AS1 - Newsletter

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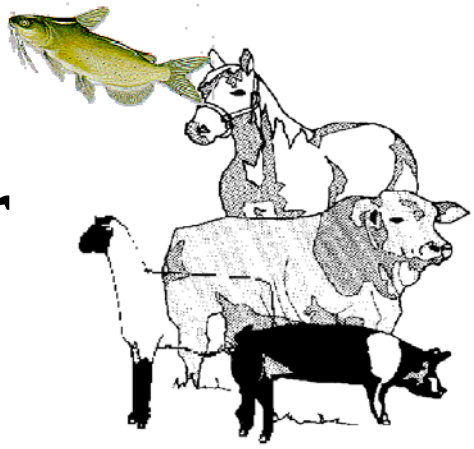

Livestock Newsletter

January/February 2006

http://www.ces.uga.edu/Agriculture/asdsvm/beef-home.html

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Robert L. Stewart
Extension Coordinator
Animal and Dairy Science Department

LIVESTOCK NEWSLETTER

January/February *AS-1*

Copper Uses May Be Challenged by U. S. Environmental Protection Administration

Gary J. Burtle
Animal & Dairy Science
Tifton, GA

Copper use is important in the catfish industry to control off-flavor producing algae. It has other uses, that have been documented and are awaiting federal permits, including control of snails, zebra musselsl, parasitic diseases, fungus, and bacterial diseases. The catfish industry accounts for over 50% of all aquaculture production in the U.S. Over $630 million in catfish products were processed in 2004, and millions more fish are consumed by recreational fishermen and local customers of private pond owners. Off-flavor, caused by blue green algae in catfish ponds, has cost between $0.02 and $0.10 per pound of fish processed and can account for most or all of the potential profit from the crop. Few alternatives compare to copper for effectiveness and economy as an algicide.

However, copper is considered by many in the regulatory sector to be potentially hazardous to non-target organisms. Much of the concern is directed at unknown results of copper accumulation in soils near treatment sites. Since copper does not decompose, it remains in the soils under the treated crop or pond indefinitely or until it is moved by leaching, runoff, or soil erosion.

Copper sulfate has been used for decades for a wide variety of plant disease, herbicide, algicide, fish disease, and animal disease controls. It is certified, as a General Use Pesticide, by the U.S. Environmental Protection Agency (EPA), but it is labeled as a class I - highly toxic chemical because of its potential danger to threatened and endangered aquatic species.

Efforts by the aquaculture industry, state and federal fish hatcheries, and U.S. Department of Agriculture have attempted to expand approved uses for copper to control more fish disease organisms. Since, few chemicals and drugs are approved by the EPA and the U.S. Food and Drug Administration (FDA) for treatment of sick food fish, new, effective, and economical tools are needed. Scientists at the Harry K. Dupree Stuttgart National Aquaculture Research Center have studied copper sulfate in support of a new animal drug approval by EPA for its use in control of ichthyopthiriosos (ICH) in channel catfish. If the data is acceptable, three of the necessary four requirements will have been met for FDA approval of a new animal drug. Will meeting the fourth requirement be compromised by the EPA review process?

In many aquatic environments, from oceans to ponds to rivers, algae can produce toxic chemicals that affect fish, wildlife, domestic animals, and man. Algal toxins can cause catfish mortalities. Agriculture Research Service (ARS) scientists at Aquaculture Systems Research, Pine Bluff,

Arkansas; Catfish Genetics Research, Stoneville, Mississippi; and University collaborators in Arkansas and Mississippi established that microcystin/anatoxin-type toxins were likely involved in several catastrophic fish kills on commercial catfish farms. Algal control and management strategies are being evaluated to prevent toxic algal blooms from forming.

New dangers from algae are being discovered. An alga with no previous record of harmful characteristics has been associated with a series of fish kills in Mississippi, North Carolina, Texas, and Arkansas. The suspected organism has been identified and cultured by ARS scientists at the Catfish Genetics Unit, Stoneville, Mississippi, and, in collaboration with the National Oceanographic and Atmospheric Administration Harmful Algal Bloom Chemistry Staff, have identified a toxic substance. This alga is easily controlled by low-concentration copper sulfate additions, thus adding a use for copper-containing algicides. Furthermore, a toxin-related condition in catfish that causes digestive tract spasms has been associated with algal toxins. An alga that produces an anatoxin was linked to visceral toxicosis of catfish. Visceral toxicosis has killed up to 40% of brood catfish in affected ponds during fall and winter in the four-state region of Alabama, Arkansas, Louisiana and Mississippi. Since copper algicides are currently legal, they could play an important role in managing this toxic condition.

