

Base Case - 500 Animals Imported
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	680	780	950
Total Infected w/o Imports	200	38	110	180	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.18	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	27	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	170	14	84	160	250	420
Blood	0.97	0	0	1	1	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	430	320	370	420	480	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	330,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,400,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,700,000	1,900,000	2,300,000
4 To NP MBM - Contamination	0.18	0	0	0	0.0079	1
5 To NP MBM - Mislabeling	4,600	280	1,400	2,600	4,900	14,000
6 Out After Rendering	11,000	2,700	5,000	8,100	16,000	26,000
7 To Prohibited Feed	100,000	64,000	84,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	78,000	44,000	61,000	76,000	92,000	120,000
9 To NP Feed - Contamination	0.17	0	0	0	0.0059	1
10 To NP Feed - Mislabeling	4,300	230	1,300	2,400	4,500	14,000
11 To Blood	59	27	43	57	72	96
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	120	1,100	2,100	3,700	13,000
15 Total Potential to Humans	6,600	3,000	4,300	5,700	7,900	13,000
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	1,300	0	0.019	12	700	6,500
Spinal Cord	470	0	0.0077	3.4	280	2,600
Blood	3	0.00014	0.049	0.84	3.8	14
Distal Ileum	420	0.0023	260	330	590	1,000
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.071	0	0	0	0	0.022
Contaminated Muscle Meat	14	5.3	9.7	13	17	24
AMR	2,900	1,600	2,200	2,700	3,400	4,700
Beef on Bone	1,500	390	810	1,400	2,000	3,200
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	2.4	0	0.016	0.51	1	20

USDA A: Ban on Non-Ambulatory Animals to Human Food
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	680	780	950
Total Infected w/o Imports	200	38	110	180	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.17	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.47
Mode of Infection						
Maternal	27	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	14	85	160	250	410
Blood	0.96	0	0	0	1	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	430	320	370	420	480	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	28	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,300,000	1,500,000	1,700,000	1,900,000	2,200,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,700,000	1,900,000	2,300,000
4 To NP MBM - Contamination	0.17	0	0	0	0.0079	1
5 To NP MBM - Mislabeling	4,600	280	1,400	2,500	4,900	14,000
6 Out After Rendering	11,000	2,700	5,000	8,100	16,000	26,000
7 To Prohibited Feed	100,000	64,000	84,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	78,000	44,000	62,000	76,000	92,000	120,000
9 To NP Feed - Contamination	0.17	0	0	0	0.0079	1
10 To NP Feed - Mislabeling	4,300	230	1,300	2,400	4,500	14,000
11 To Blood	59	28	44	57	72	96
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,700	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,800	120	1,100	2,100	3,800	13,000
15 Total Potential to Humans	6,400	2,900	4,200	5,500	7,600	13,000
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	1,200	0	0.019	9.4	700	6,500
Spinal Cord	450	0	0.0077	3.4	280	2,600
Blood	2.8	0.00017	0.047	0.78	3.6	13
Distal Ileum	420	0.00099	260	330	580	1,000
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.067	0	0	0	0	0.022
Contaminated Muscle Meat	13	5	9.3	13	17	23
AMR	2,800	1,500	2,100	2,600	3,300	4,500
Beef on Bone	1,500	370	770	1,400	2,000	3,100
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	2.3	0	0.016	0.51	1	20

USDA B: 12 Month Comprehensive SRM (Food Only) – 100% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	680	780	950
Total Infected w/o Imports	200	38	110	180	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.17	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	27	17	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	15	85	160	250	420
Blood	0.97	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	430	320	370	420	490	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,300,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,300,000
4 To NP MBM - Contamination	0.18	0	0	0	0.0059	1
5 To NP MBM - Mislabeling	4,600	290	1,400	2,500	4,800	14,000
6 Out After Rendering	11,000	2,700	5,100	8,300	16,000	26,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	79,000	45,000	62,000	76,000	93,000	120,000
9 To NP Feed - Contamination	0.17	0	0	0	0.0079	1
10 To NP Feed - Mislabeling	4,300	230	1,300	2,400	4,500	14,000
11 To Blood	59	28	44	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,700	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	120	1,100	2,100	3,800	13,000
15 Total Potential to Humans	17	6.3	11	16	21	31
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	0	0	0	0	0	0
Spinal Cord	0	0	0	0	0	0
Blood	3	0.00018	0.052	0.83	3.8	14
Distal Ileum	0	0	0	0	0	0
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0	0	0	0	0	0
Contaminated Muscle Meat	14	5.2	9.7	13	17	24
AMR	0	0	0	0	0	0
Beef on Bone	0	0	0	0	0	0
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0	0	0	0	0	0

