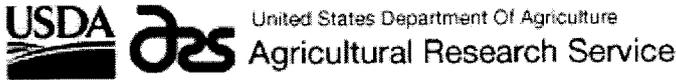


REF. 5



South Atlantic Athens, GA Richard B. Russell Rsch. Ctr. Bacterial Epidemiology and Antimicrobial Resistance

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## Home

### National Antimicrobial Resistance Monitoring System- Veterinary Isolates

- 1 - Overview
- 2 - Sampling and Testing Methods
- 3 - Antimicrobials tested: concentration ranges and breakpoints
- 4 - NARMS Data

#### NARMS Data

There are different ways in which the NARMS Veterinary Isolates data can be retrieved:

#### I. Annual Reports

Our 2005 Annual Report is the first to contain summary data for all organisms tested including percent resistance trends and resistance patterns by year and major animal species, as well as MIC distributions for 2005.

The 2005 Annual Report is available here:

**[New! - NARMS Veterinary Isolates Final Report 2005](#)**

#### II. [Summary Tables and Reports](#)

The summary tables and reports listed below facilitate quick access to individual organism data summarized by major animal sources, clinical status and years.

#### III. [Interactive Data Query Page](#)

Currently a work in progress, the NARMS Veterinary Isolates Interactive Data Query Page is a tool that will facilitate data retrieval and visualization by organism. As a pilot project, only data for isolates collected from food animals at slaughter

- o NARMS Latest Updates
- o NARMS Veterinary Isolates Final Report 2005- Now available
- o Interactive Data Query: NARMS Veterinary Isolates - Coming Soon!

resistance trends and MIC distributions, later expanding to incorporate further data analysis options.

## ***Salmonella***

### **ANNUAL REPORTS**

**1997**

**1998**

**1999**

**2000**

**2001**

**2002**

**2003**

**2004**

### **PERCENT RESISTANCE SUMMARY TABLES**

**(1997-2006)**

- **Cattle Diagnostic**
- **Cattle Slaughter**
  
- **Chicken Diagnostic**
- **Chicken Slaughter**
  
- **Swine Diagnostic**
- **Swine Slaughter**
  
- **Turkey Diagnostic**
- **Turkey Slaughter**
  
- **Dairy Cattle Diagnostic**

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## ***Campylobacter***

### **MIC DISTRIBUTION TABLES**

1998 1999

2000

2001

2002

2003

2004

2005 2006 2007

### **Percent Resistance Summary Table 1998-2007**

---

## ***Escherichia Coli***

### **PERCENT RESISTANCE TABLES**

2000

2001

2002

2003

2004

### **Percent Resistance Summary Table 2000-200**

6

## *Enterococci*

### Percent Resistance Summary Table 2004-2006

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**National Antimicrobial Resistance Monitoring System Animal Isolates**  
**Percent Resistance Cattle Slaughter<sup>a</sup> Isolates**

<b>Antimicrobial</b>	<b>1997</b> n=24	<b>1998</b> n=284	<b>1999</b> n=1610	<b>2000</b> n=1388	<b>2001</b> n=893	<b>2002</b> n=1008	<b>2003</b> n=670	<b>2004</b> n=607	<b>2005</b> n=329	<b>2006</b> n=389
Amikacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amoxicillin/Clavulanic Acid	8.3	2.5	3.9	9.9	11.8	17.7	21.0	13.5	21.0	18.5
Ampicillin	12.5	9.2	12.5	18.7	17.9	23.9	28.1	19.3	26.7	22.4
Apramycin	0.0	0.0	0.2	0.2	0.1	NT	NT	NT	NT	NT
Cefoxitin	NT	NT	NT	9.1	11.1	15.9	17.8	13.2	19.8	17.7
Ceftiofur	0.0	2.1	4.2	9.8	11.4	17.4	21.0	13.3	21.6	18.8
Ceftriaxone	0.0	0.0	0.1	0.1	0.1	0.2	0.1	1.3	2.1	1.0
Cephalothin	0.0	2.1	4.7	9.9	11.6	17.7	21.2	NT	NT	NT
Chloramphenicol	4.2	5.6	8.5	15.1	16.5	20.6	25.1	17.6	21.9	19.8
Ciprofloxacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gentamicin	0.0	1.8	1.6	2.1	2.1	2.6	2.7	1.8	2.4	3.9
Imipenem	NT	NT	NT	NT	0.0	NT	NT	NT	NT	NT
Kanamycin	8.3	9.5	7.1	6.6	6.9	10.1	13.7	8.9	13.1	9.5
Nalidixic Acid	0.0	0.4	0.1	0.4	0.4	0.4	0.4	2.0	1.5	0.5
Streptomycin	12.5	16.2	15.4	21.3	20.3	25.9	28.7	20.9	24.3	23.7
Sulfamethoxazole (Sulfizoxazole in 2004)	20.8	15.5	15.0	19.9	19.7	22.3	25.1	22.7	27.4	24.2
Tetracycline	25.0	24.3	20.9	25.8	26.3	32.0	36.9	31.8	34.0	30.3
Ticarcillin	12.5	8.5	NT	NT	NT	NT	NT	NT	NT	NT
Trimethoprim/ Sulfamethoxazole	4.2	2.5	2.4	2.2	2.6	2.5	3.3	1.5	4.9	4.6