Where can we go for help if copper is lost in the regulatory screening process? Alternative algicides are few and expensive, but include sodium carbonate peroxyhydrate, hydrothol, and diquat. Parasite treatments with formalin may remain the only approved choice despite the potential dangers to the applicator. However, formalin will also be subject to label review by EPA in 2006. New animal drugs and herbicides may be developed, but at what cost and when will they be available. Diuron and other known algicides may be labeled for fish use if enough information is generated to satisfy the EPA and FDA. In past years, diuron has been available by emergency exemption for control of blue green algae but manufacturers have not sought labeling for this limited use. Although diuron used on cotton fields in the southern U.S., nearby fish ponds may be denied the use of this algicidal chemical due to concerns about its performance in an aquatic environment. The quest for the ideal algicide will have to continue.

Scientists at the National Warm Water Aquaculture Center, Stoneville, Mississippi cooperated with ARS scientists at the Natural Products Research Unit, Oxford, Mississippi, to identify and evaluate new algicides for use in managing algae-related off-flavors. One promising compound, a modified anthroquinone, was tested in outdoor mesocosms (small models of pond environments) and found to be a selective algicide to odor-producing blue-green algae, thereby reducing levels of odorous compounds in water. This compound is undergoing patent application. The next step would be to approach EPA for labeling. Another step is to test the algicide for effectiveness in commercial catfish ponds.

Ironically, organic vegetable production permits the use of copper in its basic sulfate form and other forms. The use of copper in organic production is controversial and users monitor the build up in soils to avoid harming organisms such as earthworms. The need for a fungicide to prevent catastrophic losses has been recognized as an essential element to good husbandry.

For more information, search the links to: www.copper.org for the biological importance of copper, or http://www.btny.purdue.edu/outreach/resources/Aquatic_Herb_transcript.html for why herbicides affect plants and not you. For information about copper uses and other drugs uses see: http://ag.ansc.purdue.edu/aquanic/jsa/aquadrugs/publications/world_drug_progress_9-20-99.htm

and http://agr.georgia.gov for the Pesticide Division of the Georgia Department of Agriculture and pesticides that are registered for use in Georgia.

National Animal Identification System

Dr. Ronnie Silcox
Extension Beef Specialist

The National Animal Identification System (NAIS) has been in development for the past few years. Since 2004 there have been USDA listening sessions on NAIS. On April 25, 2005 USDA issued a draft of the Strategic Plan for implementation of NAIS (22 pages) and a draft of program standards (36 pages). These reports are available in pdf format along with additional information on the USDA web page at .http://animalid.aphis.usda.gov/nais/ USDA is drafting proposed rules that will establish regulations for NAIS.

The goal of NAIS is to be able to identify all animals and premises that have had contact with a foreign or domestic animal disease of concern within 48 hours of discovery.

The draft strategic plan lays out the time line. This is a proposed time line and could change as things develop. The proposed time line is as follows:

2005:
July 2005 - all state have an operational voluntary premises registration system.
August 2005 - Issue animal ID numbers to tag manufacturers. These 15-digit numbers will begin with “840". “840" is the code for United States.
Tracking and data collection will be tested.

2006:
Premises registration is still voluntary. Goal is to have 25% of premises registered by April 2006.
Animal Identification is still voluntary.
April 2006 - system for allocation of Animal ID’s fully operational.
July 2006 - Interstate Certificate of Veterinary Inspection (ICVI) fully operational.

2007:
Premises registration still voluntary**,** but increased publicity needed.
Animal ID still voluntary.
April 2007 - Incentives to report interstate movement of animals.
October 2007 - Infrastructure in place to collect animal records at high capacity abattoirs (processing plants).
Initiate collection of animal movements at concentration points (markets, feedlots, etc.).

2008:

January 2008 - Premises registration mandatory.
January 2008 - Animal Identification mandatory.
July 2008 - collection of a high percentage of records at abattoirs.
July 2008 - collection and reporting of movement of animals.