USDA B: 24 Month Comprehensive SRM (Food Only) – 100% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	690	780	950
Total Infected w/o Imports	200	38	110	190	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.17	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	27	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	15	86	160	250	410
Blood	0.97	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	440	320	370	420	490	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	500,000
From Death on Farm	1,700,000	1,400,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,300,000
4 To NP MBM - Contamination	0.18	0	0	0	0.0079	1
5 To NP MBM - Mislabeling	4,600	300	1,400	2,500	4,900	14,000
6 Out After Rendering	11,000	2,700	5,000	8,200	16,000	26,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	79,000	44,000	62,000	76,000	93,000	120,000
9 To NP Feed - Contamination	0.18	0	0	0	0.0079	1
10 To NP Feed - Mislabeling	4,300	240	1,300	2,400	4,500	14,000
11 To Blood	59	27	44	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	130	1,100	2,100	3,800	13,000
15 Total Potential to Humans	17	6.3	11	16	21	31
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	0.033	0	0	0	0	0
Spinal Cord	0.00077	0	0	0	0	0
Blood	3	0.00021	0.054	0.84	3.8	14
Distal Ileum	0	0	0	0	0	0
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	5E-9	0	0	0	0	0
Contaminated Muscle Meat	14	5.2	9.7	13	17	24
AMR	0.036	0	0	0	0	0.0021
Beef on Bone	0.078	0	0	0	0	0.0037
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0	0	0	0	0	0

USDA B: 30 Month Comprehensive SRM (Food Only) – 100% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	680	780	950
Total Infected w/o Imports	200	38	110	180	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.17	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	27	18	23	27	31	39
Spontaneous	0	0	0	0	0	0
Protein	170	14	85	160	250	420
Blood	0.97	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	430	320	370	420	480	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	330,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,300,000	1,500,000	1,700,000	1,900,000	2,200,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,300,000
4 To NP MBM - Contamination	0.17	0	0	0	0.0055	1
5 To NP MBM - Mislabeling	4,500	290	1,400	2,500	4,700	14,000
6 Out After Rendering	11,000	2,700	5,100	8,100	16,000	26,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	78,000	45,000	62,000	76,000	92,000	120,000
9 To NP Feed - Contamination	0.18	0	0	0	0.008	1
10 To NP Feed - Mislabeling	4,400	230	1,300	2,400	4,500	14,000
11 To Blood	59	27	44	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	120	1,100	2,100	3,700	13,000
15 Total Potential to Humans	20	6.5	12	16	22	34
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	0.45	0	0	0	0	0
Spinal Cord	0.15	0	0	0	0	0
Blood	2.9	0.00019	0.052	0.83	3.7	14
Distal Ileum	0	0	0	0	0	0
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.000014	0	0	0	0	0
Contaminated Muscle Meat	14	5.2	9.7	13	17	24
AMR	1.2	0	0	0.0006	0.0069	0.53
Beef on Bone	1.3	0	0	0.00036	0.0062	0.33
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0	0	0	0	0	0

