Crawfish News

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Forages and Forage Planting for 2008-2009 Crop Year

With summer draw-down of ponds under way or nearing, many producers are preparing for next season by planning their forage crop strategies. Producers who farm crawfish behind a rice crop have fewer decisions to make, because their forage needs will be met by the established rice crop. Farmers who produce crawfish in ponds dedicated only to crawfish must first decide whether to plant a forage crop or rely on volunteer native stands of weeds and grasses. When it is anticipated that crawfish population density will be moderate to high, it is almost always advisable to establish a crop of planted forages such as rice or sorghum-sudangrass. Volunteer vegetation is often unpredictable in the amount and type that will be produced, and most volunteer stands are less desirable than planted stands, especially when crawfish populations are high. To achieve adequate stands of a planted crop, care should be given to the best timing and method of planting, as well as the type of forage to be planted.

For the most part, rice is the preferred crop to use in a crawfish pond, even when there is no intention of harvesting the grain. Sorghum-sudangrass hybrid can be an acceptable substitute for rice, such as when irrigation water is difficult to obtain during the summer and/or when the optimum window for rice planting has passed. But sorghum-sudangrass may be a poor choice if not managed properly. Rice is more forgiving, but it can sometimes be difficult to get a good stand of rice in the heat of summer. Whether planting rice or sorghum-sudangrass, time of planting is critical. In South Louisiana, the best time to plant rice is within the first two weeks of August, and for sorghum-sudangrass, within the last two weeks of August. Planting earlier will usually result in grain formation, an undesirable condition (unless waterfowl management is important). A later planting may result in reduced tonnage of forage produced.

Because Ecrevisse, the rice variety developed several years ago specially for use in crawfish-only systems, may not be commercially available any longer, it will be necessary to plant common domestic varieties in crawfish ponds. Although the level of management typically has more influence on the quality of the forage crop, the medium-grain varieties in general may have a slight edge over long-grain varieties in a crawfish pond, but this may only be advantageous at the highest density of crawfish and under the best management levels. A mixture of rice varieties may even be better than planting a single variety.

Stand establishment is the key to any good forage crop. Having good seed contact with the soil is the first requisite to achieving a good rice stand, and that typically requires a prepared seed bed. Because it may be difficult to achieve a good stand in the heat of summer, especially when the pond bottom is not level and contains pockets or "pot holes" that do not drain well, it is best to avoid water seeding unless one is experienced at planting this way. Broadcasting dry seed on a tilled seedbed and mulching or covering the seed slightly is often the best approach, especially when rainfall is adequate and occurs frequently enough to avoid flushing (irrigating) the field. As with water seeding, when large areas of the pond retain puddles of water from irrigation during August, the water may be sufficiently hot to prevent or destroy stands of rice. However, irrigation may be needed if timely rains do not occur after planting. As with any crop, fertilizer needs must be met, and damaging insects, such as army worms, must be controlled. But rice fields for crawfish do not have to be as weed free as for grain production. Some aquatic weeds are acceptable and may even be desirable as long as they do not get out of control. ●

For more detail on crawfish forage management and planting recommendations, see the Louisiana Crawfish Production Manual or contact your LSU AgCenter county agent.

Late-planted rice (left) and sorghum-sudangrass (right) forages planted in a crawfish monocropping system.

LSU AgCenter Research & Extension

Should I Lime my Crawfish Pond Prior to Planting My Forage Crop?

We are frequently asked if there is a need to lime crawfish ponds prior to planting the forage crop. Agricultural limestone contains calcium and carbonate minerals. Crawfish have a need for calcium for shell formation, and some think that harvesting of crawfish from ponds over several or more years will eventually deplete the water and soil of calcium leading to reduced crawfish production. This is not likely to happen, and here is why: Crawfish are about 5 percent calcium. If you harvested 1,000 pounds per acre of crawfish you would remove 50 pounds per acre of calcium from the field. If hardness of the water in which crawfish are being grown is 120 parts per million (ppm) – which is a good average concentration for crawfish ponds in Louisiana – that water will have a calcium level of about 50 ppm. For ponds that average 12 inches of water, the concentration of calcium in the water would be 136 pounds per acre. This is three times higher than the amount of calcium that would be removed from harvesting the crawfish crop. Furthermore, agricultural soils in south-central and southwest Louisiana usually have calcium levels 20 to 50 times higher than calcium levels in the water. If calcium levels in the water are reduced, calcium will move from the soils into the water to replenish that which has been depleted.

