North Carolina Cooperative Extension Service

NC STATE UNIVERSITY

North Carolina Poultry Industry Newsletter

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Does the Use of Antibiotics in Poultry Production Pose a Risk to Human Health?

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Antibiotic resistant infectious agents in human medicine are a growing public health concern. In the case where this is true, people infected with antibiotic resistant bacteria may remain sick longer, or not recover at all. One cause of this resistance has been attributed to the practice of routinely adding antibiotics to the feed and water of poultry as a means of enhancing growth. The primary purpose in using these antibiotics is that they reduce the population of pathogenic bacteria in the intestinal tract of the birds which in turn enhances the growth of the animal. Many of the antibiotics that have been developed for use in animal production are related chemically to those used in human medicine. Some individuals believe that the use of these antibiotics in poultry hastens the development of bacteria that are resistant to these drugs.

There is a fallacy that more than 70 percent of the life-saving antibiotics and related drugs produced are used in food animal production to accelerate growth and prevent disease caused by overcrowded and unsanitary conditions on intensive animal production farms. The reality is that, annually, humans and our pets consume 10 times more antibiotics per pound of body mass than food animals do. The fact is that no medication or feed treatment can overcome poor management and poor bio-security. The rapid weight gain in many of these broiler chickens is primarily due to genetics, good nutrition, and excellent environmental conditions. The antibiotics used in the animal feed allow the birds to meet their genetic potential by enhancing intestinal health.

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Darkling Beetle Management in Deep Litter Houses

Mike Stringham, Extension Entomologist, N. C. State University

Summer is here, and as bad as the darkling beetle infestation may seem in your poultry houses right now, it's a safe bet that their numbers will go through the roof once the weather really warms up. Here are a few things to think about that may help reduce costs and improve control of this common poultry pest.

Use the most effective and economical method of application. Dusts are easy to apply and coverage looks impressive when a cloud of dust fills a building from floor to ceiling, but there may be more flash than bang for the buck here. First, dust applications just don't penetrate as well as sprays into the cracks and crevices where beetles hide. Secondly, dust treatments may actually cost more. A dust product that costs half as much as a liquid concentrate sounds like a good deal. Right? Not necessarily. Dusts generally contain less active ingredient than spray concentrates. Even without the cost of extra labor needed for a spray treatment, dusts can still be more expensive if you must apply four times as much product to get the same concentration of active ingredient per unit of surface area.

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Timing of application is also important. Many beetles and beetle larvae are just below the surface of the litter right after birds are removed from the house. A treatment made immediately after load out will kill a higher percentage of beetles than if you wait a week or more to treat. Where beetle infestations are extremely bad, treat just after load out and again just before birds are placed back. Finally, consider skipping treatments in late summer or early fall. I know the idea sounds crazy since beetle infestations are often heaviest at that time, but there is a good reason for doing it. Beetle numbers will fall naturally as soon as cold weather hits. Why not let the weather knock down the beetle population for you and save a little on your treatment costs. Start back with regular treatments in mid winter to drive the beetle population as low as possible before the weather warms up in the spring. This may delay the onset of severe beetle infestations by a month or two in the spring and summer.

Target treatments effectively. Poorer than expected beetle control is due in part to the fact that the application rates for the available insecticides are based on surface area. Effective control, then, depends on most beetles and larvae being in contact with the treated surface. That would be fine except for the fact that litter is a volume – a three dimensional space made up of a given width, length and depth. Most beetles won't come to the top of the litter, especially since insecticides are often repellent and tend to drive the beetles away from the treated surface. With 4 to 6 inches of old litter below the treatment zone, there's plenty of untreated space beetles can escape to. So how do you improve the odds that beetle will come into contact with insecticide before the insecticide loses its potency? The answer is simple, but requires extra work. Split your application. Use the low label rate, applying one treatment 2 to 3 inches below the surface, and another treatment on top of the litter. This will distribute the highest allowable rate more effectively. If new litter is to be placed over old, treat the old litter surface, then spread and treat the new litter. Otherwise, you will need to push back half the old litter, treat that surface, put the litter back, and treat again. Yes, this last method is labor intensive, but the results may well be worth the extra effort.

Does the Use of Antibiotics in Poultry Production Pose a Risk to Human Health?

