

Crawfish News

January 2008 Volume 1 Number 1



Baits and Baiting Recommendations

With the holidays behind us, most producers are now turning full attention toward harvesting their crawfish crop. Although many producers have been harvesting since November, most farmers begin harvest in earnest after January 1. In the November 2007 newsletter we discussed preparations for harvesting crawfish and provided recommendations on trap densities and spacing.

Let's discuss bait and baiting issues. Bait, which is required to attract crawfish into traps, is for many producers either the number 1 or 2 variable expense in farming crawfish, labor to harvest or pumping cost being the others. Bait costs vary from producer to producer, but it all boils down to the type of the bait used, the amount used per trap, trap density and how often you run your traps. Other than the price of bait, you as a producer have control over all aspects of bait

management. Small improvements in baiting and trapping efficiency can mean big savings in expenses and increased profit. It is not unreasonable to potentially reduce bait and associated labor cost \$25 to \$100 per acre over a crawfish-harvesting season by using efficient baiting and trapping strategies.

As you know, two types of bait that are used include natural fish baits – such as shad, poggy, buffalofish and carp – and formulated baits that are manufactured by several feed companies. The main considerations are what type of bait to use during the winter and spring, how much bait should be used per trap and how long the trap should remain in the water after baiting to maximize crawfish catch and size of crawfish at harvest. Fish baits, such as menhaden (“pogy”) and shad, are more effective attractants than formulated baits at colder water temperatures, usually below 65°F to 70°F, and when forage is abundant, which generally is November through March.

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What's New

Entering 2008, we are bringing a new look and additional content to the LSU AgCenter's crawfish newsletter. The first change you will notice is a new look. The newsletter will have more content and we will include photos and graphics to better illustrate topics in future issues. In the past, newsletters have been distributed quarterly – four times a year. With this first newsletter of 2008 we will be providing you a newsletter bimonthly, with January, March, May, July, September and November issues. Special-edition newsletters will be sent as needed to notify you of urgent industry matters that might not be able to wait until the next newsletter.

Upcoming meeting announcements will be included, as will a “frequently asked question” section, some basics on crawfish biology and ecology, and industry news and updates. It is important to us that we hear from you on what topics that you would like to have included in future newsletters. Contact information is provided at the end of this newsletter, and we hope you will provide us feedback on how we can best serve you to meet your information needs.

Visit our Web site:

www.lsuagcenter.com/en/crops_livestock/aquaculture/crawfish



Commonly used crawfish baits: (top) gizzard shad, (middle) menhaden or “pogy,” and (bottom) formulated baits.

Baits and Baiting Recommendations

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What Makes the Most Profit in Cold Water – Shad or Formulated Bait?

As the following example illustrates, if your catch is substantially higher with fish bait compared to formulated bait, your profit is likely to be higher using fish as bait, even though fish is a more expensive.

Shad	Formulated Bait
3/4 lb crawfish/trap x \$1.00 = \$0.75 crawfish/trap	1/2 lb crawfish/trap x \$1.00 = \$0.50 crawfish/trap
1/3 lb bait/trap x \$0.34 = \$0.11 bait/trap	1/3 lb bait/trap x \$0.20 = \$0.07 bait/trap
Minus \$0.10/trap labor per trap	Minus \$0.10/trap labor per trap
\$0.54 “profit” per trap	\$0.33 “profit” per trap

Should you find that less expensive formulated bait is as effective in cold water as the fish you may be purchasing, then by all means use the formulated bait, but generally this is not going to be the case. When water temperature exceeds 70°F to 75°F and ponds become depleted of vegetative forage (usually corresponding to late March to early April in South Louisiana), formulated baits become equally effective or more effective than fish baits, and they become the most cost-effective baits. At water temperatures of 65°F to 75°F, a combination of fish and formulated bait added to traps in about equal portions can increase catch as much as one-third over fish alone or formulated bait alone; however, the logistical inconvenience of handling two baits at the same time in harvesting boats must be considered when employing this strategy.

How Much Bait Per Trap?

