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RICE RESEARCH STATION NEWS

Seed Treatments for Stand Establishment

Planting time is quickly approaching. After the choice of variety is made, the main concern is establishing a good stand. Several seed treatments, such as fungicides and gibberellic acid, are available to help establish stands. With increasing seed costs, especially for herbicide-resistant varieties and hybrids, lower seeding rates are economically beneficial. At the same time, decreasing profit margins mandate establishing a stand the first time to avoid replanting.

Treated rice seed in a grain drill

LSU AgCenter Research & Extension

Southwest Region

Rice seed treatment fungicides protect seed and seedlings from fungi in the soil that either attack the endosperm, which depletes the food supply of the seedling, or directly attack and kill the seedling. In research plots over the past 20-plus years, fungicides have increased stands by an average of 20 percent to 25 percent under cool, wet conditions. When planting conditions are favorable for stand establishment, they have less effect on stands.

Gibberellic acid seed treatment has proven more useful in drill-seeded rice than in water-seeded rice. Faster emergence, better stands and taller seedlings are the primary benefits. The greatest benefits are realized in three main situations:

1. When germination and emergence are expected to occur under adverse environmental conditions (planting early – before April 15 in Southwest Louisiana and before May 1 in North Louisiana).

2. When good seed-to-soil contact is desired to minimize flushing for germination (planting between 0.5 to 1.5 inches deep).

3. When seed is limited because of costs or availability (planting at less than 60 lb/A).

Gibberellic acid and fungicides are complementary and will not substitute for each other.

Although seed treatments will not always ensure an adequate plant stand, their benefits usually exceed their costs. Additional seed treatment materials that can be added are insecticides and zinc. These materials are used for ensuring stand maintenance and avoiding problems later in the season but seldom increase stands.

Inside this issue:

Special points of interest:

Rice Field Day, Rice Research Station, June 30, 2005.

Vermilion Rice Field Tour, July 6, 2005

Southwest LA Rice Tour, July 6, 2005

Improved Crawfish Trap Design Might Mean Fewer Traps Needed

Over the past several years, crawfish farmers have been switching to a slightly different crawfish trap – one constructed of ¾-inch square mesh wire in lieu of those made from ¾-inch hexagonal (6-sided) mesh. The square mesh configuration provides for a much sturdier trap than the hex configuration, thus increasing the useful life of the trap. It was also noticed that crawfish catch was increased by the square mesh trap, partly because the square configuration of the mesh retains a slightly smaller crawfish than the hex pattern. Traps constructed of square mesh wire may also be more efficient because of the increased structural integrity, which allows trap bottoms and funnel openings to retain their original shape better.

One study at the Rice Research Station in 2003 documented a 39% average increase in catch, from 525 to 728 pounds per acre, with ¾-inch square mesh traps compared to the old industry standard ¾-inch hexagonal mesh traps. With increased catch efficiency, the question arises: "Can square mesh traps be successfully used at a lower density than previously recommended for the less efficient hex mesh traps?" Based on research in well-managed ponds producing more than 1,000 pounds per acre, 20 to 24 hex mesh traps per acre were found to be the most efficient and economical trap density.

A preliminary study was conducted in 2004 at the Rice Research Station comparing square mesh trap densities of 18 and 24 per acre. With an average annual yield of 623 pounds per acre, the higher trap density resulted in only 48.5 pounds per acre, or 8%, greater yield. Assuming an average bait cost (½ fish and ½ manufactured bait) of $24 per hundred pounds, and 1/3 pound of bait per trap over 63 days of trapping, bait cost alone for the additional 6 traps per acre would result in an increased cost of $29 per acre, or 60 cents per pound for the additional yield. Although the lower trap density in this one study did not lower yields significantly, additional studies are needed under an array of growing conditions to confirm lower trap density recommendations and to determine the most cost efficient trap densities under different conditions.