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Companies that market poultry meat and eggs do not own or operate their own poultry farms, but they have developed husbandry standards as a means of assuring consumers that the animals grown for their use receive the best possible care. All of the companies growing broilers, turkeys, and laying hens utilize the best veterinary care practices and as such typically employ their own poultry veterinarian with specific expertise in poultry health care. As with any animal production operation, when a disease outbreak does occur, the flock this must be treated with drugs or antibiotics. In the cases where antibiotics are used, there are strict governmental regulations that mandate how the antibiotics are to be used to treat the animal and specifically the withdrawal time after the animals have been treated before they can be processed for human consumption. This withdrawal period ensures that the antibiotic has been totally cleared from the birds system, to assure that no antibiotic residues reach the consumer.

It is much more economical for the poultry industry to prevent a disease outbreak than respond to it through a treatment. These pre-emptive measures can prevent death losses as well as the loss of performance that accompanies both clinical and sub-clinical infections. The primary prevention methods used by the poultry industry include immunization, proper nutrition, appropriate husbandry practices, sanitation, and isolation from potential contaminants (bio-security).

There has been much concern expressed about the potential of hypersensitivity reactions in humans consuming antibiotic residues in food. Confirmed cases of this are extremely rare or nonexistent in humans resulting in an insignificant public risk.

There are groups proposing the suspension of the use of antibiotics as growth promoters. They believe that this will preserve and increase the effectiveness of human antibiotics, and thus aid us in the fight against potentially fatal antibiotic-resistant bacteria. However, low level consumption of antibiotics 2 to 20 mg day has not been conclusively proven to change the resistance of microorganisms to antibiotics. The surveys that have

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Does the Use of Antibiotics in Poultry Production Pose a Risk to Human Health?

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been conducted in the United States and Europe indicate that overall there is no clear indication of either implication or exoneration of antibiotic resistance. What appears to be a contributing cause of bacterial resistance in humans can be attributed to a number of factors identified by The World Health Organization. These factors include:

Poverty More than any issue, inadequate access to drugs directly caused by poverty is a major force in world wide resistance. Too often, the world's poor must resort to cheap counterfeit medicines or suspend antibiotic treatment too soon, before the disease is cured. Instead of wiping out the infection altogether, those medications kill only non-resistant organisms leaving their tougher, more resistant counterparts to flourish.

Misdiagnosis In both developing and industrialized nations, problems in public health systems often cause misdiagnosis that contributes to antibiotic resistance. Overworked, under-informed, and poorly equipped healthcare workers inevitably turn to "defensive" prescribing of antibiotics to hedge themselves against potential complications. Symptom-based guesswork increases the likelihood of prescribing the wrong medication. For instance, it's been estimated that U.S. and Canadian physicians over-prescribe antibiotics by 50%.

Counterfeit Drugs The $21 billion worth of fake and pirated drugs sold annually impacts human health directly, as well as encourages resistance to develop. Counterfeits, when they contain any antibiotics at all, often contain less than the recommended concentrations. The under-dosing encourages selection for resistance.

Shotgun Dosing and High priced Prescriptions Ironically, a fear of resistance often encourages doctors to avoid the narrow-spectrum drugs that treat specific complaints, choosing instead broader-spectrum antibiotics that have wider applications and which also may contribute to resistance in non-target organisms. In addition, The World Health Organization says, health-care providers in poorer countries sometimes earn a commission for recommending the more expensive broader-spectrum medications.

Misguided Demand In developed countries, patient demand for antimicrobials also encourages resistance. A 1997 European study found the No. 1 reason doctors prescribed the wrong antibiotic for a disease was patient pressure. In this country, 70 percent of doctors in one study said they had prescribed a drug they might not have otherwise because of patient pressure, in many cases driven by consumer advertising.

Under-education In poor nations, consumers have broad access to drugs over the counter, without adequate knowledge on how to use them. In more affluent countries, The World health Organization says the topic of antibiotic resistance is given only passing glance in medical schools.

Pets A large portion of the human population has daily contact with companion animals such as dogs, cats, etc. In a survey conducted in Denmark it was found that more than half of the fluoroquinolones and cephalosporins used went for the treatment of pets. Thus a small number of animals in the survey, 1,200,000 cats and dogs consumed more antibiotics than 154,200,000 pigs, chickens and cattle. Considering the shared environment of pets and humans the transfer of resistant bacteria should be of concern.