USDA B: 30 Month Comprehensive SRM (Food Only) – 90% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	680	780	950
Total Infected w/o Imports	200	38	110	180	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.17	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	27	17	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	15	85	160	250	420
Blood	0.95	0	0	0	1	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	440	320	370	420	490	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	46	56
ID50 Sources						
From Slaughter	380,000	280,000	330,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,300,000	1,500,000	1,700,000	1,900,000	2,200,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	1,900,000	2,300,000
4 To NP MBM - Contamination	0.17	0	0	0	0.0055	1
5 To NP MBM - Mislabeling	4,500	300	1,400	2,500	4,700	14,000
6 Out After Rendering	11,000	2,700	5,000	8,100	16,000	26,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	79,000	45,000	62,000	76,000	92,000	120,000
9 To NP Feed - Contamination	0.18	0	0	0	0.011	1
10 To NP Feed - Mislabeling	4,400	230	1,300	2,400	4,500	14,000
11 To Blood	59	27	43	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,700	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	130	1,100	2,100	3,700	13,000
15 Total Potential to Humans	670	49	240	430	730	1,900
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	130	0	0	0	0	75
Spinal Cord	47	0	0	0	0	30
Blood	3	0.00018	0.052	0.83	3.8	14
Distal Ileum	42	0	0	0	0.021	260
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.0066	0	0	0	0	0
Contaminated Muscle Meat	14	5.3	9.7	13	17	24
AMR	290	5.2	91	230	400	720
Beef on Bone	150	0.016	2.8	39	130	900
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0.26	0	0	0	0	0.51

USDA B: 30 Month Comprehensive SRM (Food Only) – 95% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	710	540	610	690	780	950
Total Infected w/o Imports	210	38	110	190	280	450
Total Clinical	220	180	200	220	240	290
Probability Infected > 0 at End	0.18	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	28	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	14	86	160	250	420
Blood	0.96	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	440	320	370	420	490	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	500,000
From Death on Farm	1,700,000	1,400,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,300,000
4 To NP MBM - Contamination	0.18	0	0	0	0.0079	1
5 To NP MBM - Mislabeling	4,600	300	1,400	2,600	4,800	14,000
6 Out After Rendering	11,000	2,700	5,100	8,100	16,000	26,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	79,000	45,000	62,000	76,000	93,000	120,000
9 To NP Feed - Contamination	0.17	0	0	0	0.008	1
10 To NP Feed - Mislabeling	4,300	230	1,300	2,400	4,500	14,000
11 To Blood	59	27	44	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	120	1,100	2,100	3,700	13,000
15 Total Potential to Humans	350	16	58	210	360	1,100
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	66	0	0	0	0	0.87
Spinal Cord	23	0	0	0	0	0.16
Blood	3	0.00017	0.054	0.84	3.8	13
Distal Ileum	21	0	0	0	0	260
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.0046	0	0	0	0	0
Contaminated Muscle Meat	14	5.3	9.7	13	17	24
AMR	150	0.06	6	84	210	440
Beef on Bone	77	0	0.04	2.9	57	420
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0.11	0	0	0	0	0.51

USDA B: 30 Month Comprehensive SRM (Food Only) – 99% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	690	780	950
Total Infected w/o Imports	200	38	110	190	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.18	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	28	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	14	85	160	250	420
Blood	0.96	0	0	0	1	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	440	320	370	420	490	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	27	34	39	46	56
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,300,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,300,000
4 To NP MBM - Contamination	0.18	0	0	0	0.0079	1
5 To NP MBM - Mislabeling	4,500	290	1,400	2,500	4,700	14,000
6 Out After Rendering	11,000	2,700	5,000	8,100	16,000	26,000
7 To Prohibited Feed	110,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	79,000	45,000	62,000	76,000	92,000	120,000
9 To NP Feed - Contamination	0.17	0	0	0	0.0079	1
10 To NP Feed - Mislabeling	4,400	240	1,300	2,400	4,500	14,000
11 To Blood	59	27	44	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,800	120	1,100	2,100	3,800	13,000
15 Total Potential to Humans	83	7.7	14	22	51	270
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	12	0	0	0	0	0
Spinal Cord	4.3	0	0	0	0	0
Blood	2.9	0.00018	0.051	0.81	3.7	14
Distal Ileum	4.4	0	0	0	0	0
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.0011	0	0	0	0	0
Contaminated Muscle Meat	14	5.3	9.7	13	17	24
AMR	30	0	0.0014	0.061	5.4	200
Beef on Bone	16	0	0	0.0027	0.15	63
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0.022	0	0	0	0	0

