



The Poultry Informed Professional

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Antibiotic Use in Animals

By Senior Technical Services Veterinarian Poultry Business Team Pfizer Animal Health

Science vs Politics:

Defending 5 Decades of Safe and Effective Use

Though scientific evidence continues to reaffirm the safety and efficacy of antibiotics in animals, fear and politics have combined to forbid the use of important antibiotics in some regions.

Producers and veterinarians must understand the scientific basis for safe antibiotic usage, and remain informed about potential political threats to drug availability, threats based on fear and speculation rather than science and data.

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E-Mail Notice

We are currently organizing our system to enable us to e-mail the Poultry Informed Professional newsletter. If you would like to receive your newsletter via e-mail, please fax your name and e-mail address to Sue Clanton at (706) 542-5630.

**Broiler Performance Data (Region)
 Live Production Cost**

	SW	Midwest	Southeast	Mid-Atlantic	S-Central
Feed cost/ton w/o color (\$)	122.11	115.95	129.36	129.79	127.51
Feed cost/lb meat (¢)	11.66	11.36	12.51	13.10	12.53
Days to 4.6 lbs	45	43	44	44	44
Med. cost/ton (¢)	2.98	2.16	3.38	3.25	2.84
Chick cost/lb (¢)	3.99	3.17	3.87	3.60	3.53
Vac-Med cost/lb (¢)	0.08	0.03	0.14	0.12	0.12
WB & 1/2 parts condemn. cost/lb	0.25	0.21	0.28	0.28	0.32
% mortality	4.17	4.80	4.97	5.62	5.40
Sq. Ft. @ placement	0.80	0.76	0.80	0.78	0.85
Lbs./Sq. Ft.	5.92	7.09	6.30	6.83	6.53
Down time (days)	11	8	10	9	10

Data for week ending 6/19/99

Antibiotic Use in Animals

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Essential Tools for Controlling Disease

- Used safely and effectively for more than 50 years to treat and control disease in animals.
- Reduce suffering and reduce spread of diseases
- Not all are effective all the time. Resistance in bacterial populations is a natural biological selection process that has been recognized for decades
 - Some bacteria are naturally not susceptible (i.e., penicillin does not affect *Salmonella spp*)
 - Some bacteria become resistant due to genetic changes
 - Overuse or misuse of antibiotics, whether in humans or animals can increase bacterial resistance
- Should always be used prudently, according to label directions

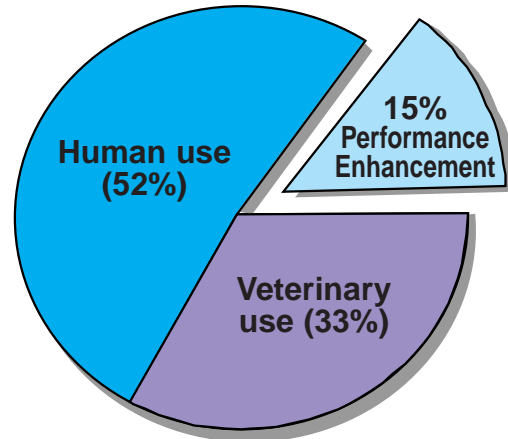
Essential Tools for Performance Enhancement

- Low doses of antibiotics (i.e., only a few grams per ton of feed) improve production efficiency of food animals (meat, milk, eggs)
- The idea that the use of antibiotics for performance enhancement might threaten human health by increasing bacterial resistance has existed for a long time. Yet despite debate and study for decades, no significant risk to humans has been documented
- Antibiotic use in animals is one of the key tools that has helped producers achieve remarkable levels of efficiency and generate economic and environmental benefits
- Still, some countries have recently banned the use of important antibiotics for performance enhancement in animals, or want to establish bans

Animal Performance

- In Europe, use of antibiotics for therapy of sick animals accounts for 33% of total antibiotic usage
- Performance enhancement accounts for only 15% of total antibiotic usage

Antibiotic Usage in Europe
(tons of active ingredient at 100% purity)



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Broiler Performance Data (Company)
Live Production Cost

	Average Co.	Top 25%	Top 5 Cos.
Feed cost/ton w/o color (\$)	126.87	121.51	114.75
Feed cost/lb meat (¢)	12.35	11.42	10.98
Days to 4.6 lbs	44	45	44
Med. cost/ton (¢)	3.04	1.75	1.67
Chick cost/lb (¢)	3.80	3.54	3.15
Vac-Med cost/lb (¢)	0.11	0.04	0.04
WB & 1/2 parts condemn. cost/lb	0.28	0.17	0.13
% mortality	5.04	4.08	4.68
Sq. Ft. @ placement	0.80	0.78	0.77
Lbs./Sq. Ft.	6.36	6.29	7.05
Down time (days)	10	10	10

