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Jeff Davis Rice Talk

News and information for our parish's agricultural producers and dealers

March 2008

Electronic Mail

In an effort to reduce publication and distribution costs, we are encouraging recipients to receive this newsletter electronically. Just call in your e-mail address, or e-mail me at eeskew@agctr.lsu.edu , and I will add your name to my rice e-mail list.

Also, if you have access to the internet, I recommend that you visit the LSU AgCenter Rice webpage at www.lsuagcenter.com/en/crops_livestock/crops/rice/.

This is an excellent source for up-to-date rice information as well as a library of past presentations, projected costs, etc.If you are interested in other crops go to www.lsuagcenter.com and click on "Crops & Livestock" on the left side of the page under Topics.

And don't forget to go to the Jeff Davis Parish website at www.lsuagcenter.com/parish/jeffdavis/ for past copies of this newsletter and other agriculture, family and consumer sciences, and 4-H youth development news.

2008 Season

The 2008 season is beginning with lots of optimism. Rice prices have finally reached the level that everyone said it needed to be for the 2007 crop, and it looks even better for the 2008 crop. And all indications are that these high prices for all of the commodities are not a one year blip on the screen, but should be with us for several years. The world's population is beginning to wonder if there will be enough food to feed everyone.

More good news came from Europe recently when the European Union voted to remove the requirement for mandatory testing for LL601 at arrival of all imports of U.S. long grain rice. Now, all rice destined for Europe will be tested before it leaves the U.S. Some member states with a tradition of anti-GM sentiment may continue to test, but for the most part, testing will likely be scaled back significantly by the other European members.

This is a result of the U.S. rice industry's effort to remove all traces of LL601 from the commercial rice supply, and should result in rebuilding the EU market.

And there is more good news concerning Cuba with Fidel Castro's resignation as President. Although not a lot of change is expected immediately, there is a strong push in Congress to re-establish our relations with this small island that has so much promise for the United States.

While all of this sounds good, and high prices are expected for our crops, especially rice, it doesn't mean it will be easy. Uncontrollable increases with input costs will require even better management skills and smarter decisions than ever before.

New Water Weevil Product

Louisiana recently received a Section 18 for a new seed treatment for rice water weevil control. The product will be called Dupont Dermacor X-100 Seed Treatment. This product will give good crop protection of rice water weevil and has an excellent environmental profile. Dermacor is restricted to drill seeded or dry broadcast rice planting.

Grain Drill Calibration

With an increase in Clearfield rice the past few years, more and more growers are planting with drills. This is especially true of the hybrid varieties. Drill calibration is critical in achieving the right amount of seed per acre. Also, varieties differ in the amount of seed per pound, so it may be necessary to re-calibrate during the

season, especially if you change from conventional varieties to hybrids, and back. This needs to be done before starting to plant because it will take an hour or two the first time you go to the field.

Most of the times, with older equipment, the settings on the drill will be off. By calibrating and recording the setting you are using, you can refer back to that setting prior to re-calibrating the next time. Once you calibrate one time, it will be much easier and quicker the next time.

There are several numbers that you need to know. The first is the drill spacing or distance between runners, in feet. For example, a 7-inch drill spacing equals .58 feet (7"/12"= .58 ft). Second, determine the distance the drill must travel for each runner to plant one acre. In this case, 43,560 sq ft/acre divided by .58 feet equals 75,103 feet. Next you need to know how many seeds of this variety weigh one pound. This number can be found on the seed bag, or by referencing the *2008 Rice Varieties and Management Tips* bulletin. Multiply the pounds of seed per acre desired by the total seed per pound and divide this number by the length the drill needs to travel (75,103 feet) and this will give you the number of seed per foot of row.

Once you have the above numbers calculated, you need to determine the effective circumference of the drill drive wheel. This can be determined by simple math or by measuring the actual circumference. However, the best way is to get the actual circumference - the distance one revolution travels in the field being planted. This is determined by making a mark on the drive wheel and measuring the distance it travels per revolution. It is best to go ten revolutions and then divide the total by ten to get an average distance (in feet) per one revolution. Be sure and convert inches to feet. Make sure the hopper has sufficient seed to cause normal flow. Disconnect a seed drop tube, jack the drill off of the ground, turn the wheel and collect the seed in a small container. It is recommended that you go several revolutions (ex: 5) because it is hard to turn the wheel accurately for one revolution.

After counting the seed collected, make adjustments and collect seed again. If the hopper is divided into two sides, (or more with larger drills) each side or segment will need to be calculated.

<u>Let's look at the following example:</u>
7" drill spacing in feet = .58 ft (7" / 12")
Distance runner needs to travel = 75,103 ft (43,560 /.58)
Variety = Clearfield 161
Seed/pound = 18,493 (2008 Rice Management Tips)
Desired seeding rate = 70# per acre
Seed per acre = 1,294,510 (18,493 x 70)
Seed per foot = 17.3 (1,294,510 / 75,103)
Effective circumference = 7.67 ft. (one revolution)
Seed per revolution = 133 (17.3 x 7.67 ft.)
Seed/revolution x 5 = 663 seed/5 revolutions

Sprayer Calibration

Another practice we see more of today is grower application of chemicals. It is essential to calibrate these spray rigs before the season begins and several times throughout the season because a misapplication can result in crop injury, lack of control if not enough pesticide is sprayed, waste of money spent if too much or too little chemical is applied, and loss of yield due to poor control.