<sup>a</sup> Isolates obtained from slaughter processing plants (carcass swabs & ground product).

**National Antimicrobial Resistance Monitoring System Animal Isolates**

*Percent Resistance Swine Slaughter<sup>a</sup> Isolates*

<b>Antimicrobial</b>	<b>1997 n=111</b>	<b>1998 n=793</b>	<b>1999 n=876</b>	<b>2000 n=451</b>	<b>2001 n=418</b>	<b>2002 n=379</b>	<b>2003 n=211</b>	<b>2004 n=308</b>	<b>2005 n=301</b>	<b>2006 n=304</b>
Amikacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amoxicillin/Clavulanic Acid	0.0	0.4	1.0	1.8	2.6	3.7	3.8	1.9	4.3	2.3
Ampicillin	16.2	12.9	10.8	18.8	11.7	13.7	12.8	16.2	13.6	11.5
Apramycin	2.7	1.4	1.8	0.4	0.7	NT	NT	NT	NT	NT
Cefoxitin	NT	NT	NT	1.3	2.2	2.9	4.3	1.9	3.7	2.0
Ceftiofur	0.0	0.1	1.9	1.3	2.2	3.2	4.3	1.9	3.7	2.0
Ceftriaxone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cephalothin	0.0	0.1	0.8	2.4	2.2	3.2	3.8	NT	NT	NT
Chloramphenicol	11.7	8.4	8.0	12.4	7.7	10.0	8.5	12.7	10.6	7.9
Ciprofloxacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gentamicin	0.9	0.8	1.1	1.3	1.4	0.8	0.5	1.3	2.7	2.0
Imipenem	NT	NT	NT	NT	0.0	NT	NT	NT	NT	NT
Kanamycin	11.7	7.2	6.7	9.3	6.9	4.2	5.7	3.9	5.0	8.6
Nalidixic Acid	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.3	0.0
Streptomycin	27.9	29.4	29.3	39.2	35.6	40.1	30.8	36.4	36.5	26.3
Sulfamethoxazole (Sulfizoxazole in 2004)	34.2	29.0	30.7	35.7	34.9	34.6	25.1	37.0	32.9	26.6
Tetracycline	52.3	47.5	48.4	54.3	53.1	57.8	43.1	58.8	54.8	62.8
Ticarcillin	16.2	12.9	NT							
Trimethoprim/ Sulfamethoxazole	1.8	0.3	1.1	0.9	0.0	1.6	2.4	1.6	2.3	2.0

<sup>a</sup> Isolates obtained from slaughter processing plants (carcass swabs & ground product).

**National Antimicrobial Resistance Monitoring System Animal Isolates**  
*Percent Resistance Chicken Slaughter<sup>a</sup> Isolates*

