**Common aquatic herbicide shows promise in fish health: A case study**

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 Fish health professionals in Kentucky are able to identify and recommend treatment for fish health concerns to reduce morbidity and mortality of fish including those raised on farms. Fish diseases affect commercial aquaculture production, and significant losses may result. Fish pathologists at the Kentucky State University Fish Disease Diagnostic Laboratory helped significantly decrease fish mortality by accurately identifying pathogens and making proper treatment recommendations.

 KSU FDDL staff advised a producer in August and September 2020 regarding mortality and abnormal swimming behavior in largemouth bass (*Micropterus salmoides*). After several antibiotic treatments were administered unsuccessfully, two parasitic protozoans and external bacteria were identified as the mortality causative pathogens. Three treatment recommendations were made, and those results were reported.

 Salt (NaCl) and copper sulfate (CuSO4) were applied at rates of 4 g/L and 4 mg/L, respectively. Follow-up examination of fish from the same population showed improvement in the gill tissues and no parasitic protozoans after 5 days. Columnaris, a disease caused by the bacterium *Flavobacterium columnare,* was identified in the follow-up exam. Harvester® herbicide (active ingredient diquat dibromide) was used and mortality was dramatically decreased.

 The aquaculture industry has expressed interest in the use of the chemical diquat dibromide as a water cleanser for years. Lab trials have decreased columnaris associated mortality in walleye (*Sander vitreus*) using diquat (Bowker et. al. 2016). However, clinical and toxicological research are limited for its value in largemouth bass production.