Before calibrating, make sure you are starting with the best equipment possible. Make sure you use nozzles recommended for the type of application you are doing. Check nozzles for leaks or clogs and replace if necessary, check hoses and connections for leaks, and make sure booms are in good condition. Next, fill the sprayer with clean water. Never calibrate with pesticides already in the spray rig.

The first decision to make is to determine the calibration course. Since there are 128 ounces in one gallon, 1/128 of acre is 340 sq. ft. (43,560 sq. ft. per acre divided by 128). By dividing 340 sq. ft. by nozzle spraying in feet, you will know how far to travel to determine speed. The number of ounces collected in the amount of time recorded for the tractor to travel the calibration course will equal gallons per acre.

<u>Follow the steps below to calibrate a boom sprayer:</u>

1. Determine nozzle spacing in feet (18" nozzle spacing / 12" = 1.5 ft.)
2. Determine calibration course. (Divide 340 sq. ft by nozzle spacing in feet.) This will give the distance needed for the tractor to travel.
3. Measure and stake off the calibration course in the field to be sprayed. This is important as speeds may be faster on roads rather than plowed ground, changing the application rate.
4. Drive the course in the gear and rpm you will use when actually spraying. Record time in seconds. Do this twice and average the time.
5. Park the tractor and maintain the same rpm.
6. Turn on the sprayer and catch the water from one nozzle for exactly the same number of seconds that it took to drive the calibration course.
7. Ounces caught = gallons per acre

8. Collect from all nozzles. Flow rate should not vary more than 10%. Clean or replace any nozzles that do not fall into this range.
9. Rate per acre can be changed by adjusting rpm or speed.

Fertility

Fertilizer prices have increased drastically in the last few years, and now is the first or second highest input expense in a rice crop, along with fuel for irrigation engines. Farmers are always looking for ways to cut corners and fertilizer is usually one of those inputs targeted. But considering this is the fuel (nutrients) that drives the engine (rice plant), caution is the word that comes to mind when considering this alternative.

The first decision made should be to soil test. If you do not have a recent (3-year) soil test, my recommendation would be to not cut back on any of the three basic nutrients – nitrogen (N), phosphorous (P), and potassium (K). If you have a good, reliable soil test, get someone to interpret the P and K levels available to the rice plant in the soil. In some cases, especially phosphorous, you may be able to reduce your application rate, but without a soil test you are taking a serious gamble.

Nitrogen is the most important nutrient of the three. Because rice is a grain crop and does not produce it's own nitrogen sufficient quantities must be supplied throughout the season for the plant to survive and to produce high yields. So while this strongly suggests that you do not need to reduce nitrogen rates, there are some things you can do to be more efficient with your nitrogen applications.

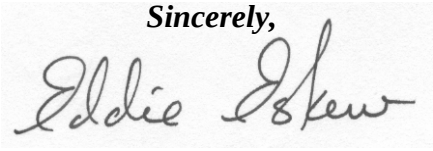
The first thing is to understand how our rice nitrogen fertilizers are utilized. Urea and ammonium sulfate are the two sources we use. Our "33 Blend" is a combination of urea and ammonium sulfate. Both sources of fertilizer have the NH_4^+ form of nitrogen. When either of these fertilizers are applied to a dry soil and flooded immediately, urea is quickly hydrolyzed by the water to the ammonium ion (NH_4+), while ammonium sulfate is already in the ammonium form. Both can then be taken up by the rice plant. The NH_4^+ remains fairly stable in the anaerobic (no oxygen) soil layer. If your field is drained or losses a flood for any reason, the NH_4^+ is converted to NO_3^-, which also can be used by the rice plant. However, when you re-flood the field, anaerobic bacteria attack the oxygen molecule on the NO_3^- and convert it to NO, N_2O, and N_2, all gases which are lost by volatilization.

When urea or ammonium sulfate is applied into the flood water, this same reaction takes place. The fertilizer, in the presence of moisture is converted to the NH_4^+ ion and some of it is utilized by the rice plant and some moves into the soil. Some of the NH_4+ remaining at the surface is converted to NO_3- which is then "denitrified" into NO, N_20 and N_2. This is why nitrogen losses are much higher when applied into a flooded field. Also, losses are higher when applied into the water to seedling rice as opposed to applying it to rice at the green ring stage.

If you are unable to flood your fields in a timely manner, you can use products that have a urease inhibitor that is coated onto the urea and slows the hydrolysis of urea to the NH_4+ form. Agrotain is a commercially available urease inhibitor that can be purchased and applied at your local fertilizer dealer. Past studies at the Rice Research Station have shown that you can gain about five days before flooding with Agrotain. With the current cost of urea fertilizer, and the cost of Agrotain, use of this product will pay for itself if it takes you more than three days to flood your field.

While fertilizer prices continue to increase, we must be even more vigilant with our nitrogen applications. Unfortunately, even under the best management practices, not all of the applied N will be taken up by the rice plant. However, proper placement and water management will minimize these losses.

Sincerely,



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Visit our website at:
http://www.agctr.lsu.edu/parish/jeff_davis/

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