Data for week ending 6/19/99

Broiler Whole Bird Condemnation (Region)

	SW	Mid-West	S. East	Mid-Atlantic	S. Central
% Septox	0.352	0.392	0.188	0.345	0.251
% Airsac	0.137	0.061	0.368	0.217	0.397
% I.P.	0.058	0.047	0.175	0.158	0.182
% Leukosis	0.008	0.004	0.035	0.052	0.004
% Bruise	0.009	0.007	0.014	0.011	0.011
% Other	0.023	0.015	0.041	0.015	0.019
% Total	0.586	0.525	0.821	0.797	0.864
% 1/2 parts condemnations	0.424	0.332	0.298	0.337	0.430

Data for week ending 6/19/99

Benefits of Performance Enhancement Antibiotics

- Help animals benefit fully from feed consumed
- Help animals develop to full genetic potential
- Conserve land/resources used for grain production
- Save million of tons of raw feed/year
- Help maintain healthy digestive system
- Reduce disease; only healthy animals enter food chain
- Reduce production costs, and meat costs for consumers
- Maintain production yields with fewer livestock
- Decrease animal wastes/pollution and reduce water consumption
- Avoid use of other environmentally unsound compounds (i.e., zinc oxide)
- Undergo extensive, stringent regulatory review of efficacy and safety

The POLITICS of Antibiotic Use in Animals

The Sweden Experiment

- In 1986, Sweden completely banned the use of antibiotics for growth-promoting indications
- Result: No marked improvement in public health, but higher costs for everyone
 - Meat production costs rose
 - Meat imports soared
 - Consumers paid more for meat than other European Union (EU) countries
 - Total overall antibiotic usage actually increased (i.e., increased disease resulted in more overall antibiotic use)
 - Replacement feed additives (e.g., zinc oxide) used at high rates, with resulting environmental concerns (heavy-metal contamination)
- In 1998, as Sweden joins the EU, they must comply with EU laws or convince the EU to adopt Swedish policies such as those on use of growth promoters



Economic Impact of Banning Performance Enhancement Antibiotics (7EU states)

Segment	Cost (ECU)
Beef	615,500,000
Veal	172,500,000
Swine	1,065,700,000
Poultry	170,200,000
Eggs	26,700,000
Total	2,050,600,000

(42% borne by consumers, 58% by producers)



The Avoparcin Experience

- Enterococci bacterial infections in humans are often treated with vancomycin if other treatments prove ineffective
- Vancomycin is an antibiotic of the glycopeptide chemical class
- Avoparcin is another glycopeptide antibiotic, once widely used as a growth promoter in Europe
- Concerns raised fears of possible avoparcin cross-resistance with vancomycin, prompting European countries in 1997 to invoke the precautionary principle and ban the use of avoparcin for performance enhancement in animals despite EU experts who found *no scientific evidence* to support such a ban
- Fact: Vancomycin resistance is *much more prevalent* in US than in Europe, even though avoparcin was *never* used in animals in the US and was *broadly* used as a growth promoter in Europe
- Comprehensive surveillance study conducted in collaboration with industry and the EU is initiated. Data from this study would be used for decision-making regarding the future use of growth promoters. Target completion date, 1st-quarter 2000

Now, the Denmark Mandate

- ❑ In January 1998, Denmark banned the use of virginiamycin (Stafac, Pfizer Inc) for performance enhancement in animals
 - *Virginiamycin is an antibiotic of the streptogramin chemical class*
- ❑ Reports issued by Denmark's National Veterinary Laboratory suggested:
 - *Virginiamycin use may select for resistant bacteria in pigs and chickens*
 - *Virginiamycin cross-resistance may affect future efficacy of certain soluble human streptogramin antibiotics, such as quinupristin/dalfopristin (Synercid®)*
- ❑ Through human streptogramin drugs are not used in Denmark, the government believed preventive action should be taken now in case they are needed in the future
- ❑ The European Commission, a regulatory agency, began process to consider extending the Danish ban to all EU countries



The Science of Antibiotic Use in Animals

- ❑ A rigorous, exhaustive review of virginiamycin safety was conducted by Pfizer
- ❑ Independent experts were consulted in Europe and US for review of safety data and Danish reports
- ❑ Conclusions: no evidence linking virginiamycin to human resistance, and no evidence to merit a ban of virginiamycin

