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H. Rouse Caffey Rice Research Station News

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Special Dates of Interest:

- Rice Outlook Conference
  Austin, TX
  December 9-11, 2020
- H. Rouse Caffey Rice Research Station Annual Field Day
  June 30, 2021

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Baiting and Hunting of Migratory Birds Over Rice Fields

Hurricane Delta shattered a significant amount of rice grain from ratoon rice fields in southwest Louisiana and many first crop rice fields in northeast Louisiana. Many growers may have questions on how this shattered grain, which was caused by a hurricane, relates to the baiting laws and the legality of hunting over those fields. Therefore, I thought it would be pertinent to review the language in the law to clear up any questions related to the subject.

The law relating to the hunting of migratory waterfowl over agriculture fields is covered in the Code of Federal Regulations (CFR) document under Title 50, Chapter 1, Subchapter B, Part 20, Subpart C, §20.21. Here is a link to the current online electronic version of the CFR for this section: CFR Title 50 Part 20. The law was updated on August 8, 2019, to include wording clarifying the law as it relates to ratooning and post-disaster grain shattering events like hurricanes and storms. Here is how the current law reads specifically regarding this issue:

§20.21 What hunting methods are illegal?

Migratory birds on which open seasons are prescribed in this part may be taken by any method except those prohibited in this section. No persons shall take migratory game birds: …

(i) By the aid of baiting, or on or over any baited area, where a person knows or reasonably should know that the area is or has been baited. However, nothing in this paragraph prohibits:

(1) the taking of any migratory game bird, including waterfowl, coots, and cranes, on or over the following lands or areas that are not otherwise baited areas—

(i) Standing crops or flooded standing crops (including aquatics); standing, flooded, or manipulated natural vegetation; flooded harvested croplands; or lands or areas where seeds or grains have been scattered solely as the result of a normal agricultural planting, harvesting, post-harvest manipulation, rice ratooning, post-disaster flooding, or normal soil stabilization practice

Definitions of what constitutes "normal agriculture practices" and other terms within the above section are described in-depth in docket FWS-HQ-2019-008. According to this document you are allowed to:

Current regulations allow rice producers to grow rice to completion, harvest it, post-harvest manipulate it, flood it, and hunt over it. Rice growers may also grow rice to completion, not harvest or manipulate it, flood the rice, and hunt over it. If a rice grower chooses to manipulate un-harvested rice, then the growing area constitutes a baited area until all grain is removed at least 10 days prior to hunting. Under this rule, growers can grow rice to completion, harvest it, let the second growth establish, and hunt over it. Growers cannot manipulate the second growth in any way that may expose seed. If the second growth is manipulated, the growing area constitutes a baited area until all grain is removed at least 10 days prior to hunting.

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Regulations currently allow the grower of any crop to grow, harvest, post-harvest manipulate, flood, and hunt over the crop. A grower can raise a crop to completion, not harvest or manipulate it, then intentionally flood the crop for the purposes of hunting. If a grower does not harvest a completed crop and decides to manipulate it, the grower must adhere to the 10-day baiting rule prior to hunting. The revised regulations will allow hunting over a crop that is rendered "not harvestable" because of a disaster declaration under the Stafford Act and for which the Federal Crop Insurance Corporation has declared that the crop may be destroyed by flooding (and only flooding). No other manipulation is allowed. If the crop is manipulated by any means other than flooding, the growing area would be considered a baited area until all the grain is removed at least 10 days prior to hunting.

Figure 1. Ducks in a rice field.

Figure 2. Shattered rice from hurricane Laura in Louisiana.

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Comparisons Between Rice Disease and Covid-19

I am a plant pathologist and deal with the control of rice diseases. However, I see some similarities between what we are going through with the Covid-19 pandemic and the struggles our producers have controlling rice diseases.