The square mesh configuration provides for a much sturdier trap than the hex configuration, thus increasing the useful life of the trap.

Rice Herbicides for 2005

Rice weed control has changed dramatically in the past few years with new products such as Aim, Beyond, Clincher, Command, Newpath, Regiment and Ricestar HT. A new Dow AgroSciences herbicide, sold under the trade name Grasp, and a new BASF herbicide, sold under the trade name Clearpath, will be available to rice producers in 2005.

Grasp is a liquid herbicide formulated as a 2.0 lb ai/gal material. The application rate of Grasp is 2.0 to 2.8 oz of product/A applied one time during the growing season. Grasp is primarily a broadleaf herbicide with activity on rice flatsedge and 1- to 4-leaf barnyardgrass. The broadleaf control spectrum includes eclipta, hemp sesbania, and smartweed. In research conducted in Louisiana, Grasp suppresses the growth of alligatorweed, ducksalad, jointvetch, perennial barnyardgrass, and Texasweed. Little to no activity has been observed on yellow nutsedge, broadleaf signalgrass, sprangletop, fall panicum and perennial grasses found in Louisiana rice production. Grasp is labeled for mixing with Command, Prowl, propanil formulations, Grandstand, Clincher, Facet, Newpath and Permit.

Clearpath is a new herbicide mixture containing quinclorac (Facet) plus imazethapyr (Newpath) for use only in Clearfield rice. Clearpath is formulated as a 75% wettable granule.

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Rice Herbicides for 2005 (cont.)

The application rate of Clearpath is 0.5 lb of product/A which contains the equivalent of 0.4 lb/A of quinclorac (Facet) and 4 oz/A of imazethapyr (Newpath). The benefit of the product is the broadleaf and extended grass control from the quinclorac and the red rice control from the imazethapyr portion of the combination. However, sprangletop will be a weakness for this product as with Facet or Newpath applied alone.

A label change has occurred for Newpath. The new label states that the first postemergence application can now be applied to spike to 2-leaf rice compared with the spike to 1-leaf application timing on the 2004 label. Beyond has a label change that will require a 65 ft and 200 ft buffer zone for ground and aerial applications, respectively; however, this is not required if the wind is blowing in the opposite direction from nontarget crops.

Before applying any herbicide read the label for application instructions, mixing instructions, precautions and restrictions.

Foundation Seed Available

The Rice Research Station Foundation Seed project has limited amounts of Cocodrie, Jupiter, Cypress, Pirogue, Bengal and Ecrevisse foundation seed available. The seed will be sold on a first-come, first-served basis. Please contact Larry White at the Rice Research Station if you are interested in obtaining seed. The price of foundation seed is $60/cwt.

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Asian Soybean Rust Update

The first case of Asian soybean rust (causal agent, *Phakopsora pachyrhizi*) documented in the United States was discovered in a Louisiana production field at an LSU AgCenter research station near Baton Rouge on November 6, 2004. The introduction of Asian soybean rust into the United States was not unexpected. The disease has been confirmed in all major soybean-producing areas of the world.

Spores of the causal agent are most active when temperatures are between 59 and 77 degrees F, and the spores are killed by freezing temperatures. Symptoms of Asian soybean rust are tan or reddish-brown lesions, which can occur on stems, petioles and pods, but are most common on the underside of leaves. Symptoms are similar to those of three other soybean leaf diseases: brown spot, bacterial pustule, and bacterial blight (angular leaf spot). Unlike lesions from the other diseases, Asian soybean rust pustules are raised and occur mainly on the underside of the leaf. If the disease is allowed to progress, infected plants are quickly defoliated, reducing pod set and pod fill, resulting in reduced yields and seed quality.

Asian soybean rust can be managed in Louisiana.

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Asian Soybean Rust Update (cont.)

