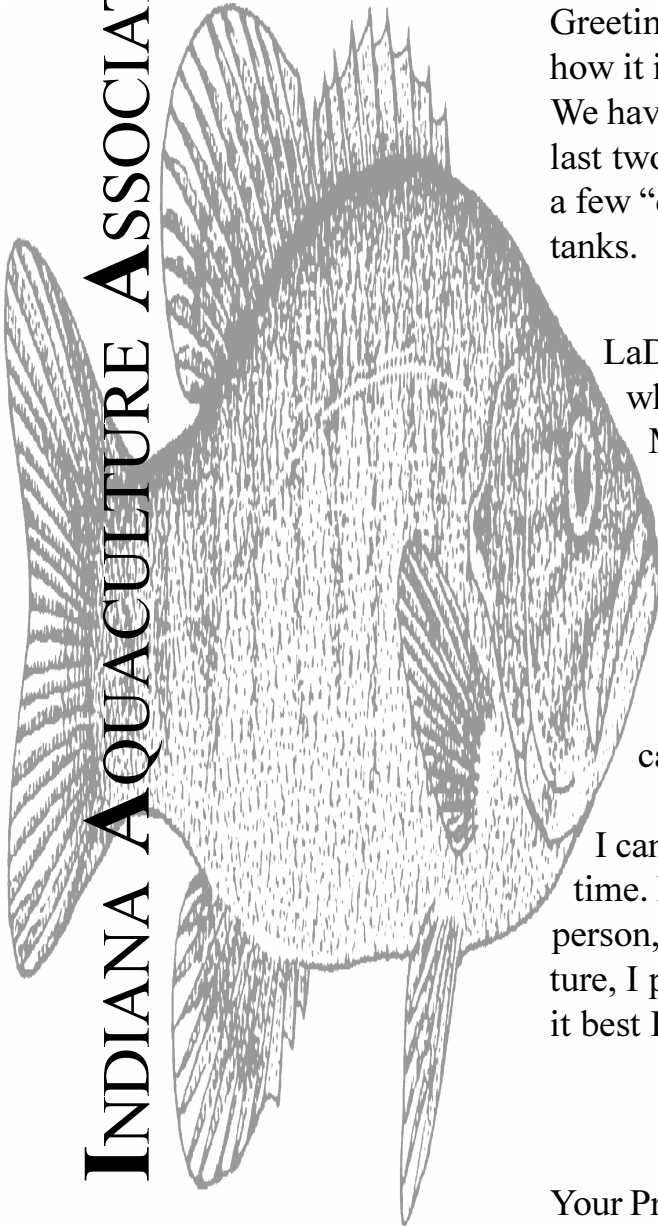


Newsletter

Volume 11 Number 2 1997

INDIANA AQUACULTURE ASSOCIATION



PRESIDENT'S MESSAGE

Greetings, fellow IAA members. I don't know how it is where you are, but it sure is dry here. We have only had about an inch of rain in the last two months. It's been so dry, I've noticed a few "dust bunnies" floating around on the tanks.

LaDon tells me we have a few members who have not kept up with their dues.

Maybe we can take care of this at the fall meeting. This meeting is to be held at Purdue's Aquaculture Lab on Sept. 27. If you cannot be at this meeting and you still owe dues, please contact Chad Nunley. I think the fall meeting will be very interesting and I hope everyone can attend.

I can't think of anything else to say at this time. I do know that if you have met me in person, and we got on the subject of aquaculture, I probably bored you to tears. So, I think it best I go back to work now.

Your President
Jim Bradley

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Calendar

August, 1997

Illinois State Fair, August 8-17, Springfield.

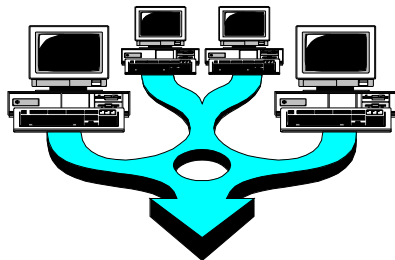
Indiana State Fair, August, 6-17, Indianapolis.

