

Fish Tales Newsletter

West Virginia's Aquaculture Newsletter is produced to help inform, educate, and update those interested in producing quality aquatic products, in a sustainable manner, for the recreational and food fish markets.



The 2004 W.Va. Aquaculture Forum was held on Jan. 17 at WVU's Jackson's Mill Conference Center. More than 100 people preregistered for the event. In the photo, **Mary Beth Gwyer from the Canaan Valley Institute (CVI)** is serving some of *Five Forks* quality fish products for lunch. CVI is involved in developing aquaculture in the state by promoting the higher-value fish products that use West Virginia-grown fish. Behind Mary Beth in the white bandana is **Laurie Adase, owner of Wheeling Aquaculture LLC**, a new company promoting gourmet products. The great-tasting lunch was coordinated by **WVDA's Teresa Halloran** and **West Virginia Aquaculture Association's Amy Cimarolli**.

The meeting began with **Dr. Julie Delabbio** giving the 2003 Aquaculture Update. She told about the progress of two new trout producers, **John Fitzgerald** and **Morgan Sheets**. Both are selling to the recreational markets. Recreational markets was focus of the Forum this year because its economic impact on the state can create more jobs, both directly and indirectly, than an equal amount of fish going to the food market.
(see Forum on page 2)

Ken's Corner

When looking for fish to stock a pond, I hope you consider purchasing from West Virginia fish growers. A "live fish list" featuring contact information for West Virginia vendors of live fish is available on the WVU Extension Aquaculture Web page. (<http://www.wvu.edu/~agexten/aquaculture/index.htm>). The information has also been placed in a simple black-and-white brochure that can be downloaded from the Web and used as a master on a photocopy machine. If you need a copy, ask and we will send you one (or more). Many people purchase small fish from a fish truck that they meet at a local farm store. These vendors are from Arkansas and will not deliver fish directly to you. The fish they sell may have been on the truck a long time. Occasionally, the local office of the State Soil Conservation District will arrange a fish day where fingerlings are available from a fish truck that usually comes from a farm in Ohio. Please spread the word that there are West Virginia vendors selling fingerlings and food-size goldfish, trout, koi, catfish, bluegill, (continued on last page)

1^o - 2^o - 3^o on Wastewater Treatment

Primary Treatment

This involves the separation of solid waste material from the water. It is most commonly done using settling ponds or mechanical filters. The particles that are removed in settling ponds are the larger ones (>120 microns) that will settle to the bottom within an hour or so. By concentrating and removing solids as soon as possible, you will reduce the breakup of waste into smaller particles, which are more difficult to settle. Very little maintenance is needed for settling ponds, but they require more space than mechanical filters. Drum and sand filters use electricity to mechanically separate particles as small as 60 microns from the water, using very little space. They are more practical with indoor operations, under strict discharge regulations.

Secondary Treatment

This step involves the reduction of dissolved waste in the water. Ponds will also provide limited secondary treatment because they contain the same natural bacteria that are concentrated in biological filters, such as fluidized bed filters, bead filters, and trickle filters. Ammonia is excreted by fish and is toxic in low concentrations. Certain natural bacteria use ammonia as an energy source and convert it to nitrite, which is also toxic, and then into nontoxic nitrate in a two-step process. Recirculating systems commonly have biological filters to convert ammonia into nitrate. Ammonia production is directly related to the feeding rate. Protein skimmers also remove dissolved organic debris and pollutants. When designed properly, they are low-maintenance water-quality enhancers. Counter-current skimmers are most efficient. Ozone can be used with protein skimmers as a form of tertiary treatment. Ozone will increase the efficiency of a protein skimmer.

Tertiary Treatment

Most aquaculture systems do not employ tertiary treatment because it is expensive and not required to meet most discharge regulations. **This process reduces the pathogenic or chemical concentration in water by killing bacteria, viruses, mold, fungi, and algae.** Ultraviolet radiation (UV), chlorine, and ozone are the most common methods used. Selecting any of these methods will depend on regulations, economics, and safety. UV light is most commonly used, in part, because it is safer to use around humans, and it does not require the neutralizing step that is needed for chlorine and ozone. Commercially built tertiary treatment systems can be designed for the needs of almost any aquaculture production unit. Ozone can damage the lining of the lungs, so detectors are usually required for the safety of personnel.

Dr. Cy Logar presented research showing that most visitors to our state are interested in outdoor activities. They tend to be older, in the upper income level, and willing to try package trips that include various private fishing tours in the surrounding area. With 32 fee fishing sites in the state and many other sites that have good potential, there are opportunities for giving tourists what they want – a quality recreational fishing experience without the hassle of finding the quality fishing holes.

Assistant Professor from WVU's Division of Forestry, **Dr. Chad Pierskalla**, presented results from his research, which included fishing events at private ponds. As an industry, this kind of activity needs to be promoted because it gives both local residents and visitors an opportunity to relax and enjoy the natural resources in our beautiful state. Visitors create jobs when they fish, eat, and sleep in the area, and producers know that the recreational market pays more than the food fish market – and that helps the bottom line.

The West Virginia DNR was represented by **Frank Jernejcic**, who was a member of a panel that discussed some of the practical aspects of raising fish.

WVDA's Fish wagon, seen in a previous issue of this newsletter, was on hand to provide local Arctic char fish sandwiches for all participants. **Paul Lovett and the Monroe County FFA club** prepared the 100-plus sandwiches in the now famous, healthy fish wagon.

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hybrid bluegill, hybrid striped bass, largemouth bass, grass carp, etc., that are suitable to stock in ponds across the state. Please consider encouraging others to look beyond the feed store fish trucks and support our West Virginia growers. It will help build our aquaculture industry. You may even get stronger fish and/or a better deal.

We are looking for articles by W.Va. producers. Please contact Dan Miller at 304-293-4832 ext. 4465
We encourage everyone to become active in developing the aquaculture industry in West Virginia.

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