Resistance is the best method to control any disease - be it plant or animal. You do not need to do a lot of management, and you do not need medicine or pesticides to control the disease if you have resistance. Unfortunately, resistance to all rice diseases is not present in our varieties just like humans do not have resistance to all diseases. Just like human pathogens, rice pathogens can also mutate to overcome what resistance is in rice and produce what we call new races of the pathogen. However, unlike Covid-19, where great hope is placed in vaccine development efforts, we do not have any way to induce resistance in rice at this time. Although, there is evidence that resistance can be induced through application of certain compounds or nutrients.

I think one of the more interesting comparisons between the two diseases is the use of fungicides to control rice diseases and the use of face masks to curtail the spread of Covid-19. Neither practice is 100% effective in preventing disease. Fungicides are limited in their activity and application technology to completely control diseases. They do, however, reduce the amount of disease in a field by protecting healthy tissues. They also have the benefit of reducing the amount of disease traveling from one field to another and how much inoculum is returned to the soil to overwinter until the next crop. All of these reduce the rate of disease development and reduce the damage to the rice crop. Farmers use fungicides often because they can see a benefit of higher yielding and better-quality rice. Face

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masks work in a similar fashion. They reduce the amount of inoculum being produced, and secondly, protect hosts by limiting the amount of inoculum they are being exposed to. Granted, just like fungicides, they are not 100% effective, nothing biological is, but they will reduce the amount of inoculum which will reduce the rate of disease spread. One aspect both management practices have in common is they have to be used correctly. Fungicides must be applied at the right time using good application methods to be effective. Face masks, in the same way, must be used when needed and be worn correctly. There are a lot of different opinions on the benefits of these disease control practices, but I believe we benefit from both and should continue to do our best to effectively use these control measures to help fight disease.

Figure 1. Protective fungicide applied to rice.

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Your Research Dollars at Work – Simple Math

Several events this summer as well as the preparation for my retirement in January 2021 have given me time to think about what rice disease management research has accomplished and if it has been beneficial to the rice industry. Through the development of less sheath blight susceptible varieties (compare Lemont, CL161, and LaBelle which lost up to 25-35% to many varieties we have today that only lose 8-17% to sheath blight under worse case conditions), evaluation of more effective fungicides (Benlate vs Quadris), correct application timing (applying by 50-70% heading rather than to headed rice thereby avoiding a 100 pounds per day loss), and cultural and IPM techniques, rice disease control has improved. Although Louisiana has had several low yielding years due to poor weather conditions, 2020 is shaping up to be another high-yielding year at least in the first crop. I do not think we would have these high yields without some level of effective disease control, but to be conservative, I am only going to claim a net 200 pounds of rice per acre yield increase due to better disease control. If you multiply that by 476,000 acres in Louisiana, you get over 95 million pounds, 950,000 hundred weight, or a 586,419 barrel increase in rough rice each year. Multiplying that by $12.00 per hundred weight produces an $11,400,000 benefit to the state's rice farmers, landlords, and others that have some form of share of the crop harvested. I estimate that the Plant Pathology project at the Rice Research Station costs about $400,000 per year to run. Research is expensive; however, when you consider project leaders, research associates, agricultural research assistants, summer workers, farm, shop, and office support personnel salaries plus supplies, equipment, and travel, it all adds up. Support comes from several sources, including the Louisiana state budget, intellectual properties royalties, and several different sources of grants including federal, industry, and the producer supported Louisiana Rice Research Board funding. For many years, the state proportion of this support has been decreasing; therefore, we are more dependent on external funding sources. In fact, all these sources come from the producers through taxes, slightly higher costs of products, and check off funds. If you subtract the cost of doing the research and then divide the remaining $11,000,000 by $400,000 you get a 27.5X return on your money. Not too bad of a return. This is based on only a 200-pound increase per acre due to better disease control. That would double if you gave a 400-pound per acre increase to better control sheath blight, blast, Cercospora, bacterial panicle blight, and other diseases, which is not out of the realm of possibility. Now, just consider what other great benefits are received through other research projects conducted in Louisiana, including better varieties, weed control, agronomic practices, and insect

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control just to name a few. Louisiana has almost doubled its rice yield in the last 30+ years. Research works! I also give a lot of credit to our rice producers who are some of the most innovative hard-working people I know. All of this helps explain why Louisiana now has more comparable yields to Texas, Arkansas, Mississippi, and Missouri and is getting closer to California's yield levels.