Selection of high-yielding soybean varieties that are well-adapted to Louisiana will be crucial. Two fungicide applications should be budgeted for the 2005 crop season. If the disease does occur, all fields will have to be treated or unsprayed fields will potentially serve as sources of inoculum for nearby fields. Proper variety selection, preventive sprays and timing of sprays will be critical for a successful soybean crop.

More information and updates on the rust situation can be accessed at these Web sites:

www.lsuagcenter.com/subjects/soybeanrust

http://www.aphis.usda.gov/lpa/issues/sbr/sbr.html

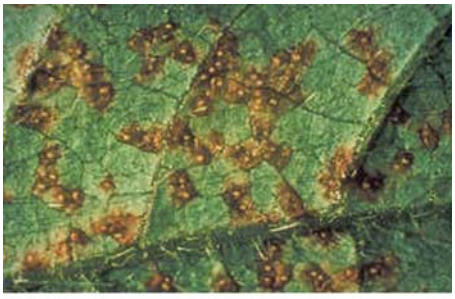

Photo credit: Glen Hartman, University of Illinois at Urbana-Champaign

Icon Alternatives Still in Question

The Entomology program at the Rice Research Station is investigating several alternatives to insecticides currently registered for rice water weevil management. Three alternative seed treatments have been tested in several experiments over the last three years. However, only one of the alternative seed treatments has given control consistently as good as, or better than, Icon, and the manufacturer has not yet committed to bringing this insecticide to the U.S. rice market.

Two granular insecticides were also tested in small-plot tests in 2004. One of these granular insecticides, etofenprox (Trebon®), has been used successfully to manage weevils in rice in Japan for over 15 years. This product is targeted primarily at adults and would be used in a manner similar to Karate® (i.e., applications made shortly after permanent flood). The fact that this insecticide is formulated as a granular minimizes problems with drift. The manufacturer of etofenprox appears committed to bringing this insecticide to market. The other granular insecticide would be used in a manner similar to carbofuran (i.e., applications two to three weeks after permanent flood) and it was effective at high rates in two tests in 2004. Further tests of both of these products are planned for 2005.

Small-plot tests and commercial demonstrations were also conducted in 2004 using Mustang Max® and Karate® impregnated or coated on fertilizer. These fertilizer impregnations were tested both as early post-flood applications (one day after flooding) and delayed post-flood applications (two weeks after flooding), and both approaches appeared to be effective in these preliminary studies.

Small-plot tests and commercial demonstrations were conducted in 2004 using Mustang Max® and Karate® impregnated on fertilizer.

www.lsuagcenter.com/inst/research/stations/rice/

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Comings and Goings

Dr. Tim Croughan retired from the Rice Research Station effective Dec. 31, 2004. Croughan served as the professor of biotechnology for cereal crops and biological approaches to coastal wetland restoration for the past 23 years. He is best-known for his important role in the development of imidazolinone-resistant rice marketed under the Clearfield brand. Croughan held an endowed chair in rice biotechnology at the Rice Research Station.

Melvin Lawrence, Maintenance Repairer 1, retired December 31, 2004 after 20 of service at the Rice Research Station.

Teresa Malbrough, Custodian 1, retired December 31, 2004 after 22 years of service at the Rice Research Station.

Donna Sonnier, Custodian 1, was appointed November 15, 2004.

Seeding Dates for Louisiana Rice Production

Seeding date research at the Rice Research Station.

The date of seeding is an important consideration for Louisiana rice producers. Certainly, the ideal planting date will vary from year to year and location to location. However, long term research conducted at the Rice Research Station has shown that earlier seeding is normally advantageous, especially in the Southwest growing region. Recommended seeding dates for this region are from March 15-April 20. Research has shown that rice planted earlier in this range will typically produce higher yields and often higher milling yields. This same research has also shown that second (ratoon) crop production is usually superior for rice planted by the first week of April. While seeding dates are somewhat less critical in North Louisiana, it is generally recommended that rice be planted between April 5 and May 10 in this growing region.

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