Combined USDA Scenarios:
A: Ban on Non-Ambulatory Animals to Human Food
B: 30 Month Comprehensive SRM (Food Only) – 100% Compliance
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	700	540	610	680	780	950
Total Infected w/o Imports	200	38	110	180	280	450
Total Clinical	220	180	200	220	240	280
Probability Infected > 0 at End	0.18	0	0	0	0	1
R ₀ Parameter	0.27	0.071	0.18	0.27	0.36	0.48
Mode of Infection						
Maternal	28	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	14	85	160	250	420
Blood	0.97	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	440	320	370	420	490	600
Die on Farm - Render	230	180	200	220	250	300
Die on Farm - No Render	40	28	34	39	45	56
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	490,000
From Death on Farm	1,700,000	1,300,000	1,500,000	1,700,000	1,900,000	2,200,000
Disposition of ID50s						
1 To Prohibited MBM	190,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,300,000
4 To NP MBM - Contamination	0.18	0	0	0	0.0055	1
5 To NP MBM - Mislabeling	4,600	280	1,400	2,500	4,800	14,000
6 Out After Rendering	11,000	2,700	5,100	8,200	16,000	26,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	150,000
8 To NP Feed - Misdirected	79,000	45,000	62,000	76,000	92,000	120,000
9 To NP Feed - Contamination	0.17	0	0	0	0.0079	1
10 To NP Feed - Mislabeling	4,300	240	1,300	2,400	4,500	14,000
11 To Blood	59	28	44	57	72	97
12 Out After Feed Production	180,000	130,000	160,000	180,000	210,000	250,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	3,700	120	1,100	2,100	3,700	13,000
15 Total Potential to Humans	20	6.1	11	15	21	33
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	0.39	0	0	0	0	0
Spinal Cord	0.36	0	0	0	0	0
Blood	2.8	0.00016	0.044	0.74	3.6	13
Distal Ileum	0	0	0	0	0	0
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	8.3E-6	0	0	0	0	0
Contaminated Muscle Meat	13	5	9.2	13	17	23
AMR	1.2	0	0	0.0006	0.0074	0.53
Beef on Bone	1.5	0	0	0.00036	0.0062	0.34
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	0	0	0	0	0	0

Sensitivity 1: Pessimistic - Mislabeling and Contamination
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	720	540	620	700	800	980
Total Infected w/o Imports	220	42	120	200	300	480
Total Clinical	220	180	200	220	240	290
Probability Infected > 0 at End	0.2	0	0	0	0	1
R ₀ Parameter	0.28	0.077	0.19	0.28	0.37	0.49
Mode of Infection						
Maternal	28	18	23	27	32	40
Spontaneous	0	0	0	0	0	0
Protein	190	18	94	170	270	440
Blood	0.97	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	450	320	380	430	500	620
Die on Farm - Render	230	180	200	230	260	310
Die on Farm - No Render	41	28	35	40	46	57
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	430,000	500,000
From Death on Farm	1,700,000	1,400,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	200,000	130,000	160,000	190,000	220,000	270,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,800,000	1,400,000	1,600,000	1,800,000	2,000,000	2,400,000
4 To NP MBM - Contamination	0.34	0	0.0032	0.028	0.13	1.1
5 To NP MBM - Mislabeling	5,300	600	1,900	3,300	6,100	15,000
6 Out After Rendering	11,000	2,800	5,200	8,600	16,000	27,000
7 To Prohibited Feed	100,000	64,000	85,000	100,000	120,000	160,000
8 To NP Feed - Misdirected	79,000	45,000	62,000	77,000	93,000	120,000
9 To NP Feed - Contamination	1.5	0.0026	0.1	0.94	1.2	10
10 To NP Feed - Mislabeling	5,500	440	1,900	3,300	6,800	15,000
11 To Blood	59	28	44	57	73	98
12 Out After Feed Production	190,000	130,000	160,000	180,000	210,000	260,000
13 Misfed to Cattle	1,600	2.6	100	1,000	1,400	10,000
14 Total to Cattle	4,100	150	1,200	2,200	4,300	14,000
15 Total Potential to Humans	6,700	3,000	4,400	5,800	8,000	13,000
16 Eliminated by AM Inspector	110,000	60,000	80,000	110,000	130,000	170,000
Human Exposure						
Brain	1,300	0	0.019	12	710	6,500
Spinal Cord	480	0	0.0077	4.7	280	2,600
Blood	2.9	0.00018	0.052	0.83	3.7	14
Distal Ileum	430	0.0046	260	330	590	1,000
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.07	0	0	0	0	0.022
Contaminated Muscle Meat	14	5.3	9.8	13	18	24
AMR	2,900	1,600	2,200	2,800	3,400	4,700
Beef on Bone	1,500	390	820	1,400	2,100	3,200
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	2.5	0	0.016	0.51	1	20