The European SCAN report

- ❑ The European Commission appointed its own independent advisory committee to evaluate the scientific validity of the Denmark reports
 - *"Scientific Committee for Animal Nutrition" (SCAN)*
 - *Panel of expert scientists, including professors of medical microbiology, epidemiology, and pharmacology, etc.*
 - *Committee reviewed and responded in scientific detail to Danish reports*
- ❑ SCAN conclusions:
 - *No new evidence of virginiamycin resistance transfer to humans*
 - *No justification for the immediate virginiamycin ban imposed by Denmark*
 - *Accurate risk assessment requires data documenting resistance transfer from animals*
 - *Any possible future risk is far away, allowing ample time for collection of reliable data*
 - *In US and France, where streptogramins are used in both humans and animals (for over 30 years), use of virginiamycin as a growth promoter has not compromised efficacy of human streptogramin antibiotics (i.e., quinupristin/dalfopristin)*

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Antibiotic Use in Animals

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The Future of Antibiotic Use in Animals

Scientific Conclusions Ignored

- ❑ EU Agriculture Commissioner publically vowed any decisions would be based on science and would await ongoing studies, but regulations to ban virginiamycin and several other antibiotics introduced just 2 weeks later
- ❑ Tremendous political pressures applied to attain a hasty ban approval (i.e., spontaneous re-writes; no comments sought from the scientific committees; ban introduced/finalized in only 6 weeks, resolved issues around Sweden's entry to EU)
- ❑ The *European Commission* chose to ignore their own SCAN report and ordered a complete ban of virginiamycin and 3 other antibiotics used for growth promotion (tylosin, spiramycin, and zinc bacitracin)
- ❑ Decision based on speculation and fear rather than science, breaching the Commission's own procedures, and showing disregard for due process of law
- ❑ Ban to be enforced in all EU member nations in July 1999

Why This is Wrong!

- ❑ Ban is unfair to:
 - *Producers, who have relied on virginiamycin for 30 years to help produce healthy, economical food*
 - *Consumers, who ultimately must bear the additional production costs*
 - *Drug manufacturers, who depend on rigorous scientific evidence and processes to get products approved, then have their investments erased by hasty, politically motivated actions unsubstantiated by scientific evidence*
- ❑ Why care about antibiotic ban?
 - *Production costs rise*
 - *Food costs rise*
 - *Animal welfare suffers*
 - *Sets precedent for other politically motivated actions not supported by science*
 - *More animals must be produced*
 - *Environmental impact intensifies*
 - *No documented benefit for human health*

The Future...

Actions to Protect Antibiotic Use

- ❑ Pfizer and other pharmaceutical companies depend on integrity of the scientific and regulatory process
 - *Supports due process and will always accept public health decisions based on sound scientific principles (i.e., SCAN report)*
 - *Rejects unscientific, politically motivated decisions (i.e., virginiamycin ban in spite of SCAN report)*
- ❑ Pfizer filed suit against EU and Denmark
 - *Seeking reversal of decision to ban virginiamycin*
 - *Challenges legality of the ban after assurances that scientific evidence would determine outcome*
 - *Views ban as a violation of the fundamental principle that public policy decisions be based on science and not politics*
- ❑ Pfizer and animal health industry committed to ongoing research
 - *Undertaking relevant new research studies in US and Europe*
 - *Set-up European Surveillance Program, in conjunction with European Commission*
 - *Support on-going scientific symposia and meetings to evaluate safety issues*
- ❑ Producer and veterinarian awareness
 - *Stay informed of political actions in other nations*
 - *Encourage your government officials to make science-based policy decisions that will preserve these important production tools*
 - *Learn and practice prudent use guidelines for antibiotics*

**Excerpts from the latest
USDA National
Agricultural Statistics
Service (NASS)
“Broiler
Hatchery
and “Chicken
and Eggs”**

Broiler Eggs Set in 15 Selected States Up 3 Percent

According to the most recent National Agricultural Statistics (NASS) report commercial hatcheries in the 15-State weekly program set in incubators 183 million eggs during the week ending June 19, 1999. This was up 3 percent from the eggs set the corresponding week a year earlier. Average hatchability for chicks hatched during the week was 82 percent.

Broiler Chicks Placed Up 4 Percent

Broiler growers in the 15-State program placed 149 million chicks for meat production during the week ending June 19, 1999. Placements were up 4 percent from the

comparative week in 1998. Cumulative placements from January 3, 1999 through June 19, 1999 were 3.47 billion, up 3 percent from the same period a year earlier.