2009:

January 2009 - National Animal Identification is fully implemented. All components are mandatory.

As the time line shows, the current plan is to phase in NAIS over four years. Over the next year or two participation is expected to be voluntary with an eventual move to a mandatory system. The infrastructure to put the entire program into place over night is not there. The first step in this system is to identify the locations where livestock can be found. Each state is responsible for assigning premise numbers. Currently all 50 states, including Georgia, have a Premises identification system. Each farm, producer or operation will be assigned a 7-digit ID number.

The plan called for development of an Animal Identification Number by August of 2005. On March 3, 2006 USDA released guidelines for the manufacture and distribution of official identification devices. Today, anyone can buy electronic ear tags, but producers who have a registered premises can purchase official tags with the official “840" code. These numbers will be recorded as issued to a particular premises and will be used to determine the point of origin of the animal or where the animal was first tagged. For cattle this will be a unique 15-digit number that will stay with the animal for the life of the animal. In the case of swine or other animals that are typically shipped and managed as groups, a group lot number may be used. This will all be voluntary in the beginning and reporting will develop over time.

Development of ID data collection at packing plants is a high priority at the start of this system. Over time, collection and reporting of data as animal move through auction markets, feedlots or other points will be developed.

The goal of NAIS is to track animals for disease control. The plan for the national system that is being developed is to use it only for that purpose, however once unique animal identification is, available private industry can use those numbers to develop other systems. For example, the XYZ Certified Beef program could use the tag numbers to keep track of point of origin and movement of cattle in its system. As NAIS develops the true value of having animals identified will go far beyond the national program for disease control.

The registration form for obtaining a Premises ID number can be found on the Georgia Cattlemen’s Association web page: http://www.gabeef.org/gca/index.htm

Tim Wilson
Extension Animal Scientist – Beef Cattle

Excitement is the feeling many cow-calf producers express when they market their calves. When evaluating the economics behind cow-calf enterprises, producers profit by marketing calves by weight, genetics and sometimes by both. Although these calves generate most of their income, approximately 10 to 20 % of their gross income can be determined by the price they receive from their cull cows (Gill, TAMU).

Culling is an important component when managing beef cattle and should not be overlooked. Producers who develop predetermined production goals can successfully cull cattle from the herd each year.

As with bulls, cows should be evaluated for soundness. Since calves initially receive their nutrients through milk, the cows' udder must be sound. Cows must also have enough teeth for nutritional maintenance. Failure to adequately supply enough nutrients for the cow can result in reduced subsequent reproductive capabilities. Soundness must be evaluated and considered when culling.

All breeding-age females in a cow-calf operation must be able to successfully wean a calf each year. To do this, these females must deliver a healthy, live calf, provide milk and be able to become pregnant during the subsequent breeding season. To perform each of these tasks, these females must be reproductively sound. Research from Texas A&M reports that if a cow does not breed during a breeding season, she will lose 15 to 20% of her lifetime production potential (TAMU BCM-7). Determining if, or how many times, a female can remain in a herd after she has been determined not pregnant is a decision that must be considered when culling.

Unlike other commodities that change varieties each year, beef cows may remain in a herd for 10 to 15 years. A cow's genetics coupled with that of a herd sire result in a calf should perform above expectations. Cows that produce poor-performing calves should be considered for culling. However, if she has produced excellent calves in the past, it may be the result of the bull. Regardless, decisions related to the performance of the calf should be made to enhance future production potential.

Structural soundness, reproductive soundness and calf performance are just some of the many criteria that producers use when determining which cows to cull. Producers should determine their production parameters and cull accordingly. If you have any questions related to culling beef cattle, feel free to contact your county extension agent or call me at (912) 681- 5639.

Winter annual pasture and heifer reproduction

Johnny Rossi
Extension Animal Scientist - Beef Cattle

Dietary protein levels can affect reproduction both positively and negatively. For average milking cows, crude protein levels of great than 11% are usually adequate for normal reproduction. Some new research has shown that high levels of protein in winter annual forages can reduce reproductive efficiency. Most winter annual pastures (wheat, rye, ryegrass) are very high in protein. When protein is broken down in the cow's rumen it is degraded into ammonia which is then transported to the liver where it is converted into urea. This will increase the blood urea nitrogen (BUN) levels. When BUN is elevated, reduced reproductive efficiency has been observed. It has been shown that the high levels of urea in the blood will reduce the pH in the uterus causing poor fetal survivability in early pregnancy. This has only been documented when cows have continuous access to lush pasture. Reductions in pregnancy rates of approximately 20% have been observed mostly in dairy cows with high levels of BUN.