During winter when crawfish feeding is minimal and the number of harvestable crawfish in ponds is still relatively low, research studies show that 1/4 pound of bait per trap is usually sufficient to harvest available crawfish. This is true for both fish and formulated bait. When waters warm in the spring and the crop of harvestable crawfish nears maximum levels, the quantity of bait should be increased to about 1/3 pound per trap. Although an increase in the amount of bait per trap over 1/3 pound may increase crawfish catch, the value of the additional crawfish may not compensate for the increased bait cost.

Although it is not practical to portion bait into each trap carefully, farmers can gauge and monitor bait use by keeping good records on the total quantity used for the number of traps in a pond or the farming operation. For example, when using 1/3 pound of bait per trap per day, an 80-pound box of fish bait should be sufficient to bait 240 traps (80 lbs bait ÷ 0.33 lb/trap = 240 traps). If only 150 traps are baited, too much bait is being used. A 50-pound bag of formulated bait is sufficient to bait 150 traps (50 lbs bait ÷ 0.33 lb/trap = 150 traps).

The fisherman should pay attention to the amount of bait remaining in the trap. If significant bait residue remains in the trap, the amount can be reduced. If bait is rapidly consumed and little or no bait remains in the trap, consideration can be given to increasing the amount of bait. Fresh bait should be used each trapping day, especially with fish baits. To maximize crawfish movement to freshly baited traps, we recommend that bait residue not be disposed of in the pond.

Trap Soak Time?

Normally, traps are emptied 24 or 48 hours after baiting. The 48-hour soak time (every-other-day trapping, or 2-day sets) is generally as effective and sometimes more effective than a 24-hour soak (daily trapping, 1-day sets) when water temperature is cold and the natural food supply is abundant. This is particularly true when using formulated

baits. Every-other-day trapping also has the advantage of usually catching larger crawfish than every-day trapping, because smaller crawfish more easily escape from the trap the longer it remains in the water. When water temperature warms in the spring, 1-day trap sets will usually catch significantly more crawfish than 2-day sets.

Crawfish Biology



Biology lessons are often helpful for crawfish farmers to understand some of the underlying reasons why crawfish behave the way they do and why we manage ponds in certain ways. Beginning with this newsletter we provide some very basic information on crawfish biology and ecology.

Commercial Species of Crawfish in Louisiana

Despite some misperceptions to the contrary, there are only two commercial species of crawfish found in the Louisiana crawfish industry. The red swamp crawfish (*Procambarus clarkii*) dominates and is found in the Atchafalaya River Basin and probably in every crawfish pond. The white river crawfish (*Procambarus zonangulus*) is also found in catches from the Basin but is also found in many commercial ponds. Though Basin fishermen often refer to this species as “deep water crawfish,” it is the same species found in some crawfish ponds. The appearance of these two commercial species can be very similar to the untrained eye, especially as juvenile crawfish, but there are some distinct differences.

The red swamp crawfish will usually have a dark-pigmented stripe running the length of the tail (abdomen) as viewed from underneath, whereas the white river crawfish will not. The reds will also usually have some red pigment (hence the name) visible on the exoskeleton (“shell”), especially on the tips of the claws. The white river crawfish may appear

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Adult white river crayfish (*Procambarus zonangulus*), left, have longer, narrower claws than do red swamp crayfish (*Procambarus clarkii*), right.

Crayfish Biology

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light colored to orange-brownish at times but will not have red pigment. In mature animals, the claws of the whites will be longer and narrower than those of the reds. Certain other morphological structures (such as reproductive organs) are also different for these (and other) crayfish species, and these are what biologists key in on to differentiate species.



Red swamp crayfish (right) will also usually have a dark pigmented line visible on the underside of the abdomen, whereas white river crayfish (left) do not.

These two crayfishes are similar in size and have similar ecological and biological requirements. One major difference is that while the red swamp crayfish may reproduce at any time of the year in the South, the white river crayfish are seasonal spawners, laying eggs once per year in the fall. This may explain why populations of the white river crayfish are usually found in greater numbers in ponds that are in production during two or more consecutive seasons because populations of seasonal spawners have more of an opportunity to expand when natural cycles are not interrupted. Contrary to some beliefs, these two species do not cross breed, as no hybrid has ever been scientifically documented.