Some additional negative consequences come from liming crawfish ponds when it's not needed. Rice is an "acid-loving" plant that grows best at soil pH below 6.0. Adding agricultural lime in excess of what is considered optimal for the rice crop will increase soil pH, thereby potentially reducing grain yield as well as the crawfish forage and food supply. As a crawfish farmer, you should know the type of soil, the soil pH, the hardness and alkalinity of the water, and type of plants that will be grown in the pond in current and future years before considering applying agricultural limestone to a crawfish pond or a rice field that will be used for crawfish. County agents with the LSU AgCenter will assist you in obtaining this information.

So what is the bottom line on liming crawfish ponds? We do not recommend crawfish ponds and rice fields used to grow crawfish be limed unless a water and soil analysis specifically shows that it is needed for the forage that is being planted. Contact your local LSU AgCenter extension office for instructions on collecting and submitting water and soil samples to the LSU AgCenter's Soil Testing and Plant Analysis Laboratory for analysis. County agents or crawfish specialists in the LSU AgCenter can assist you in interpreting the findings and making a decision to lime or not. For more information on this subject, read the article "Should I Lime My Crawfish Ponds" on the LSU AgCenter crawfish Web site: www.lsuagcenter.com/en/crops_livestock/aquaculture/crawfish/Water+Quality++Management/Liming+Crawfish+Ponds.htm

Stocking Recommendations for 2008-2009 Production Season

Stocking new or idle crawfish ponds is one of the least expensive items in crawfish production, and yet it's the most important factor in you producing a crawfish crop next season. Using poor-quality stock and not handling stock properly after you obtain them is a recipe for crop failure.

Stocking New Ponds

Newly built ponds or older ponds that have undergone significant renovation (re-building and compacting levees) should be stocked with a minimum of 50 to 60 pounds of mature, healthy crawfish per acre. In some cases though, more may be necessary. Newly constructed ponds with little or no grass cover on the levees increases mortality of crawfish by predators (birds, raccoons, etc.). On the other hand, stocking into rice fields once the rice is 10 inches tall with plenty of grass on the levees greatly improves the chances of survival because the crawfish can hide under the vegetation while burrowing.

Stocking Existing Ponds

Mono-cropping (permanent) ponds that had an acceptable yield do not need any additional stock. There should be numerous mature crawfish by this time, and if you have not yet drained, burrowing should be evident on the edges of the levees. Adding more stock to an existing pond that had an acceptable yield could lead to over population and small crawfish next season. On the other hand, if your pond did not produce a commercial harvest this season, you should probably consider adding a sack per acre (35 to 45 pounds) as insurance for next year.

If your crawfish have been small all year, stocking large crawfish into the pond will not improve the size for next year. Small crawfish are the result of overcrowding or poor growing conditions. Adding more stock is not the solution in this case and will only exacerbate the problem.

Stocking Procedures

Successful spawning in the fall is the objective of stocking. Do what you can to help the stock survive until then. Avoid doing things that may cause higher mortality.

- May to June is the preferred time to stock, although stocking in July may be possible. The hotter the water, the greater the likelihood of stress to the stockers.
- New or idle crawfish ponds should be stocked with 50 to 60 pounds of crawfish per acre.
- Add more if pond (or crawfish) conditions are questionable and less if some crawfish are already present.
- Move the crawfish into the new pond as soon as possible. The survival rate goes down the longer they are out of

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water, especially during hot weather.

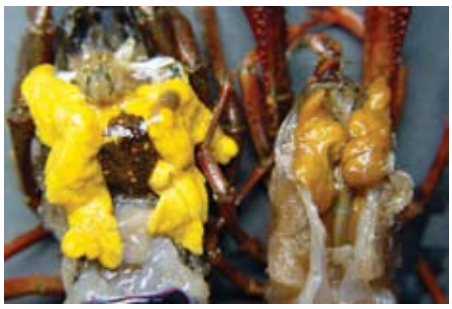
● **Do not** use crawfish that have been stored in a cooler because survival tends to be low.

● Use only red swamp crawfish.

● Keep the stocker crawfish covered with a wet burlap tarp during transport to minimize stress.

● Check the sex ratio to be sure you have enough females, and check the egg development of a few from each source. Be sure at least 50 percent are female – this will usually be the case. Some females with tan to brown eggs are good and particularly important if the pond must be drained quickly. Females with white or yellow eggs are immature, but these are acceptable to stock if the pond will not be drained for up to several weeks. This will allow them to mature and mate before burrowing.

● Ideally, get stock from several different ponds or sources to insure that at least some will have good egg development and are obtained from "stress-free" ponds. If you put all your eggs in one basket and happen to get bad stock from a single supplier, crop failure may be the result. Ideally, obtain crawfish from white spot virus-free ponds.



Female crawfish in good condition (left) and poor condition (right).

