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A Tribute to Henry M. "Hank" Beachell

Henry Monroe Beachell, co-recipient of the 1996 World Food Prize, has been called "one of the most important individuals in rice improvement in the world", celebrated his 100th birthday on September 21. Beachell's pioneering research put him at the forefront of the Green Revolution, which led to dramatic increases in rice production over the last three decades.

Henry Beachell, known to his friends as "Hank," was born September 21, 1906, in Waverly, Nebraska, to William Albert and Alice Leona Degler Beachell. He was the second of seven children, two boys and five girls. He graduated from the University of Nebraska in February, 1930 and obtained his master's degree from Kansas State University in 1934. In 1972 Hank was awarded an honorary doctorate by the University of Nebraska.

While attending Kansas State, Hank studied under Dr. John H. Parker. It was Dr. Parker who impressed upon Hank that a plant breeder's existence depended upon his ability to develop improved varieties that met the needs of the farmer, the miller, and the ultimate consumer; therefore, it was imperative that the breeder be cognizant of all phases of production, processing, consumption and market demands.

Hank Beachell, very early on in his renowned rice breeding career.

In March, 1931, Hank became Texas' first rice breeder at the USDA/ARS Rice Research Unit, which is part of the Texas A&M Agricultural Research and Extension Center in Beaumont, Texas. That year Dr. Beachell made several rice crosses, probably the first artificial crosses of rice made in the state, with the first release, Texas Patna, coming in 1942.

While at the Beaumont Center, he created, and helped introduce, nine rice varieties, which eventually accounted for more than ninety percent of U.S. long-grain rice production. During this time, he also took part in research, as well as teaching tours of rice production areas in India, Central America and South America. After retiring from the Beaumont Center in 1963, he accepted a position at the International Rice Research Institute in the Philippines.

That same year, while going through IRRI's experimental plots, seeking a sturdy rice plant that would respond well to fertilizer and mature early, he helped select the rice that eventually became the IR8 rice variety. After further development, IR8 was released in 1966 and set yield records, more than doubling previous yields.

For two decades, Hank traveled to promote IR8 and other varieties resulting from the institute's work. He also continued research to make improvements to the variety, including making it more resistant to pests, adapting it to various growing conditions, and meeting cooking and taste criteria. In 1982, he returned to the United States and became a consultant to RiceTec.

In addition to his remarkable rice breeding achievements, Beachell has been a dedicated and enthusiastic mentor to dozens of young research scientists who have become leaders of rice breeding programs worldwide, significantly increasing the quantity and quality of this vital food crop.*

From the Editor...

Rough rice futures reached $9.72/cwt on the November futures, continuing an upward trend, but 30¢ below the November futures price reached back in August 17. This was the day before storage bins in Arkansas and Missouri were found to have trace amounts of an unapproved, genetically modified rice developed by Bayer Crop Sciences. Ignoring any impact the GMO contamination had on premiums, this equates to roughly a $56 million drop in the value of U.S. long-grain rice, up from the roughly $188 million drop in value two days following the announcement. These numbers suggest the market is recovering from the GMO contamination problem, but it has a way to go to fully recover.

The GMO contamination story continues to unfold, but it does not appear we are any closer to knowing how the Arkansas and Missouri storage bins became contaminated in the first place. On a positive note, all of the samples from the Beaumont Center rice varietal development programs have been tested and are clean. The other states have reported identical results, with the exception of one Louisiana sample.

On October 1, the USDA initiated what is referred to as a "grassroots regulatory action alert" for interested parties to submit comments regarding Bayer's application to have LLRICE 601 deregulated. The deadline for submission is October 10. If approved, the deregulation does not mean that LLRICE 601 will be commercially produced. Nor does it mean that Bayer will be off the hook, so-to-speak, regarding pending lawsuits. However, it does mean that any commercial rice contaminated with LLRICE 601 can be marketed. If you are interested in reviewing comments that have been submitted to USDA regarding the proposed deregulation, the best way to do this is to go to http://www.regulations.gov and, in "Agency" box, select the menu item titled "Animal and Plant Health Inspection Service", then click on "Submit." In the Docket ID column, select "APHIS–2006–0140" to view public comments and to view supporting and related materials available electronically. A number of supporting and opposing letters have been submitted. Although I do not agree with some of the comments that appear to promote hysteria about GMO foods being dangerous or even evil, I agree with our system that allows input from concerned individuals.