This can potentially be a problem for producers in Georgia. Producers often plant winter annual pastures to supplement hay during the winter. Many cows calve in the fall and winter months which means that they are rebreeding when the winter annual pastures are available. However, reproductive problems are more likely to occur in heifers due to their need for a higher quality diet than mature cows. Heifers are often allowed to graze winter annual pastures continuously, whereas, older cows are limit grazed. A study conducted at the University of Arkansas compared the reproductive efficiency of heifers grazed on either wheat and ryegrass pastures or fed a drylot ration of 75% grain and 25% hay. Heifers were grazed or fed the grain based ration for five months prior to breeding. Daily gain of the heifers was approximately 1.22 lb/day for each group. Heifers were synchronized and artificially inseminated (AI) once and then clean-up bulls were placed with the heifers for 56 days. There were no statistically significant difference in either AI or overall pregnancy rates between the two groups. However, some trends were noticed in pregnancy rates as overall pregnancy rates for grain fed heifers was 88% and pregnancy rates for heifers that grazed wheat and ryegrass pastures was 69%. Heifers that grazed the winter annuals calved 14 days later than heifers fed the grain based diet during development. Conceiving early in the breeding season is especially important for heifers as this will allow them more time to breed back after having their first calf.

The reduced pregnancy rates from grazing winter annual pastures have only been observed when animals had continuous access to the pasture. Often, cows are limit grazed a few hours a day and supplemented with hay. There should be little or no problems with reproduction when using this feeding strategy. If animals are allowed to graze continuously during the early part of the breeding season then do not feed any supplemental protein. There may be some alleviation of the problem if low protein grains such as corn is fed during this time to increase the use of nitrogen in the rumen, which should lower BUN levels. Research is ongoing in this area.

It is important that heifers reach 65% of their mature weight at the start of the breeding season to ensure heifers are at adequate weights to attain high pregnancy rates. Winter annual pasture may be needed to achieve this weight. If reproductive problems are occurring in properly developed heifers, producers may want to try limit grazing and substituting pasture with hay and/or low protein grains and by-product feeds. This is still much research that needs to be done regarding high protein intakes and reproduction before more definite recommendations can be made.

The ABC's of National ID

Dr. Ronnie Silcox
Extension Beef Specialist

As with any federal program, especially one that involves technology, you will see jargon and acronyms being used. Following are a few of the terms and acronyms used in the National Animal Identification Program:

NAIS - National Animal Identification System. The goal of the National Identification System is to be able to identify all animals and premises that have had contact with an animal disease within 48 hours of discovery. The system covers livestock and working groups are developing plans for alpacas, llamas, bison, cattle, deer, elk, horses, goats, poultry, sheep and swine.

USAIP U. S. Animal Identification Plan. The U. S. Animal Identification Plan was a proposal produced by the National Institute of Animal Agriculture in 2002. It provided the foundation and standards used in the development of NAIS. USAIP is an industry proposal, while NAIS is the federal program.

APHIS Animal and Plant Health Inspection Service. APHIS is an agency of the U. S. Department of Agriculture (USDA). The National Animal Identification System is administered by Veterinary Services (VS), a division of APHIS.

AIN Animal Identification Number. The Animal Identification Number will be the unique number used for the official identification of individual animals. Each number is 15 digits. The first three digits will be the country code and the last 12 digits will be the unique animal number within that country. The first three digits on a U. S. tag will be "840".

AIN Tag A tag with an official Animal Information Number either printed on it or imbedded in it.

GIN Group identification number. In systems where animal are managed together for the entire pre-harvest period a group or lot number may be used. Farrow to finish hog operations, for example, will probably use group identification numbers when shipping finished hogs.

ISO International Organization for Standardization. ISO sets international standards for everything from screw threads to digital coding in video, including standards for electronic ID devises.

ICAR International Committee on Animal Recording. This is an international committee that sets standards on animal records.

EID Electronic Identification. This includes any type of ID devise that can be read

electronically. For cattle the most common uses radio transmissions of a particular frequency. Bar codes are another type of EID.