● Use healthy crawfish. Check for bright yellow fat in the head as an index of well-conditioned females (See photo).

● Basin crawfish are not superior to pond crawfish for stock; however, the incidence of crawfish infected with white spot virus may be lower in basin crawfish. Crawfish from the basin may have a higher percentage of white river crawfish, which is not desirable. Check your source for white crawfish before you purchase.

● The size of the crawfish does not indicate how big the offspring will get. In other words, don't spend more to buy large crawfish for stocking. Maturity is the key.

● In large ponds, stock crawfish over several days or weeks instead of all at once. Hold water as long as possible after stocking to allow crawfish to initiate burrowing on their own. If at all possible, do not drain fields for at least 2 or 4 weeks after stocking to allow immature crawfish to continue to mature and to allow crawfish to recover from the stress of re-stocking before expending energy on burrowing.

● Stock all sections of the pond and place crawfish directly in the water, not on dry ground.

Unfortunately, you will not know how successful your stocking effort will be until after you plant forage in August, flood up in October and set out traps in November or December.

Draining Ponds after Stocking

When crawfish are mature they will begin to burrow even if the pond is flooded. This is why, if you observe carefully, you may see some burrowing activity in all months of the production season. Ideally, it is best to keep water in the pond until you observe active burrowing at the water-levee interface and then drain the pond in stages over several weeks. This should insure that mature crawfish that will produce young by fall flood-up have successfully burrowed. Although not proven by research, we feel it may be best to drain a portion of the water, hold it at that level for a while, and then repeat the process until all water has been removed. Holding the water level somewhat constant between water releases may assist crawfish in establishing burrows rather than being stranded high and dry before the burrow can be completed.

If your pond is newly constructed or renovated and the levees are hard and compacted, keep water in the pond as long as possible to soften the levees to aid the crawfish in burrowing. Ponds that were overpopulated with stunted crawfish should be drained as quickly as possible to strand and kill as many crawfish as possible.

For more detail on crawfish stocking, see the Louisiana Crawfish Production Manual . ●

Frequently Asked Questions

Question: Is there a need to restock crawfish ponds after re-working the levees?

Answer: Since crawfish do not construct their burrows underwater, especially during the hottest part of the season, any brood female that becomes ready to burrow before pond draining in the summer will burrow on high ground at or near the water's edge. This usually means the levees in most crawfish ponds. Research has shown that even moderate levee renovation can impact the survival and/or emergence of crawfish that are burrowed into the levee. When the burrow entrance is destroyed and compacted or additional soil is deposited on top, this can compromise either the ability of the burrow to hold water during the dry period or the female's ability to emerge with young after spawning. Therefore, levee renovation that occurs after crawfish have burrowed into the levees can negatively impact crawfish yields the follow season, especially if the levees are the primary source of burrowing. If it is necessary to renovate a majority of a pond's levee area following the peak of burrowing activity, then restocking may be needed. However, this may not be possible or feasible if the renovation occurs too late. It is preferable to complete any renovation well in advance of the prime burrowing period of late April through June. If this is not possible, then one alternative might be to renovate half of the levee area of a pond in one year and the remainder in another year. ●

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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

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LSU AgCenter Crawfish News

Mike Salassi, M. Deliberto and Eric Webster with the Department of Agricultural Economics and Agribusiness and the School of Plant, Environmental, and Soil Sciences, LSU Ag Center, recently wrote a report titled "Evaluating the Economic Impact of Crawfish Production on the Rice Enterprise in a Rice/Crawfish Crop Rotation Systems." This report evaluates the economic impact of crawfish as a rotational crop on the rice enterprise, indentifying specific costs imposed on the rice enterprise unique to crawfish production and presenting relevant economic principles in the assignment of production costs to alternative farm enterprises from a farm accounting perspective. This report is available on the LSU AgCenter Web site http://www.lsuagcenter.com/en/crops_livestock/aquaculture/crawfish/

In response to the news article in the March 2008 Crawfish News on the $100,000 fine imposed on a Colorado company for shipping "rusty" crawfish into Wyoming, the Louisiana Department of Agriculture and Forestry and the LSU AgCenter will cooperatively work to compile a database that list the regulations in each state in regards to importation of live crawfish from Louisiana.

Industry News

Stephen Minvielle, executive director of the Louisiana Crawfish Farmers Association, participated in a two-day public hearing conducted by the U.S.-China Economic and Security Review Commission on April 24 and 25, 2008. The hearing on Chinese Seafood Imports: Safety and Trade Issues examined how the rise in Chinese seafood imports, including crawfish, has affected the U.S. Gulf Coast seafood industry. The commission will also be assessing the health impact of imported Chinese seafood.

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