On another front, rice yields across the U.S. are higher than last year, with the possible exception of Louisiana, where yields are down slightly. In Texas, yields to the west of Houston are particularly high. However, the extended rainfall east of Houston reduced yields and contributed to the higher disease pressures during the ratoon crop.

Last month, the Beaumont Center hosted two workshops. Kelby Boldt, the Jefferson County Extension Agent, organized a workshop on organic rice production. The workshop was well attended with about 40 participants. The workshop was repeated at Bay City, with an additional 40 people in attendance. A common theme of the workshop was the need for additional research, particularly addressing the development of rice varieties that compete more effectively with weed species, and the development of improved weed and fertilizer management options. The U.S. organic market is projected to maintain a 9-16% annual rate of increase through 2010. Mike Doguet, a local rice producer and miller, estimates that last year's Texas organic rice crop reached 6% of the state's rice production. It would not take much of an increase in market price for U.S. organic rice production to really take off.

Keep on sending us your suggestions.

Sincerely,

L. T. Wilson

L.T. Wilson
Professor and Center Director
Jack B. Wendt Endowed Chair
in Rice Research

Inside This Issue

Farming Rice
a monthly guide for Texas growers

Providing useful and timely information to Texas rice growers, so they may increase productivity and profitability on their farms.

Diatomaceous Earth Plus Methoprene for Control of the Lesser Grain Borer, *Rhyzopertha Dominica*, in Rough Rice

The lesser grain borer (LGB), *Rhyzopertha dominica* L., is a world-wide primary insect pest of stored grains. Females lay an egg outside the kernel, and upon hatching the first instar bores into the kernel, where it completes development to the adult stage. Once inside the kernel, the developing larva is protected from exposure to contact insecticides. Adults will bore through the kernel to exit, thereby creating a large hole, and the kernel is classified for grading purposes as an insect-damaged kernel (IDK).

The LGB is a strong flyer attracted to odor of warming grain in bins, and is a major economic pest of wheat in the southern plains and rice in the south-central USA. Insect control in stored rice can be accomplished through fumigation with phosphine and through the use of grain protectants, including diatomaceous earth (DE), and the insect growth regulator (IGR) methoprene (Diacon II).

Diatomaceous earth and methoprene are considered to be "reduced-risk" insecticides because they are not neurotoxins, and are less hazardous than conventional chemical compounds.


Photo courtesy of Frank Arthur

Lesser grain borer on rough rice.

Although DE is a safe chemical product, the LGB is particularly difficult to kill with DE alone, and there is variation in effectiveness among grain commodities and with insect species. Methoprene as an IGR, does not kill adults, and combination treatments with other insecticides is required for adult mortality. Combination treatments of methoprene and DE give control of adult LGB and reduce progeny production on stored wheat.

In a detailed study, long-grain rice (Cocodrie), short-grain rice (S-102), and medium-grain rice (M-205) were treated first with 0, 0.25, 0.50, 0.75, and 1.0 ppm methoprene, then with 0, 125, 250, 375, and 500 ppm DE. There were 25 combinations, with 5 replicates each, and the experimental unit was 20g of rice in plastic vials. Relative humidity (RH) was maintained at 75%. Twenty adults were exposed in each vial for 2 weeks at 32°C-75%RH, mortality was assessed and parental adults discarded, and vials were then returned to boxes and held for 8 weeks to obtain F_1 progeny.