Sensitivity 2: Pessimistic - Misfeeding
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	2,600	1,300	1,900	2,400	3,100	4,200
Total Infected w/o Imports	2,100	790	1,400	1,900	2,600	3,700
Total Clinical	530	300	410	510	620	810
Probability Infected > 0 at End	0.99	1	1	1	1	1
R ₀ Parameter	0.83	0.62	0.77	0.84	0.9	0.98
Mode of Infection						
Maternal	62	35	48	60	74	97
Spontaneous	0	0	0	0	0	0
Protein	2,000	750	1,300	1,900	2,500	3,600
Blood	1.8	0	0	1	3	5
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	1,700	850	1,200	1,600	2,000	2,700
Die on Farm - Render	620	340	480	590	730	960
Die on Farm - No Render	110	59	84	110	130	170
ID50 Sources						
From Slaughter	800,000	490,000	650,000	780,000	930,000	1,200,000
From Death on Farm	4,100,000	2,400,000	3,200,000	4,000,000	4,900,000	6,400,000
Disposition of ID50s						
1 To Prohibited MBM	460,000	250,000	350,000	440,000	550,000	730,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	4,200,000	2,500,000	3,300,000	4,100,000	5,000,000	6,500,000
4 To NP MBM - Contamination	0.41	0	0.00013	0.026	0.13	1.1
5 To NP MBM - Mislabeling	11,000	2,000	4,600	7,800	16,000	27,000
6 Out After Rendering	26,000	8,000	16,000	24,000	34,000	52,000
7 To Prohibited Feed	250,000	130,000	180,000	240,000	300,000	400,000
8 To NP Feed - Misdirected	190,000	97,000	140,000	180,000	220,000	300,000
9 To NP Feed - Contamination	0.44	0	0.0002	0.026	0.13	1.1
10 To NP Feed - Mislabeling	10,000	1,800	4,200	7,300	15,000	26,000
11 To Blood	110	55	82	100	130	180
12 Out After Feed Production	400,000	230,000	310,000	390,000	480,000	620,000
13 Misfed to Cattle	36,000	8,200	20,000	32,000	48,000	78,000
14 Total to Cattle	41,000	9,800	23,000	37,000	55,000	87,000
15 Total Potential to Humans	13,000	6,000	9,000	12,000	16,000	23,000
16 Eliminated by AM Inspector	210,000	110,000	160,000	200,000	250,000	330,000
Human Exposure						
Brain	2,300	0	8	330	3,500	9,500
Spinal Cord	870	0	2.3	130	1,300	3,400
Blood	5.4	0.017	0.66	3	8.1	18
Distal Ileum	1,500	310	870	1,400	2,000	3,000
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.13	0	0	0	0	0.43
Contaminated Muscle Meat	26	12	19	25	31	43
AMR	5,300	2,900	4,100	5,100	6,400	8,500
Beef on Bone	2,800	920	1,800	2,700	3,600	5,300
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	5.4	0.25	1.1	2.1	4.4	23