May Egg Production Up 4 Percent

U.S. egg production totalled 6.92 billion during May 1999, up 4 percent from the 6.67 billion produced in 1998. Production included 5.81 billion table eggs and 1.12 billion hatching eggs, of which 1.05 billion were broiler-type and 69.0 million were egg-type. The total number of layers during May 1999 averaged 320 million, up 3 percent from the total average number of layers during May 1998. May egg production per 100 layers was 2,164 eggs, up 1 percent from 2,153 eggs in May 1998.

All layers in the U.S. on June 1, 1999, totaled 320 million, up 3 percent from a year ago. The 320 million layers consisted of 260 million layers producing table or commercial type eggs, 56.8 million layers producing broiler-type hatching eggs, and 2.87 million layers producing egg-type hatching eggs. Rate of lay per day on June 1, 1999, averaged 70.0 eggs per 100 layers, up 1 percent from the 69.1 a year ago.

Laying flocks in the 30 major egg producing States produced 6.54 billion eggs during May, up 4 percent from May 1998. The average number of layers during May, at 302 million, was up 3 percent from a year earlier.

Egg-Type Chicks Hatched Up 4 Percent

Egg-type chicks hatched during May totaled 40.6 million, up 4 percent from May 1998. Eggs in incubators totaled 37.3 million on June 1, 1999, up 1 percent from a year ago.

Domestic placements of egg-type pullet chicks for future hatchery supply flocks by leading breeders totaled 283,000 during May 1999, up 47 percent from May 1998.

Broiler Hatch Up 4 Percent

The May 1999 hatch of broiler-type chicks, at 766 million, was up 4 percent from May of the previous year. There were 636 million eggs in incubators on June 1, 1999, up 4 percent from a year earlier.

Leading breeders placed 7.74 million broiler-type pullet chicks for future domestic hatchery supply flocks during May 1999, up 10 percent from May 1998.

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8. SCAN. Opinion of the scientific committee for animal nutrition on the immediate and longer-term risk to the value of streptogramins in human medicine posed by the use of virginiamycin as an animal growth promoter (produced at the request of the Commission in response to the action taken by Denmark under a safeguard clause to ban virginiamycin as a feed additive). 10 July 1998.
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Special Meeting

The 50th North Central Avian Disease Conference - To be held October 3-5, 1999 in Minneapolis, MN. This meeting will mark the 50th anniversary of the Conference and it will be dedicated to Dr. Ben Pomeroy, one of the charter members. The symposium this year will address Emerging Respiratory Diseases. It will be held during the afternoon of October 3rd and morning of October 4th. Numerous distinguished experts will speak on avian pneumoviruses, Omithobacterium rhinotracheale and variants of infectious bronchitis. Hotel Information: A block of rooms is reserved at the Minneapolis Airport Hilton. Please contact the Hilton directly to make your reservations. Be sure to mention you are with the NCADC in order to receive the group rate. Phone: 612-854-2100; Fax: 612-854-8002. For more information contact Dr. Dan Shaw, Program Chairperson, 612-625-4256 or Dr. Dave Halvorson, Secretary/Treasurer, 612-625-5292.

Broiler Whole Bird Condemnation (Company)

	Average Co.	Top 25%	Top 5 Co.'s
% Septox	0.305	0.276	0.251
% Airsac	0.249	0.077	0.030
% I.P.	0.125	0.045	0.016
% Leukosis	0.027	0.006	0.012
% Bruise	0.011	0.010	0.005
% Other	0.024	0.017	0.019
% Total	0.741	0.431	0.333
% 1/2 parts condemnations	0.388	0.264	0.173

Data for week ending 6/19/99



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Meetings, Seminars and Conventions

1999 July

July 8-11: South Carolina Poultry Federation Eleventh Annual Conference, Crowne Plaza Resort, Hilton Head Island, South Carolina. Contact: South Carolina Poultry Federation at 803-779-4700, Fax: 803-779-5002.

July 10-14: American Association of Avian Pathologists (AAAP) Annual Meeting, Hilton Riverside Hotel, New Orleans, LA. Contact: AVMA Housing Bureau, 108 Wilmot Road, Suite 400, Deerfield, IL 60015-0825. Phone: (800) 424-5250, Fax: (800) 521-6017.

July 15-17: Texas Poultry Federation 76th Annual Convention, Hyatt Regency Hotel, San Antonio. Contact: Texas Poultry Federation at 512-451-6816.

July 19-21: The National Turkey Federation Summer Meeting, Mayflower Hotel, Washington, DC, Contact NTF at 202-898-0100.

July 20-21: Hatchery-Breeder Smnr., Sheraton Colony Square, Atlanta, GA. Contact: U.S. Poultry & Egg Association, 1530 Cooledge Road, Tucker, GA 30084-7303. Phone: 770-493-9401.