Frequently Asked Questions

Question: *Winter Algal Scum Problem. Help please. I have a crayfish pond with green slime floating on the water's surface. It was no problem till this last week, when I had several traps with dead crayfish. How do I get rid of it? What's the cause of crayfish death - lack of oxygen?*

Answer: That type of slime is an algae, usually *Spirogyra*, that grows well in clear, shallow water, especially if the vegetative forage is sparse and sunlight penetrates to the pond bottom. The algae often coats traps and clogs entrance flues (funnels) restricting crayfish catch. This algae, which is slimy to the touch, is a winter (cool season) algae that will diminish on its own as the weather warms in the spring. It will float to the surface and when exposed to bright sunlight at the surface will turn brown and die. "Muddying" the water by running the

crayfish boat helps reduce the growth of the algae by reducing sunlight to the pond bottom. Also if you have a good crayfish population, they will keep the water muddy, which reduces the severity of the algae. We find algal scum problems more frequently in ponds with low crayfish densities and high levels of fertilizer use. Copper sulfate is a chemical that is used in fish ponds for algae control but we **do not recommend** its use in crayfish ponds. Other than muddying up the water, there is not much you can do to control the algae, but in time it will disappear on its own. Why are crayfish dying in the traps? During sunny days, the algae produce oxygen. But, at night and during foggy or cloudy/rainy days, the algae consume more oxygen than it produced during the previous day and, therefore causes low oxygen.

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Additional information on crawfish aquaculture is available on the LSU AgCenter Web site at

www.lsuagcenter.com/en/crops_livestock/aquaculture/crawfish

To receive the online full-color version of "Crawfish News" send an e-mail to rdjohnson@agcenter.lsu.edu with "SUBSCRIBE CRAWFISH NEWS" in the subject line. There is no need to re-subscribe to the online version if you already receive it. To be removed from the electronic mailing list, write "UNSUBSCRIBE CRAWFISH NEWS" in the subject line.

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Industry News

The Louisiana Crawfish Farmers Association hosted two successful meetings at the Rayne Civic Center, Rayne, La., in October and November. The October 25 annual membership drive meeting was attended by more than 400 producers and affiliated members. Dr. Ron Harrell, Louisiana Farm Bureau, was honored by the LCFA leadership for his many state and federal legislative efforts on behalf of the crawfish farming industry. Membership in the LCFA now totals more than 950. The November 6 Crawfish Expo was attended by more than 500 individuals. Fifty-one vendors had booths at the Expo.

Dr. Michael Strain, Louisiana Commissioner of Agriculture and Forestry-elect, was the guest luncheon speaker. Dr. Romaine, Dr. McClain, Mr. Shirley and Mr. Johnson of the LSU AgCenter conducted an educational program at the Expo, discussing cost-effective harvesting and conducting a general question-and-answer forum.

Upcoming Crawfish Producer Meetings

LSU AgCenter extension and research personnel will conduct six crawfish producer meetings in February. The agenda will include Efficient and Economical Pumping Strategies, Springtime Crawfish Pond Management Concerns, Record Keeping, White Spot Syndrome Virus Update, Industry Update, and Your Questions – Our Answers.

Crawfish Producer Meetings

Date	Parish	City	Address	Time
February 19	Vermilion	Abbeville	AgCenter Parish Extension Office, 1105 W Port Street	6 PM
February 20	Winn	Winnfield	AgCenter Parish Extension Office, Courthouse Bldg, 6562 Main Street	1 PM
February 21	Jeff Davis	Jennings	AgCenter Parish Extension Office, 1006 S. Lake Arthur Avenue	1 PM
February 21	St. Martin	Breaux Bridge	AgCenter Parish Extension Office, 114 Courthouse St	6 PM
February 28	Avoyelles	Hamburg	Agriliance LLC, 12265 Hwy 1	9 AM
February 28	Evangeline	Ville Platte	AgCenter Parish Extension Office, 230 Court Street	6 PM