Sensitivity 5: Less Effective AM Inspection
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	710	540	620	690	790	970
Total Infected w/o Imports	210	40	120	190	290	470
Total Clinical	220	180	200	220	240	290
Probability Infected > 0 at End	0.19	0	0	0	0	1
R ₀ Parameter	0.28	0.074	0.19	0.28	0.37	0.49
Mode of Infection						
Maternal	28	18	23	27	32	39
Spontaneous	0	0	0	0	0	0
Protein	180	16	90	160	260	430
Blood	1.4	0	0	1	2	5
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	440	320	380	430	490	610
Die on Farm - Render	230	180	200	220	250	310
Die on Farm - No Render	41	28	34	40	46	57
ID50 Sources						
From Slaughter	380,000	280,000	340,000	380,000	420,000	500,000
From Death on Farm	1,700,000	1,400,000	1,500,000	1,700,000	1,900,000	2,300,000
Disposition of ID50s						
1 To Prohibited MBM	210,000	140,000	170,000	200,000	230,000	290,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	1,900,000	1,500,000	1,700,000	1,900,000	2,100,000	2,500,000
4 To NP MBM - Contamination	0.19	0	0	0	0.011	1
5 To NP MBM - Mislabeling	4,900	340	1,500	2,800	5,400	14,000
6 Out After Rendering	12,000	2,900	5,500	9,000	16,000	27,000
7 To Prohibited Feed	110,000	69,000	90,000	110,000	130,000	160,000
8 To NP Feed - Misdirected	83,000	48,000	66,000	81,000	98,000	130,000
9 To NP Feed - Contamination	0.19	0	0	0	0.017	1
10 To NP Feed - Mislabeling	4,700	260	1,400	2,500	5,100	14,000
11 To Blood	87	47	68	85	100	140
12 Out After Feed Production	200,000	130,000	170,000	190,000	220,000	270,000
13 Misfed to Cattle	1,700	2.6	110	1,000	1,500	10,000
14 Total to Cattle	4,000	140	1,100	2,200	4,200	14,000
15 Total Potential to Humans	9,700	4,800	6,700	8,600	12,000	17,000
16 Eliminated by AM Inspector	0	0	0	0	0	0
Human Exposure						
Brain	1,900	0	0.045	36	3,100	7,100
Spinal Cord	700	0	0.018	11	900	2,800
Blood	4.4	0.00042	0.14	1.8	6.4	17
Distal Ileum	460	0.0049	260	380	620	1,100
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.1	0	0	0	0	0.097
Contaminated Muscle Meat	21	9.4	15	20	25	34
AMR	4,300	2,600	3,400	4,100	5,000	6,500
Beef on Bone	2,300	690	1,400	2,100	3,000	4,400
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	3.5	0	0.016	0.52	1.5	21

Sensitivity 6: Longer Incubation Period
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	550	510	520	530	580	670
Total Infected w/o Imports	52	7	15	27	75	170
Total Clinical	32	19	24	29	36	59
Probability Infected > 0 at End	0.15	0	0	0	0	1
R ₀ Parameter	0.086	0.014	0.029	0.051	0.13	0.25
Mode of Infection						
Maternal	6.5	2	4	6	8	12
Spontaneous	0	0	0	0	0	0
Protein	45	2	8	21	68	160
Blood	0.32	0	0	0	0	2
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	430	400	410	420	450	510
Die on Farm - Render	100	79	88	96	110	130
Die on Farm - No Render	18	10	14	17	20	26
ID50 Sources						
From Slaughter	160,000	110,000	130,000	150,000	180,000	210,000
From Death on Farm	260,000	140,000	190,000	220,000	290,000	480,000
Disposition of ID50s						
1 To Prohibited MBM	38,000	17,000	26,000	34,000	45,000	69,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	350,000	230,000	280,000	320,000	380,000	570,000
4 To NP MBM - Contamination	0.031	0	0	0	0.0008	0.028
5 To NP MBM - Mislabeling	870	35	110	290	1,100	2,400
6 Out After Rendering	2,200	210	530	1,300	2,200	11,000
7 To Prohibited Feed	20,000	7,900	12,000	18,000	25,000	41,000
8 To NP Feed - Misdirected	15,000	5,400	8,100	13,000	20,000	32,000
9 To NP Feed - Contamination	0.032	0	0	0	0.0008	0.034
10 To NP Feed - Mislabeling	830	32	91	260	1,000	2,300
11 To Blood	20	4.6	11	18	26	41
12 Out After Feed Production	36,000	16,000	24,000	32,000	43,000	65,000
13 Misfed to Cattle	310	0.28	14	40	140	1,100
14 Total to Cattle	740	25	66	160	540	2,200
15 Total Potential to Humans	2,600	890	1,500	2,100	3,000	6,300
16 Eliminated by AM Inspector	24,000	0	10,000	20,000	30,000	50,000
Human Exposure						
Brain	440	0	0	0.24	36	3,100
Spinal Cord	160	0	0	0.079	9.9	1,200
Blood	1	0	0.0012	0.032	0.56	6.1
Distal Ileum	470	0.026	260	510	770	1,000
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.024	0	0	0	0	0.00054
Contaminated Muscle Meat	4.7	0.53	2.2	4.2	6.6	11
AMR	980	350	630	890	1,200	2,000
Beef on Bone	520	44	170	330	760	1,500
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	1.2	0	0.016	0.51	1	3.7