Hospitals The World Health Organization cites an analysis of 10 studies done at teaching hospitals worldwide. In those studies between 40 and 91 percent of the antibiotics were inappropriately prescribed. The survey also showed widespread disregard among hospital workers for basic hygiene practices that interrupt the spread of antibiotic-resistant organisms.
Of the over two million hospital-acquired infections per year in the United States, the resistant organisms of greatest risk for poor patient therapeutic outcomes are:

1. Methicillin-resistant staphylococci, especially S.aureus;
2. Enterococci resistant to vancomycin or "so-called VRE";
3. E.coli and Klebsiella spp. resistance to newer cephalosporins;
4. Fluoroquinolone (ciprofloxacin)-resistant strains accross nearly all major bacterial species;
5. Muti-drug resistance among P.aeruginosa and Acinetobacter spp.

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None of these resistances have been linked to food-borne bacteria. Rates of resistance among monitored institutions vary widely, but clear increases in resistance among the five listed nosocomial organism resistance problems are driven by the use of antimicrobials in humans and other factors such as a decline in the public health infrastructure and local infection control practices, but not related to the use of antibiotics in food animals.

Despite the lack of sufficient evidence demonstrating a significant risk to human health, the calls for banning antimicrobial use in farm animals persist. Indeed, experts have stated that banning antibiotics as growth promoters in animals will not solve or even impact the problem of antibiotic resistance in hospitals. While antibiotic resistance is a public health threat around the world, it is clear that hospitals and community acquired diseases, unrelated to animal drug use, constitute the major problems. We need to be focusing not on farm animals but on human and pet antibiotic use.

Most Serious Antimicrobial Resistance Problems
Facing Human Medicine in North America

GRAM-POSITIVE COCCI	**RISK FROM ANIMAL SOURCE**
StaphylococciMethicillin or oxacillin	None
MLS_b (Synercid®)	None
Glycopeptides	None
StreptococciDRSP and other	None
EnterococciAmpicillin and Aminoglycosides	None
Synercid®	None
Glycopeptides	None
Oxazolidinones	None

GRAM-NEGATIVE BACILLI	**RISK FROM ANIMAL SOURCE**
Enterobacteriaceae *E. coli*, Klebsiella spp.	None
***Salmonella* and other food-borne species**Extended spectrum beta-lactamases (ESBLs)	None
Stably derepressed Amp C (CMY-2, etc.)	Debated[a]
Fluoroquinolones	Debated[a]
Novel β-lactamases	None
P. aeruginosaMDR isolates[c]	None
AcinetobactersMDR[c]	None
CampylobactersMacrolides	None
Fluoroquinolones	Debated[b]

[a]Resistance rates in humans are higher than in animal strains.
[b]Drugs of therapeutic choice have remained active regardless of resistance discovered in animal pathogens.
[c] Multi-Drug Resistant isolates

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Fulfilling the Vision – USDA-FSIS is on a Mission

Kevin M. Keener, Ph.D., P.E., Associate Professor of Food Science and Food Process Engineer

USDA-FSIS published their vision for the future of food safety in July 2004. This document is available for review at http://www.fsis.usda.gov/About_FSIS/Fulfilling_the_Vision/index.asp .This document outlines the USDA-FSIS vision (2004) for food safety and food security against known and unknown threats.

The implementation of this vision will affect all meat and poultry processing plants in the United States. Highlights of this document include an assessment of current state of known food safety hazards (Listeria monocytogenes, E. coli O157:H7, Salmonella, Bovine Spongiform Encephalopathy (BSE) and unknown hazards (Food Security) plans for modernization of existing inspection practices, improving on farm management practices, and international food safety efforts. The document also details the need to enhance food safety by incorporating risk into inspection priorities.

This risk based approach was further elaborated on recently at a Food Safety Summit (March 29, 2005) in Washington, DC. The new agricultural administration laid out their plans that "risk based" decision-making is now the priority for USDA-FSIS. Within the presentations by industry, FDA, USDA-FSIS, and university persons, risk based decision making was presented as a 21st century science. USDA-FSIS and FDA acknowledged that limited resources have required them to assess risk and then determine where to maximize their regulatory dollars. Conceptually, this is a sound scientific approach. However, politics and social pressure play a major role in congressional budgets.