September, 1997

Farm Progress Show, September 23-25.

October, 1997

Indiana Aquaculture Association fall meeting, September 27, West Lafayette, IN, Contact: LaDon Swann, 765-494-6264.



**IAA is Now
on the World Wide Web**
www.ansc.purdue.edu/aquanic/iaa.htm

If you have events you want included in the IAA Newsletter contact: LaDon Swann, Illinois-Indiana Sea Grant Program, 1026 Poultry Building, Purdue University, West Lafayette, IN 47907-1026.

CATFISH CLEARED FOR PROCESSING AND SHIPPING

U.S. Department of Health and Human Services
Public Health Service
Consumer Hotline: (800)532-4440

FDA today informed catfish growers and processors whose fish had consumed feed from five feedmills inadvertently contaminated with dioxin that they may immediately resume processing and shipping catfish. This action is based on newly available data on composite catfish samples from three states (Arkansas, Louisiana and Mississippi) showing that dioxin levels in the samples are below the level of concern.

FDA believes that the quick and successful resolution of this issue is due, in large part, to actions it took earlier this month to stop the shipment and use of contaminated feed. Halting the use of the contaminated feed, and the rapid growth of pond raised-catfish at this time of year, contributed significantly to reducing the levels of dioxin in the catfish that were sampled and tested and which are now coming to market.

The new data on catfish were gathered under a cooperative sampling plan developed last week by the Catfish Institute and the Catfish Farmers of America (industry organizations), several state authorities, and the FDA. Catfish sampling began July 16. Samples were collected from catfish farms known to have used Catfish Processing and Shipping catfish feed from S. F. Services, Greenville, Miss.; Fish Belt

Feeds, Moorhead, Miss.; Arkat Feeds, Dumas, Ark.; Producers Feeds Co., Belzoni, Miss.; and, Top Water Feed Mills, Wisner, La.

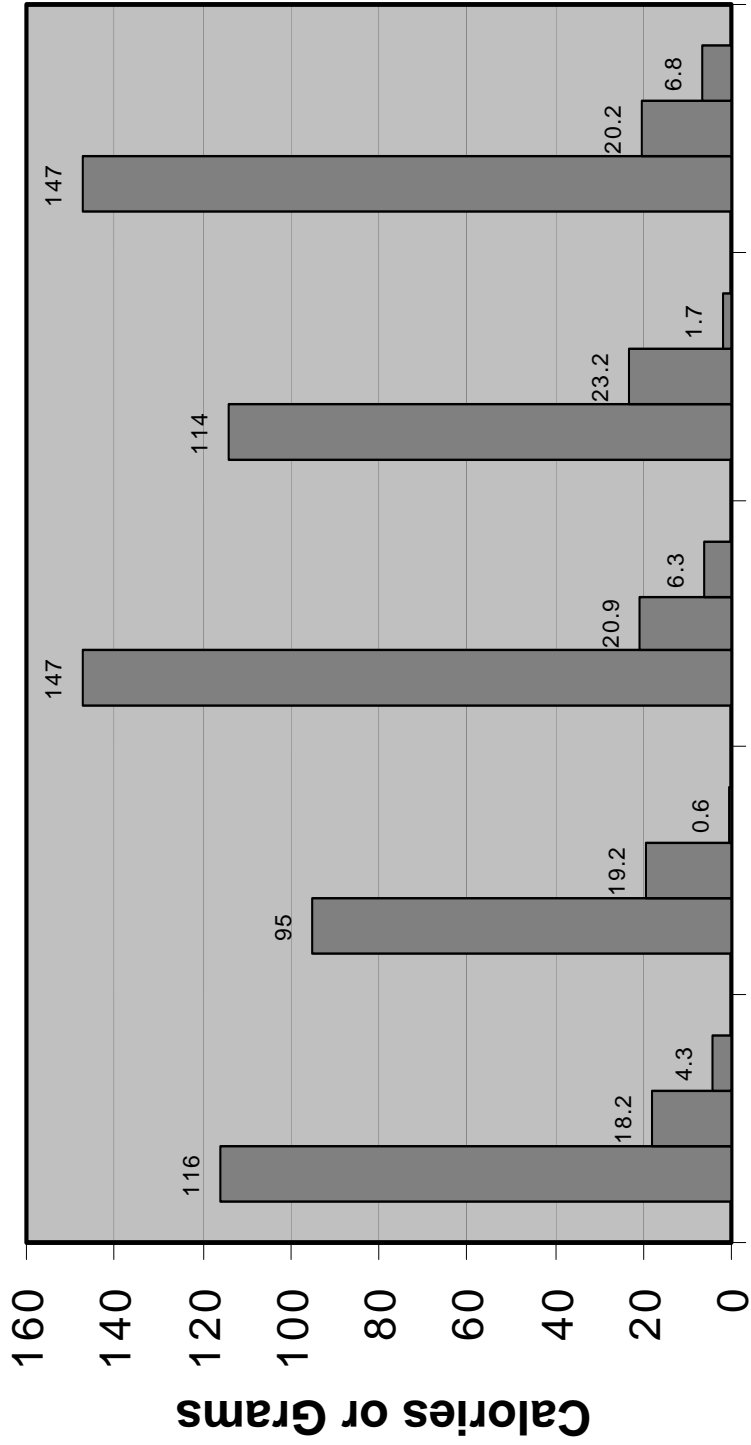
In announcing the resumption of catfish processing, FDA officials emphasized that consumers may continue to eat catfish with full confidence and expressed their appreciation for the close cooperation among catfish growers and processors and the several state agencies involved in this sampling and testing program.