<b>Antimicrobial</b>	<b>1997 n=214</b>	<b>1998 n=561</b>	<b>1999 n=1438</b>	<b>2000 n=1173</b>	<b>2001 n=1307</b>	<b>2002 n=1500</b>	<b>2003 n=1158</b>	<b>2004 n=1280</b>	<b>2005 n=1989</b>	<b>2006 n=1380</b>
Amikacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amoxicillin/Clavulanic Acid	0.5	2.0	4.9	7.3	4.5	10.2	9.7	12.4	12.1	12.9
Ampicillin	11.7	13.0	12.4	13.0	9.4	14.3	13.7	14.5	14.0	14.9
Apramycin	0.0	0.2	0.1	0.7	0.6	NT	NT	NT	NT	NT
Cefoxitin	NT	NT	NT	7.2	4.1	8.7	8.2	12.4	12.0	12.8
Ceftiofur	0.5	2.0	5.2	7.6	4.1	10.2	9.8	12.4	12.2	12.8
Ceftriaxone	0.0	0.5	0.0	0.1	0.0	0.3	0.1	0.5	0.3	0.1
Cephalothin	1.4	4.4	5.8	7.8	4.7	10.5	10.4	NT	NT	NT
Chloramphenicol	2.3	2.8	1.8	4.6	2.5	2.4	2.1	1.3	1.8	1.7
Ciprofloxacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gentamicin	17.8	15.5	10.4	14.9	7.9	5.5	6.3	4.9	4.3	5.7
Imipenem	NT	NT	NT	NT	0.0	NT	NT	NT	NT	NT
Kanamycin	2.3	3.2	1.2	4.0	2.4	2.0	2.8	2.7	2.5	3.6
Nalidixic Acid	0.0	0.2	0.2	0.5	0.0	0.8	0.4	0.5	0.3	0.1
Streptomycin	24.3	27.8	27.5	28.6	21.0	22.9	19.6	22.2	23.3	21.2
Sulfamethoxazole (Sulfizoxazole in 2004)	24.8	23.8	15.9	18.4	11.8	8.9	10.3	11.9	8.5	10.7
Tetracycline	20.6	20.5	25.0	26.3	21.9	24.9	26.2	27.4	28.3	31.8
Ticarcillin	11.7	11.7	NT							
Trimethoprim/ Sulfamethoxazole	0.5	1.4	1.1	0.4	0.5	0.8	0.3	0.2	0.2	0.1

<sup>a</sup> Isolates obtained from slaughter processing plants (carcass swabs & ground product).

**National Antimicrobial Resistance Monitoring System Animal Isolates**

*Percent Resistance Turkey Slaughter<sup>a</sup> Isolates*

<b>Antimicrobial (Number of Isolates)</b>	<b>1997 n=107</b>	<b>1998 n=240</b>	<b>1999 n=713</b>	<b>2000 n=518</b>	<b>2001 n=550</b>	<b>2002 n=244</b>	<b>2003 n=262</b>	<b>2004 n=236</b>	<b>2005 n=227</b>	<b>2006 n=304</b>
Amikacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amoxicillin/Clavulanic Acid	4.7	0.4	4.3	3.5	6.9	3.7	1.5	4.7	3.5	5.6
Ampicillin	12.1	10.4	17.7	16.2	19.5	18.0	18.7	22.0	22.9	25.3
Apramycin	0.9	0.8	0.6	0.6	0.4	NT	NT	NT	NT	NT
Cefoxitin	NT	NT	NT	3.3	4.5	2.5	1.1	5.1	3.5	5.3
Ceftiofur	3.7	0.4	4.6	3.3	5.1	3.3	1.5	4.7	3.5	5.3
Ceftriaxone	0.0	0.0	0.8	0.4	0.2	0.0	0.4	0.4	0.9	0.0
Cephalothin	5.6	5.0	10.5	8.3	13.1	9.8	11.1	NT	NT	NT
Chloramphenicol	3.7	0.8	4.1	4.1	3.8	5.3	4.2	4.7	4.8	3.9
Ciprofloxacin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gentamicin	20.6	18.3	17.5	16.2	20.9	19.3	21.0	25.4	22.9	16.4
Imipenem	NT	NT	NT	NT	0.0	NT	NT	NT	NT	NT
Kanamycin	24.3	17.1	21.5	21.4	22.9	24.2	16.0	14.4	19.8	10.5
Nalidixic Acid	4.7	2.1	5.3	5.4	5.1	5.3	3.8	2.1	2.2	0.7
Streptomycin	34.6	40.8	43.6	41.9	46.7	37.7	29.4	33.9	40.1	28.9
Sulfamethoxazole (Sulfizoxazole in 2004)	37.4	32.1	36.0	25.1	38.0	30.3	28.2	36.4	37.0	27.3
Tetracycline	52.3	45.8	52.9	56.2	54.9	54.5	58.8	48.3	54.6	61.8
Ticarcillin	12.1	10.8	NT							
Trimethoprim/ Sulfamethoxazole	3.7	2.5	4.2	1.5	2.5	2.5	2.3	0.8	1.8	1.0

<sup>a</sup> Isolates obtained from slaughter processing plants (carcass swabs & ground product).