Measuring Oxygen in Crawfish Ponds

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Low dissolved oxygen is the only significant water quality issue that each and every crawfish farmer can expect to deal with on an annual basis. If you farm crawfish, you will have low oxygen in your ponds at some point in time. Most serious oxygen problems occur after 1 to 2 months after flood-up in the fall, and later when we transition from winter to spring. At its extreme, low oxygen will kill crawfish by suffocation. More commonly low oxygen stresses crawfish, reducing growth. Stress associated with low oxygen has the potential to induce outbreaks of diseases, and it contributes to reducing the shelf life of live crawfish in the cooler. Oxygen concentrations of 1 part per million (ppm) or less sustained daily over a few weeks will kill crawfish. Concentrations of 1 to 2 ppm are stressful. Ideally oxygen should remain above 2 or 3 ppm for optimum growing conditions. Information on measuring oxygen, where in your pond to measure, and general management of oxygen and or water quality factors is discussed in Chapter 7 "Water Quality and Management" in the" Louisiana Crawfish Production Manual". If you do not have a copy of the production manual contact your LSU AgCenter county agent to obtain one.

Oxygen can only be accurately determined by measurement. Oxygen can be measured with chemical test kits or meters. Each method has its advantages and disadvantages.

Oxygen Test Kits:

Advantages: inexpensive (usually less than $50), sufficiently accurate for management decisions, chemicals have a long shelf life, does not require maintenance, maybe the best economical option on small farms

Disadvantages: more time is required to take measurement, chemical reagents must be continually replaced (most kits provide chemicals for 30 to 100 measurements)

Oxygen Meters:

Advantages: accurate (when calibrated properly), ease of use, many measurements can be taken quickly, does not require continual purchase of replacement chemicals, maybe the best option on large farms where many measurements must be taken, will last many years if properly cared for and maintained

Disadvantages: expense ($600-1,000), requires calibration before use, requires minor maintenance to keep it operating properly.

Question: Do I need an expensive oxygen meter?

Answer: It depends on your frequency of use, your needs for reliability, the importance of accuracy, and what value you place on your time. If your crawfish farm is large and crawfish farming is a significant part of your livelihood, the use of the more expensive oxygen meters may have significant advantages. If you will be measuring dissolved infrequently or are spot checking from time to time, an oxygen chemical test kit will be adequate. LSU AgCenter aquaculture and fisheries extension agents and specialists have experience and knowledge of most brands of oxygen test kits and meters and they can provide you additional information if you would like to contact them.

Dissolved Oxygen Chemical Test Kit and Meter Suppliers

The following is a list of major manufacturers and distributors of oxygen chemical test kits and dissolved oxygen meters frequently used by aquaculture producers, including crawfish farmers, in the South. Chemical test kits can usually be purchased directly from the manufacturer or through their distributors. Many companies that manufacturer oxygen meters sell them only through distributors. Check the internet for other suppliers and distributors of oxygen test kits and meters. *Note: Mention of trade names or businesses or use of photographs does not constitute endorsement on the part of the LSU AgCenter, nor does it imply that other similar products or services are inferior or superior.*

Aquatic Ecosystems 2395 Apopka Blvd, Apopka, FL 32703 1-877-347-4788 www.aquaticeco.com Test Kits by Hach, and LaMotte Oxygen Meters by YSI, and Pinpoint Repair service available for YSI meters (catalog available)	AquaCenter 166 Seven Oaks Road, Leland, MS 38756 1-800-748-8921 www.aquacenterinc.com Test Kits by Hach, and LaMotte Oxygen Meters by YSI Repair service available for YSI meters (catalog available)
CHEMetrics, Inc. 4295 Catlett Road, Calverton, VA 20138 1-800-356-3072 www.chemetrics.com Oxygen Test Kit #C-7512 (1-12 ppm, 1 ppm increments); Refills for Kit is #K-7512 (catalog available)	Forestry Suppliers 205 West Rankin St, Jackson, Mississippi 39201 1-800-647-5368 www.forestry-suppliers.com Test Kits by CHEMetrics, and LaMotte Oxygen Meters by YSI (catalog available)
Hach Company PO Box 389, Loveland, CO 80539 1-800-227-4224 www.hach.com Test Kits, Oxygen Meters (catalog available)	LaMotte 802 Washington Avenue, Chestertown, Maryland 21620 1-800-344-3100 www.lamotte.com LaMotte oxygen test kits and LaMotte oxygen meter (catalog available)
Mr. Shelton Lee LA-Mar-KA Baton Rouge, Louisiana 1-800-826-5959 sheldon@lmkchemical.com CHEMetrics oxygen test kits	