A risk based approach implies a certain level of acceptance to food borne illness. Zero foodborne illness is not realistic or cost effective; also some current regulations are not based on risk such as the "zero fecal" rule. Can you see consumer groups championing risk based approach and eliminating the zero fecal rule? – "I don't think so." The risk based approach USDA-FSIS has developed includes the concept of a Hazard Coefficient (HC's). HC's are process specific ratings that the USDA FSIS will use to prioritize reassessment and inspection priorities. (That is the plan anyway.)

Within this risk based analysis for inspection prioritization, the USDA-FSIS is proposing to develop Hazard Control Coefficients (HCC) for specific inspected regulatory processes and are assigned to individual plants. The HCC's will be based on the foods and processes being used at a particular plant, and the plant history [non-compliance reports (NR's)] generated.

Industry representatives are very nervous about this approach since it sounds good, but the details on implementation are still being developed. A recent survey by Food Products Association (formerly National Food Products Association) found no correlation between NR's and food recalls. What was evident was

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Fulfilling the Vision – USDA-FSIS is on a Mission

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that the number of NR's was directly correlated to the number of in-plant inspectors. Also, the data showed that after a plant had a recall the number of NR's increased dramatically where as prior to the recall no clear trend was evident.

Political and societal pressures along with the science will determine the final success or failure of this approach, but it is important that you as food producers stay aware of these proposed changes and provide public comment with your experiences and concerns. I would encourage you to periodically review USDA-FSIS's website for updates, and subscribe to their email press releases http://www.fsis.usda.gov/News_&_Events/Newsletters/index.asp.

The one constant in this process is change. The USDA-FSIS is constantly making changes to improve food safety with or without your input. I would encourage you to become a participant in this process and not "leave it to somebody else" because that is just what will happen. If you have any questions or need training in food safety, food sanitation, HACCP, or food security please contact me at Department of Food Science. Kevin M. Keener: phone (919) 515-9518, fax: (919) 515-7124, or email: Kevin_Keener@ncsu.edu

New Faces at NCSU in Support of NC Cooperative Extension and the North Carolina Poultry Industry

Brian W. Sheldon, Department Extension Leader
Department of Poultry Science, NCSU

I am pleased to introduce to the poultry industry and field faculty and agents located in the North Carolina county Cooperative Extension offices four relatively new members of our NCSU faculty that have been recently hired into three departments on campus (Poultry Science, Soil Science, and Biological & Agricultural Engineering). Each of these new faculty members stand ready to assist NC Cooperative Extension and members of the poultry industry in their day to day challenges. Based on their individual areas of expertise as described below, I would encourage field faculty and agents in our county Extension offices as well as members of the poultry industry to contact these new members of our NCSU Poultry Team.

Dr. Edgar O. Oviedo, Assistant Professor
Department of Poultry Science, Box 7608, NCSU, Raleigh, NC 27695-7608
Phone: 919-515-5391, E-mail edgar_oviedo@ncsu.edu

Dr. Edgar O. Oviedo is the new broiler extension specialist in Poultry Science. Edgar was born in Colombia, South America where he received his primary and secondary education and his veterinary degree from the University of Tolima, Colombia. Following completion of his DVM degree, Edgar worked in the poultry veterinary services area for three years before beginning his graduate education. Dr. Oviedo obtained his M.S. degree in Brazil and his Ph.D. in Poultry Science from the University of Arkansas. Following his doctoral work he served as a nutritionist in the poultry industry and as an extension agent. He joined the Poultry Science faculty at NC State University two months ago following nearly three years of experience as an assistant professor at Stephen F. Austin State University in Texas. Dr. Oviedo's areas of responsibility include extension and applied research activities in broiler nutrition and management and nutrient/waste management. His work will focus primarily on issues related to minimizing nitrogen excretion, including air emissions and air quality, feed/food safety, broiler intestinal health, water quality, and litter management. Moreover, being fluent in Spanish and English, Dr. Oviedo will be an excellent resource person for specific questions and programs that can serve the poultry industry's Hispanic workforce.