Sensitivity 9: High Poultry Recycling Rate (5%)
50,000 Simulation Runs

Label	Mean	5th	25th	50th	75th	95th
Epidemic Statistics						
Total Infected	920	620	750	880	1,000	1,300
Total Infected w/o Imports	420	120	250	380	550	850
Total Clinical	260	190	220	250	290	360
Probability Infected > 0 at End	0.49	0	0	0	1	1
R ₀ Parameter	0.43	0.19	0.33	0.43	0.53	0.64
Mode of Infection						
Maternal	32	20	26	31	37	47
Spontaneous	0	0	0	0	0	0
Protein	380	89	220	350	510	800
Blood	1.1	0	0	1	2	4
Exogenous	0	0	0	0	0	0
Mode of Death						
Slaughter	580	380	470	560	670	870
Die on Farm - Render	280	200	230	270	320	400
Die on Farm - No Render	49	32	40	48	57	72
ID50 Sources						
From Slaughter	440,000	310,000	380,000	430,000	490,000	590,000
From Death on Farm	2,100,000	1,500,000	1,700,000	2,000,000	2,300,000	2,900,000
Disposition of ID50s						
1 To Prohibited MBM	230,000	150,000	190,000	220,000	260,000	340,000
2 Eliminated by SRM ban	0	0	0	0	0	0
3 Eliminated by Rendering	2,100,000	1,500,000	1,800,000	2,100,000	2,400,000	2,900,000
4 To NP MBM - Contamination	0.21	0	0	9.3E-7	0.026	1
5 To NP MBM - Mislabeling	5,400	450	1,800	3,300	6,300	15,000
6 Out After Rendering	13,000	3,400	6,200	11,000	18,000	29,000
7 To Prohibited Feed	120,000	74,000	99,000	120,000	140,000	190,000
8 To NP Feed - Misdirected	93,000	51,000	72,000	89,000	110,000	150,000
9 To NP Feed - Contamination	0.21	0	0	3E-6	0.026	1
10 To NP Feed - Mislabeling	5,200	360	1,600	3,100	5,900	15,000
11 To Blood	66	31	49	64	80	110
12 Out After Feed Production	210,000	140,000	180,000	210,000	250,000	310,000
13 Misfed to Cattle	1,900	6.4	130	1,000	2,000	11,000
14 Total to Cattle	8,100	790	2,600	4,900	13,000	24,000
15 Total Potential to Humans	7,500	3,500	5,000	6,600	9,000	14,000
16 Eliminated by AM Inspector	120,000	60,000	90,000	120,000	150,000	190,000
Human Exposure						
Brain	1,400	0	0.096	19	1,500	6,600
Spinal Cord	530	0	0.038	8.4	410	2,600
Blood	3.3	0.00053	0.088	1.1	4.4	14
Distal Ileum	550	5.6	260	520	780	1,300
Contaminated Organ Meat	0	0	0	0	0	0
Eyes	0.079	0	0	0	0	0.046
Contaminated Muscle Meat	15	6.1	11	15	19	27
AMR	3,200	1,800	2,500	3,100	3,800	5,200
Beef on Bone	1,700	460	960	1,600	2,300	3,500
Trigeminal Ganglia	0	0	0	0	0	0
Tonsils	2.9	0	0.11	0.54	1.5	21