July 27-30: International Conference & Exhibition on Veterinary Poultry, Beijing, China. Contact: Mr. Li Wei, Secretariat of ICEVP'99, Room 3011, Yuanliwuyue Building, No. 19 Huixindongje (Xiyuan), Beijing 1000029, P.R. China, Fax: +86 10 64950374

1999 August

Aug. 4-7: 3rd International Symposium on the Epidemiology and Control of Salmonella in Pork, Renaissance Mayflower Hotel, Washington, D.C.; Carol Seifert, U.S. Swine Consortium, Iowa State Univ., 102 Scheman Bldg., Ames, Iowa 50011-1112.

Aug. 10-12: IPA Fall Festival, Sheraton Four Points Hotel, Des Moines, Iowa. Contact: Iowa Poultry Association, 535 E. Lincoln Way, P.O. Box 704, Ames, Iowa 50010. Phone 515-232-2103.

Aug. 8-11: Poultry Science Association (PSA) Annual Meeting, Holiday Inn, Springdale, Arkansas, USA. Contact: PSA Headquarters, 1111 Dunlap Ave., Savoy, Illinois 61874, USA. Fax: +1 217 398 4119.

Aug 15-19: 12th WPSA European Symposium on Poultry Nutrition, Veldhoven, The Netherlands. Contact: Secretariat WPSA 12 European Symposium on Poultry Nutrition 1999, c/o Wageningen Agricultural University, Animal Nutrition Group, Dr. Rene P. Kwakkel, P.O. Box 338, 6700 AH Wageningen, The Netherlands. Fax: +31 317 4844260.

Aug. 19-20: North Carolina Federation Annual Meeting & Banquet, Joseph S. Koury Convention Center, Greensboro, N.C.; Ed Woodhouse, North Carolina State Univ., Scott Hall/Campus Box 7608, Raleigh, N.C. 27695.

Aug. 20-25: XXI World's Poultry Congress and 6th International Marek's Disease Symposium, Montreal, Canada. Contact XXI World's Poultry Congress Secretariat, c/o Events International Meeting Planners, Inc., 759 Victoria Square, Suite 300, Montreal, Quebec, Canada H2Y 2J7. Phone: 514-286-0855. Fax: 514-286-6066. E-mail: info@eventsintl.com

1999 September

September 19-23: European Symposia on Quality of Poultrymeat, Eggs and Egg Products, Bologna, Italy. Contact: Chairman of Organising Committee, Professor Achille Franchini, University of Bologna, Via San Giacomina 9, 40126 Bologna, Italy. Fax: +39 (0) 51 251936.

September 21: Incubation & Fertility Research Group (WPSA Working Group 6 (Reproduction) 1999 Meeting, Tours, France.

Contact: Dr. Glenn Baggott, Department of Biology, Birkbeck College, University of London, Malet St. London WC1E 7HX, UK. Fax: +44 (0) 141 631 6246.

September 21-24: 'Peru 99', XVI Latin American Poultry Congress, Lima, Peru. Contact: Asociacion Peruana de Avicultura, Esmeralda 255 Chacarilla, San Borja, Peru. Fax: +51-14 372 1538.

September 22-24: International Conference on Bird Reproduction, Vinci International Congress Centre, Tours, France. Contact: INRA, Avian Research Station, National Institute for Agronomic Research, 37380 Nouzilly, France.

September 25-28: NAAC Annual Meeting, North Raleigh Hilton Hotel, Raleigh, N.C. Contact: North American Agromedicine Consortium, c/o W. Gregory Cope, Department of Toxicology, North Carolina State University, Box 7633, Raleigh, N.C. 27695. Phone: 919-515-5296.

September 23-29: 26th World Veterinary Congress, Lyon, France. Contact: Mondial Vet 1999, CNVSPA, 40 rue de Berri, F75008 Paris, France. Fax: +33 (0) 153 83 91 69.

September 28: WESTVET 10, Western Meeting of Poultry Clinicians and Pathologists, Post Hotel, Lake Louise, Alta. Canada. Contact: Dr. Stew Ritchie, Phone: (604) 854-6600, Fax: (604) 854-6100, e-mail: cpcltd@uniserve.com

September 28-29: Georgia Poultry Conference, The Classic Center, Athens, GA. Contact: Georgia Poultry Federation, P.O. Box 763, Gainesville, GA 30503. Phone: 770-532-0473; or Extension Poultry Science, University of Georgia, Athens, GA 30602. Phone: 706-542-1325.