Dr. Rory Maguire, Assistant Professor
Department of Soil Science, Box 7619, NCSU, Raleigh, NC 27695-7619
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In regions with intensive animal farming, large quantities of nutrients are imported from grain producing areas such as the Mid-West. A significant amount of the nutrients found in these animal feeds ends up in manure that is applied to cropland, often above crop requirements. Regulations are being enacted in many states, including North Carolina, to control manure nutrients and preventing them from entering rivers and streams. As a soil scientist, Dr. Maguire's research focuses on identifying nutrient / waste management practices

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New Faces at NCSU in Support of NC Cooperative Extension and the North Carolina Poultry Industry

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that will maintain profitable agricultural production while helping farmers meet regulatory requirements and protect the environment. In cooperation with several poultry scientists, Rory's main areas of research include: (a) modifying animal diets to reduce the concentration and solubility of phosphorus in manure; (b) lime treatment of manure to stabilize nutrients and kill pathogens; (c) alum treatment to reduce ammonia volatilization and stabilize phosphorus; and (d) validation of the Phosphorus Loss Assessment Tool, which is used to predict phosphorus losses from fields and is now mandated for animal producers in some regions of NC.

Dr. Sanjay Shah, Assistant Professor
Department of Biological & Agricultural Engineering, Box 7625, NCSU, Raleigh, NC 27695-7625
Phone: 919-515-6753, E-mail Sanjay_Shaw@ncsu.edu

Sanjay Shah received his Ph.D. in Biological Systems Engineering from Virginia Tech in 2000. His MS and BS degrees were from Louisiana State University and Punjab Agricultural University (India), respectively. Following completion of his B.S. degree, he worked in the area of agricultural mechanization for 8 years in his native country, Nepal. Prior to joining NC State University's Biological and Agricultural Engineering Deptartment as extension specialist in August 2003, Dr. Shah served as an extension specialist (agricultural engineering) at the University of West Virginia. At NC State, Dr. Shah's extension responsibilities include conducting animal waste management related extension activities with an emphasis on poultry litter management and livestock and poultry air quality. His extension activities include participating in training activities organized by NC State's Land Application Training and Demonstration Center as well as by county extension agents. His current research activities include: investigating the leaching impacts of turkey litter stockpiled on bare soil; ammonia losses from swine effluents applied using traveling gun and drag hose systems; regenerating scrubbers for cleaning animal barn air emissions; and development and evaluation of heat exchanger-biofilter systems for use in poultry houses.

Dr. Lingjuan Wang, Assistant Professor
Department of Biological & Agricultural Engineering, Box 7625, NCSU, Raleigh, NC 27695-7625
Phone: 919-515-6762, E-mail ling_wang@ncsu.edu

Dr. Lingjuan Wang is currently an assistant professor in agricultural air quality engineering in the Department of Biological and Agricultural Engineering at North Carolina State University Her current faculty appointment is 80% research and 20% teaching. Before joining NC State in January of 2005, Dr. Wang received both her M.S. and Ph.D. degrees from Texas A&M University. Her area of specialization is agricultural air quality related to animal feeding operations and agricultural processing. Specifically, her research interests include: air pollution abatement system design; air quality sampling and monitoring; air dispersion modeling; and animal housing and environmental management.

Change in Leadership for the NC State University Department of Poultry Science

Dr. Gerald "Gerry" Havenstein

Dr. Gerald "Gerry" Havenstein, who has served as the Head of the NC State University Department of Poultry Science for the past 16 years, stepped down from his leadership role for the Department on June 30, 2005. He will continue to work in the Department for the next few years on a half-time phased retirement program. A native of Manhattan, Kansas, he received his B.S. degree from Kansas State University, and his M.S. and Ph.D. degrees from the University of Wisconsin. From 1967 to 1986, Dr. Havenstein served 9 years as a staff geneticist and 10 years as the Director of Genetic Research for H&N, Inc., a poultry breeding company located in Redmond, Washington. From April, 1986 through June, 1989, he served as the Chair of the Department of Poultry Science at The Ohio State University in Columbus, Ohio, as well as one year as an interim Assistant

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Change in Leadership for the NC State University Department of Poultry Science

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Director of the Ohio Agricultural Research and Development Center in Wooster, OH, before coming to NC State.