RFID Radio Frequency Identification. A small chip is imbedded in an ear tag, bolus, implant or other device that is affixed to an animal or object. A radio signal of a particular frequency is used to transmit data (an ID number) to a receiver. For livestock identification the "tag" can be either active or passive. For most applications in livestock the "tag" will be passive, i.e. it will not send out a signal until it is hit by a signal from a reader. It then bounces its encoded information (the ID number) back to the reader. There are active "tags" that send out a signal. These are more often seen in research for tacking animals or for systems like electronic feeders.

ISO Transponder

An electronic ear tag is a transponder. An ISO Transponder is a tag, implant, bolus or other devise that contains a chip that transmits a code when it is activated by a particular radio transmission. For use in horses, transponders can take the form of an implant. For cattle, the most common type of transponder will be an ear tag or button. For use in livestock the ICAR standard is that tags be ISO 11784/11785 compliant. This is very important in a National/International ID system. If all companies use the same ISO standard, tag readers will work for all tags.

ISO Transceiver

A tag reader is a transceiver. A transceiver send out a radio single of a particular frequency. If there is a transponder (tag) that works on the same frequency within a few inches of the transceiver (reader), the transponder (tag) will bounce back its code. An ISO Transceiver is a reader that is ISO 11784/11785 compliant and should read any brand of tag that is an ISO Transponder.

PIN Premises Identification Number. A premises is a farm, feedlot, ranch, auction market or other location that animals pass through in the production system. Each premises will be issued a 7-digit Premises Identification Number. For most producers the farm will require one premises number even if there are cattle, hogs, sheep, horses, etc. all on the same premises.

Officially Identified

An animal is officially identified when a method approved by APHIS is used. The methods used for different types of animals will vary. The term "Technology Neutral" has been used, which means that more than one method will be approved for use. In cattle, most industry focus has been on the use of individual RFID ear tags. In swine and poultry, group or lot ID's will probably be very common. The methods used to be "officially identified" will vary with species.

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WEEK ENDING: 3-03-06 **The Cooperative Extension Service would like to thank Terry Harris for submitting this information.**

GEORGIA CATTLE: RECEIPTS: 10000 LAST WK 10800 YEAR AGO 9000

FEEDERS	STEERS	MED & LARGE 1	HEIFERS
	143.00-179.00	300/350 LBS	128.00-155.00
	135.00-168.00	350/400	121.00-146.00
	125.00-155.00	400/450	117.00-142.00
	120.00-140.00	450/500	112.00-135.00
	110.00-132.00	500/550	100.00-129.00
	108.00-128.00	550/600	98.00-117.50
	103.00-118.00	600/650	90.00-104.00
	95.00-114.00	650/700	94.00-96.00

SLAUGHTER COWS	% LEAN		
	75-80%	850-1200 LBS	50.00-59.00
	80-85%	850-1200 LBS	53.00-63.00
	80-86%	OVER 1200 LBS	45.00-64.00
	85-90%	800-1200 LBS	50.00-59.00

5 Area Daily Wtd Average - Texas/Oklahoma; Kansas; Nebraska; Colorado; and Iowa/So Minnesota Feedlots:
Steers...Select/Choice 65-80% Weighted Average Price Range 87
Heifers..Select/Choice 65-80% Weighted Average Price Range 87.50-88.00

By-Product Drop Value (Steer)...Hide and Offal Value __/cwt.

Box Beef Cut-Out Value Choice 1-3 550/750 LBS. 151.48
Select 1-3 550/700 LBS. 140.70

Georgia Hogs: GA-FL-AL Direct Area Receipts 3700 Trends 3.00 Lower

US 1-2 220/260 LBS. 36.00-38.00 Sows 300/500 LBS. _____ 500-UP_____

FEEDER PIGS	GEORGIA	TENNESSEE		GEORGIA	TENNESSEE
US 1-2 35/40 LBS.			55-60		
40/45			60/65		
45/50			65/70		
50/55			70/80		

IOWA-SOUTHERN MINNESOTA DIRECT HOGS: RECEIPTS _____ TRENDS 1.50 higher
BARROWS & GILTS 49-51% LEAN 185 LB CARCASSES RANGE 52.00-62.50 WTD AVG. 60.13