Figure 1. Improved rice fungicides.

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The Impact of Hurricanes Laura and Delta on the Rice Research Station

Like many people in the area, hurricanes Laura and Delta adversely affected the H. Rouse Caffey Rice Research Station. Luckily, damage to station facilities was a lot less than many of our producers. Almost all the first crop, including all of the foundation seed, was harvested before the storms except the Iowa trials and some late-planted studies on station. Second crop is another story, and we will see how badly it was affected once we start harvesting. Below are a few photos of some of the damage.

Figure 1. Stripped grain from research plots near Iowa.

Figure 2. Tree damage.

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Figure 3. Water damage to Agronomy lab.

Figure 4. Damage to old foundation seed building used for storage.

Figure 5. Roof damage on station building.

Figure 6. Downed power lines that feed station.

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Focus

Caitlin deNux

Caitlin deNux started as a research associate in the pathology lab in January.

She previously worked 5 years in the soybean variety trials at the Dean Lee Research and Extension Center, managing 150 varieties. She also worked at Dean Lee as a student. “It was like a family,” she said. “It was great to learn from the professors there.”

When her husband, Mason, took a job with Acadian Ambulance in Lafayette, her current job at the Rice Research Station became open. “Going to the Rice Research Station was the right move for me,” she said.

Caitlin did not grow up on a farm, but she was influenced by her mother, Donna Gentry, who works for the LSU AgCenter, and her father, Scott Woodard, who owned a dairy farm with his family in north Louisiana. “So, my background may not be strictly agriculture, but growing up around others who were helped me to decide that I wanted to pursue a career in it as well.”

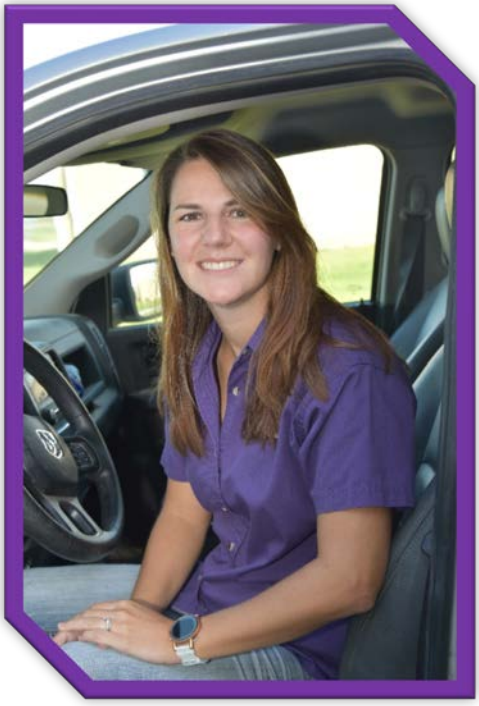
Caitlin has a bachelor’s degree in biology from Northwestern State University and a master’s degree in plant and environmental science from LSU. She is now an LSU doctoral student studying environmental science.

She has been working with Dr. Don Groth, LSU AgCenter plant pathologist. “He’s been incredibly patient.”

Groth said he’s been pleased with Caitlin’s work. “She came in with a wealth of experience working with the soybean testing program,” he said. “She loves her work, and she moved into that position very easily.”

Caitlin grew her first rice crop this year, finding out about diseases that afflict rice and getting her first time to operate a 4-wheel spray rig. “It’s been a great learning experience.”

When she’s not at work, Caitlin enjoys running, and she’s training for a 10K race in December. She also likes to cook, play video games, and spend time with her two dogs.



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