FDA is reminding catfish growers that any catfish feed contaminated with dioxin should not be used. In addition, FDA is recommending that catfish growers and processors keep records concerning the feed sources and shipments of catfish.

The catfish sampling and testing program began after a national survey found elevated levels of dioxin in poultry and catfish samples. The dioxin source was found to be "ball clay" added to soybean meal to prevent caking. The soybean meal had been used in some feed for catfish and chicken. The ball clay was traced to a single clay mine in Mississippi, which, at the request of the FDA, has stopped shipping clay for feed use.

Nutritional Comparisons

■ Calories ■ Protein ■ Fat



Catfish Shrimp Beef Chicken Pork
Species

Grubs in My Fish, Should I Worry?

Summer is the season when most farm pond owners enjoy their ponds the most, either by fishing, swimming, or simply relaxing pond-side. During the peak periods of usage, anglers occasionally find parasites on the fish they catch. They are called “grubs.” Grubs are the most commonly reported parasite living on fish because they are the easiest to see with the unaided eye.

The grubs we see are really flukes (Trematods). The three most common flukes we encounter in our farm pond fish are the yellow grub, white grub, and black spot. When removed from the fish’s flesh and cooked properly, the presence of the flukes do not pose a human health problem.

To better understand the flukes found on farm pond fish, some information on the life cycle of the flukes is necessary. Flukes are parasites that spent part of their life cycle in two or

three animals. To eliminate the parasite you must break the life cycle of the fluke. The animals required to complete the life cycle of the flukes involve birds, and fish and sometimes snails.

The yellow grub is a large grub which spends most of its life in the mouths of herons. When the yellow grub leaves the heron, it invades snails and eventually invades a particular type of snail. When the yellow grubs leaves the snail, it invades the fish and burrows into the muscle of the infected fish. These cyst encased grubs are one of the most commonly found parasite in fish filets.

The white grub is found in the internal organs of sunfish. Since it invades primarily the liver and heart, it is a minor problem for anglers. The grub will be visible as numerous white “specks” in the liver of the fish when they are processed.

The black grub is widely

recognized as black spots on fish. The adult grub lives in the intestine of kingfishers. The eggs of the black grub are deposited into the water in the bird’s feces. Similar to the yellow grub, the black grub invades any variety of snail that inhabits the water. When mature, the black grub leaves the snail and attaches itself to the nearest fish. The black grub is actually white and not black. The black spots are the result of pigment from the fish that surrounds the encysted grub. The black grub is can be found in the fins, under the scales or in the flesh of the fish.