The NC State Department of Poultry Science has prospered under Havenstein's leadership. Traditional programs in poultry management, nutrition, general and reproductive physiology, toxicology and immunology that were strongly in place on his arrival have been maintained and enhanced, and strong new programs in poultry waste management, intestinal physiology, poultry product safety, virology, biotechnology and genomics have been added. A now world renowned NCSU Center for Animal and Poultry Waste Management was established in the Department in 1993. That Center is currently in the process of being reestablished to become a national Center that will involve many other university and industry groups, as well as government agencies. A new Feed Mill Unit that has been funded and developed under his leadership is also nearing completion. The Feed Mill Unit will allow the Department to become much more involved in providing research, teaching and student training to meet the milling needs of the poultry industry. The Department is also currently working with the industry to develop a small processing facility for the Department that will allow hand's on processing experience for students before they enter the industry. That facility should be completed by the fall of 2005.

Dr. Sam Pardue, Alumni Distinguished Undergraduate Professor at NC State has been named to succeed Professor Havenstein as Head of the Department effective July 1. He received his undergraduate and graduate degrees in poultry physiology from NC State, and than served in a postdoctoral program at the University of Massachusetts. Prior to coming to NC State, he was an Assistant Professor at Texas A&M University, and before that an instructor at Lenoir Community College in Lenoir, NC. Dr. Pardue came to NC State as an Assistant Professor of Poultry Science in 1989, and rose to the rank of Professor in 1998. He has served as the Department's undergraduate teaching coordinator throughout his tenure.

Dr. Pardue has received numerous recognitions for his teaching, research and service achievements. At NC State, he was named to the Academy of Outstanding Teachers in 1996. He received the Poultry Science Association's Student Recruitment Award in 1993, and its Purina Mills Teaching award in 1994.

Sam Pardue brings over 20 years of experience in teaching, research and outreach to the Department Head position. He will do an excellent job of representing the Department to all of its constituencies.

Calendar of Events

Date	Description
Aug. 1-3	**Poultry Science Association Meeting** Alabama
Aug. 18 & 19	**NC Poultry Federation Meeting**
Sept. 12-17	**NC Turkey Festival** Raeford, NC
Sept. 15	**Area Youth** (4-H and FFA) **Poultry Judging Contests** Cumberland County Fair, Fayetteville, NC
Sept. 28 & 29	**Turkey/Broiler Days** (Poultry Supervisors meeting) Raleigh, NC
Oct. 3	**National Small Farms Meeting** Greensboro, NC
Oct. 5	**Robeson Regional Agricultural Fair** Lumberton, NC
Oct. 5 – 7	**Animal Waste Symposium** Raleigh, NC
Oct. 14 – 23	**North Carolina State Fair** Raleigh, NC
Oct. 18	**Piedmont Servicemen's Association Meeting** Randolph Co. Cooperative Extension Service, Asheboro, NC Contact Dan Campeau at 919-542-8202 for more information

EPA's Air Emissions Consent Agreement:

What I would Do if I Had a Poultry Farm. My Thoughts on "To Sign, or Not to Sign?"

James Cochran

Early on, when I was asked about this agreement stuff, I did not know enough about it to offer any good advice. I probably still don't, but after attending the session in Sanford and scheduling a similar session in Lumberton, reading the summaries from other EPA grower meetings, talking, exchanging emails, etc., I'll repeat some advice from others. The sign-up time period has been extended a second time from July 1 to Friday, July 29.

I am not going to review the agreement itself. That has been covered and is readily available (internet website URL address at the end of this article). There are some common misunderstandings I've heard repeated so, to clarify:

1. This is a voluntary agreement.

2. Dry litter poultry production was represented during development of this agreement, but probably not to the level of satisfaction, for growers and others in and affected by the poultry industry. The agreement was primarily instigated by the swine industry and includes the confined animal growing facilities of swine, dairy, table egg and dry litter poultry. It does not include the open air growing of beef cattle feedlots.

3. National pork check-off dollars will help pay for most of the farmer share of the swine portion of the study ($2,500 per farm). This money does NOT go to EPA or "the government" but is managed by an independent third party for conducting the on-farm research study.

4. No "check-off" dollars exist nor has any poultry industry funding been similarly designated for the agreement study as with the pork check-off dollars.

5. The "penalty" ($200 +) for signing the agreement is a legal term and ~~can~~ does cause spirited ethical debate (paying a penalty up front), but it is more of a procedural accounting thing. This fee goes into a general fund and does not go toward funding the research study.

6. Three dry litter poultry farms to be included in the study (one turkey and two broiler farms) are generally agreed NOT to be enough to collect good data, but this is what funding restrictions will permit.

