**2**			
	Erythromycin						
	Flavomycin						
	Gentamicin			**1**			
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline			**1**			
	Penicillin			**8**			**1**
	Streptomycin			**35**			
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -	**285**					
	Sulfacloropyridazine						
	Sulfadimethoxine			**1**			
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	301		**Phenybutazone**			
				1			

YEAR	Monitoring Program				Surveillance Samples		
2000	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	434			552		
	Bacitracin						
	Chlortetracycline			1			
	Erythromycin						
	Flavomycin						
	Gentamicin			1			1
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline			1			
	Penicillin			9			3
	Streptomycin			59			2
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -						
	21 Sulfa compounds			Sulfadimethoxine			
				1			
	CHC/COPs screen	285		**Phenybutazone**			
	21 compound			1			
	Avermectin	285		2			
	Moxidectin	285					

Total Horse Slaughter in 2003: 50,062 heads

YEAR	Monitoring Program				Surveillance Samples		
2003	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	**193**		**0**	**108**	**9**	**0**
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						
	Penicillin						
	Streptomycin						
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -	**199**		**0**			
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	**157**		**0**			
	Avermectin	**149**		**0**			
	Moxidectin	**149**		**0**			

Total Horse Slaughter in 2004: 65,200 heads

YEAR	EXPLORATORY Program				Surveillance Samples		
2004	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	**15**					
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						
	Penicillin			**2**			
	Streptomycin						
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -	**17**					
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	**15**		**Phenybutazone**			
				1			
	Avermectin	**17**					
	Moxidectin						

Total Horse Slaughter in 2005: 93,768 heads

YEAR	EXPLORATORY Program				Surveillance Samples		
2005	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	**8**			**85**	**30**	**0**
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						
	Penicillin			**2**			
	Streptomycin						
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -	**10**					
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	**9**		**Phenybutazone**			
				1			
	Avermectin	**7**					
	Moxidectin						

Total Horse Slaughter in 2006: 104,433 heads

YEAR	Monitoring Program				Surveillance Samples		
2006	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	112		0	75	4	0
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						
	Penicillin						
	Streptomycin						
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -	0					
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	281		PBDE - 1			
	Avermectin	113		0			
	Moxidectin	113		0			

Total Horse Slaughter in 2007: 29,707 heads

YEAR	Monitoring Program				Surveillance Samples		
2007	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	**0**			**7**	**6**	**0**
	Bacitracin						
	Chlortetracycline						
	Erythromycin						
	Flavomycin						
	Gentamicin						
	Hygromycin						
	Neomycin						
	Novobiocin						
	Oxytetracycline						
	Penicillin						
	Streptomycin						
	Tetracycline						
	Tilmicosin						
	Tylosin						
	Sufonamides -						
	Sulfacloropyridazine						
	Sulfadimethoxine						
	Sulfamthazole						
	Sulfadizine						
	CHC/COPs screen	**50**		**0**			
	Avermectin	**54**		**0**			
	Moxidectin	**54**		**0**			

YEAR	Monitoring Program				Surveillance Samples		
2008	Compounds	# Analyzed		Violations	# STOP	# FAST	Violations
	Antibiotics -	**0**			**0**	**0**	
	Sufonamides -	**0**					
	CHC/COPs screen	**0**					
	Avermectin	**0**					
	Moxidectin	**0**					

Appendix 2

COMPOUNDS	IMPLEMENTATION						
	2012	2013	2014				
	Current	Next	Hormones	Tranquilizers	Not - Relevant	Other	Comment
1. Acepromazine		X					Add to MRM
2. Acetazolamide		X					Sulfonamide
3. Acriflavin					X		Topical application
4. Glycosaminoglycan						X	Joint medication
5. Altrenogest			X				Hormonal effect
6. Amikacin	X						
7. Antibiotics	X						
8. Antiseptic					X		Topical application
9. Avermectin	X						
10. Boldenone			X				Hormonal effects
11. Butorphanol				X			Pain med
12. Carbadox	X						
13. Ceftiofur	X						
14. Chloramphenicol	X						
15. Copper					X		Topical application
16. Cupric sulfate					X		Topical application
17. Kerosene					X		Topical application
18. Deslorelin			X				Hormonal effect
19. Dexamethasone	X						
20. Diclofenac sodium				X			Pain med
21. Dormosedan				X			Sedative / analgesic
22. Doxycycline		X					Add to MRM
23. Enrofloxacin	X						
24. Eucalyptus oil					X		Topical application
25. Flunixin	X						
26. Furaltadone	X						
27. Furazolidone	X						
28. Gentamicin	X						
29. Hyaluronate						X	Joint disease
30. Isoflurane					X		Gas anesthetic
31. Levothyroxine			X				Thyroid replacement hormone
32. Luprostiol			X				Hormonal effect
33. Methylandrostenediol			X				Hormonal effect
34. Methylprednisolone	X						Prednisone but not

Appendix 2

COMPOUNDS	IMPLEMENTATION						
	2012	2013	2014				
	Current	Next	Hormones	Tranquilizers	Not - Relevant	Other	Comment
and Prednisone							methylprednisolone at this time
35. Moxidectin	X						
36. 3-dicarboximide		X					Dicarboximides are a class of fungicides including vinclozolin and iprodione, which are in the AMS PDP method on GC. These fungicides rapidly turn into 3,5-dichloroaniline in soil. Need to determine the correct analyte of interest.
37. Neomycin	X						
38. Omeprazole						X	Stomach ulcers
39. Phenylbutazone	X						
40. Prallethrin		X					Pyrethroid insecticide in the AMS PDP method on GC
41. Thyrostats	X						
42. Triamcinolone acetonide					X		Topical application
TOTAL	17	5	6	3	8	3	

NRP 2012	17
During NRP 2013	5
During NRP 2014	9
Not applicable	11