To summarize, grubs have a complex life cycle involving birds, snails and fish. Their life cycle makes it practically impossible to eliminate them from natural waters such as farm ponds. It is not uncommon to find a few grubs on all wild fish. These grubs can not infect humans, but you should clean and cook the fish properly.

Summer Fish Kills in Farm Ponds

Every summer a few farm pond owners experience fish kills in their ponds. While some of the fish kills can be attributed to chemical contamination, most are due to either an algae die-off or a physical process called thermal destratification or pond turnover. Both problems result in decreases

in dissolved oxygen levels in farm ponds.

When the dissolved oxygen levels drop too low, the fish will either die directly from asphyxiation or days later due to disease outbreaks caused by stress associated with low dissolved oxygen.

Cause of Fish Kills

Green plantonic (microscopic) algae are essential to oxygen production in farm ponds. Farm ponds normally have a faint green color, and the water should be clear enough to see around 2.5-3 feet vertically into the pond

water. When there are enough nutrients present in the water, algae “blooms” occur and give the water a rich green or “pea-soup” color. Water clarity decreases as a result of these alga blooms to the point that your hand is not visible in as little as six inches of water. If these alga blooms are followed by periods of cloudy weather, there will be a potential of an alga die-off.

Temperature determines the amount of dissolved gases (oxygen, carbon dioxide, nitrogen, etc.) in the water. The cooler the water the more soluble the gas. Water has a high-heat capacity and unique density qualities. Water has its maximum density at 39.4 F. In spring, water temperatures are nearly equal at all pond depths. As a result, nutrients, dissolved gases, and fish wastes are evenly mixed throughout the pond. As the air temperature increases in the summer, the surface water becomes warmer and lighter while the cooler-denser water forms a layer underneath.

Circulation of the colder bottom water is prevented because of the different densities between the two stratified layers of water. Dissolved oxygen levels decrease in the bottom layer since photosynthesis and contact with the air is reduced. The already low-oxygen levels are further reduced through decomposition of waste products, which settle to the pond bottom.

Summer stratification is a greater problem for fish in deeper farm ponds. Stratification may last for several weeks. This condition may develop into a major fish kill when sudden

summer rains occur. These rains will cool the warmer upper layer of water enough to allow it to mix with the oxygen poor layer below. Decomposing materials in the oxygen-poor layer are again mixed evenly throughout the pond, resulting in an overall reduction in the dissolved oxygen level. Fish previously able to avoid the oxygen depleted layer are now susceptible to low-dissolved oxygen syndrome and possibly death.

Warning Signs

Warning signs of potential “problem” ponds include heavy algae blooms which result in a “pea soup” look of the pond water. Heavy algae blooms coupled with extended periods of cloudy weather or thunderstorms are all that is needed to trigger oxygen depletions. Cloudy weather can lead to algae die-offs while thunderstorms can cause pond turnover.

An early warning sign of impeding problems is a color change in the water from a rich green to a tea color. Another more acute signal will be fish swimming lethargically at the surface of water. The fish may appear to be “gasping” for air. By the time you see the fish at the surface it is usually too late for the farm pond owner. The fish are stressed to the point that some, if not most, of the fish will die. At best only the large fish will die. At worse all of the fish will die.

Prevention

There is no way to avoid pond turn over or algae die-offs. Both are natural processes in

farm ponds. There are, however, a few precautions a farm pond owner can take to reduce the risks. First, follow recommended fish stocking densities. As a rule, farm ponds can support around 300 pound of fish per acre. Second, excessive nutrients in ponds promote aquatic plant growth. By eliminating unnecessary nutrients the farm pond owner lowers the risk of excessive algae populations. Fish feeds contains nutrients which promote algae growth. Even though it is enjoyable to watch fish eat, feeding does increase the risk of excessive algae buildup. Finally, proper control of aquatic plants lowers the risks of a summer fish kill.

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