7. Other research studies will be used along with any data collected from the agreement study, to form any proposed regulations needed to meet current law. If no dry litter poultry farms signup, dry litter poultry farm emissions guidelines WILL still be formulated from estimates and/or extrapolated from available data.

8. Air emissions regulations are not new, they have always existed with little or no enforcement in the agriculture field (pun intended). Courts have ruled that agriculture is NOT exempt. By responding to proactive animal industry requests (pork producers), EPA has formed this agreement as a way to help collect useful and accurate data to be used when forming regulations. Regulatory guidelines WILL be formulated to meet already existing laws using the best available scientific data.

9. EPA has gone above and beyond their normal procedures in dealing with industries when it comes to this agreement with animal agriculture. While agreements are often developed between EPA and industries, this one is a little different in that it maps out a plan to gather emission data from the industry as a whole, whereas, large manufacturing companies usually collect, provide and substantiate emissions data for each of their manufacturing facilities (which would comparatively equate to each farm, which, is viewed as cost prohibitive).

This has been an irritating issue for farmers which large manufacturing industries are accustomed to and familiar with (and include in their operating expenses) -- that a facility is required to provide emissions data to prove whether the levels exceed regulations and require reporting and/or permitting.

10. Two of the three laws (CERCLA and EPCRA) deal primarily with reporting emissions and are not so much regulations for air emissions violations. The violation comes from NOT reporting required air emissions. Which, poultry farms have not done because of lack of accurate data (that this agreement study desires to help collect). It is these reporting requirements that probably would include even a one or two house farm (emitting 100 pounds of ammonia within any 24 hour period during the year).

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EPA's Air Emissions Consent Agreement:

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11. The Clean Air Act is the third set of laws referred to that is more specific about the amounts and quantities of air emissions regarding a violation and would require an operating permit. The level or amounts of emissions from a poultry farm to trigger these regulations is unclear, but is estimated at 100 tons of a pollutant emitted during a year (4, 6, 8 + houses per site ?). Again, this is what the agreement will partially help determine.

12. Timeline: it will be 2006 before the study is setup and any monitoring begins. The on-farm data collection will last about two years. It will then take about a year to analyze collected data, compare to existing data, compile, formulate and submit recommendations. Then, a multi-year process will begin of proposing regulations, publishing them in the

Federal Register, conducting public hearings, collecting comments, revisions and then issuing the final rules to be adopted and enforced. The math adds up to the year 2011, 2012 or so.

James Cochran's scenarios for signing the agreement (based upon what I've heard others say, but only my opinions):

1. If you have ADJACENT poultry AND swine farms, then you MAY be able to get the poultry farm covered as part of a whole farm agreement (with the $2,500 study fee being paid by the pork check-off dollars?). Possibly. Maybe. EPA will generally consider facilities next to each other as one site.

2. If your farm is located in a growing urban/sub-urban housing development area, then, there will likely be future complaints (even though you were there first). Such a site might be good for proactive action such as participating in this agreement.

3. If your farm has already received complaints, then it might be good to look into the benefits of the agreement (i.e., limited legal benefits and perceived marketable benefits of your willing cooperation).

4. If you have a large farm with 10, 12, 14, 16 or more poultry houses located within sight of each other (even though on separate tracts of land they look like "one big farm" from the highway), then, you maybe should look more closely at the agreement for the farm(s).

Scenarios for spending that $2,500 + somewhere else on the farm (4 wheeler, new truck down-payment, employee raises, flock supervisor appreciation gift, etc.):

1. Your houses are very isolated and you have never received any complaints.

2. You only have two (or four?) houses at this time with no plans to expand.

3. Your houses are, or will soon be paid for and/or you expect to retire and sell them within the next several years before any poultry farm air emissions regulations would be adopted and enforced (2010, 2011, 2012, ...)

One final comment: All this discussion and agreement is federal EPA, NOT state. However, UNLIKE when the state speeded up regulating animal waste following the mid 1990's lagoon spill, I don't envision a similar type event emitting a massive amounts of air pollutants from a farm gaining equal popular press attention. Any state can enact their own air emissions regulations through normal processes and/or by legislative action.

This is EPA's updated website that has links to news releases, FAQs, the agreement, fact sheets, Federal Register Notice, etc.:
http://epa.gov/compliance/resources/agreements/caa/cafo-agr-0501.html