Mortality with DE alone did not exceed 70% even at the label rate of 500 ppm, with greater mortality in Cocodrie and M-205 than in S-102 (Figure 1). Mortality was slightly higher in the methoprene treatments,

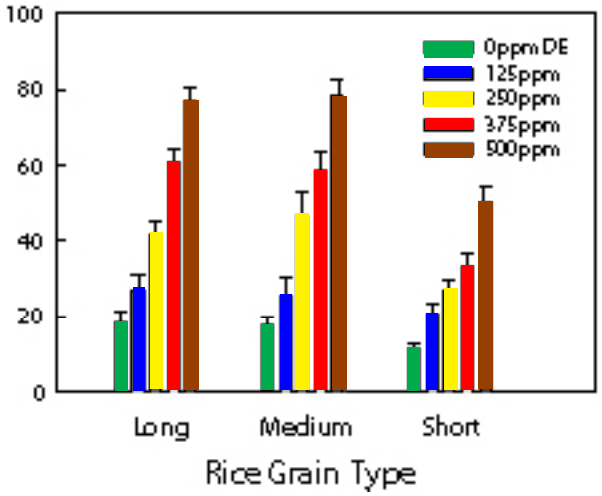

Figure 1. Percentage mortality (mean ± SE) of adult lesser grain borers exposed for 2 weeks on three rice types (long-, medium-, and short-grain) treated with 0, 125, 375, and 500 ppm diatomaceous earth (DE) and 0, 0.25, 0.50, 0.75, and 1 ppm methoprene. Rice was held at 32°C and 75% relative humidity.

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Lesser grain borer continued...

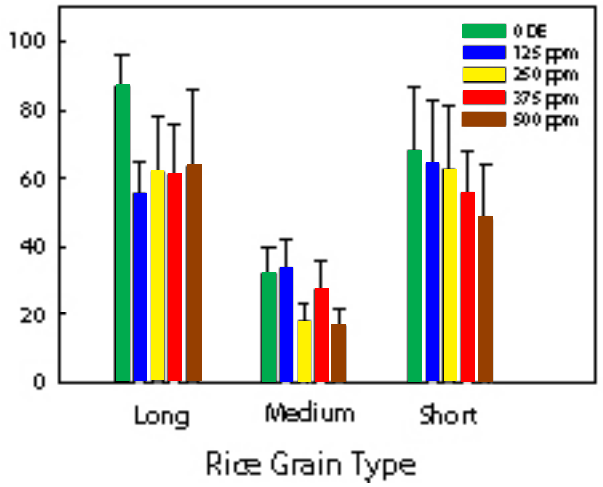


Figure 2. Number of progeny produced (mean ± SE) by 20 parent LGB exposed for 2 weeks on 20g of rice of three types (long-, medium-, and short-grain) treated with 0, 125, 375, and 500 ppm diatomaceous earth (DE). Rice was held for 8 weeks at 32°C and 75% relative humidity after parent adults were removed.

an insect growth regulator and normally does not kill adults.

There was extensive progeny production in rice treated with DE alone, with more progeny in Cocodrie and S-102 than in M-205, which was different from the results with the adult insects (Fig. 2). Larval suppression was 99 to 100% with any level of methoprene.

Our results show that mortality of LGB exposed on rice treated with DE was less than what was found in similar studies with wheat treated with DE. One possible explanation is the rice kernel has seams and folds, in contrast to the relatively smoother exterior of the wheat kernel. Also, the physical and chemical properties of the rice hull may be helping the first instar LGB larvae to escape exposure. The larvae enter the kernel through splits and cracks in the hull, and may not be able to penetrate sound, intact hulls.

Additional studies are underway to examine progeny production of the LGB on different rice cultivars, correlation of hull and kernel hardness with progeny production, and identify cultivars that may show resistance to the LGB. *

Article by Dr. Frank Arthur with the USDA-ARS Grain Marketing and Production Research Center in Manhattan, KS, 785-776-2783. For further information on these and other related projects, please contact frank.arthur@gmprc.ksu.edu. Recent publications can be downloaded from http://ars.usda.gov/npa/gmprc/bru/arthur

USDA Seeks Public Comment On Deregulating Libertylink Rice Line

The USDA is seeking public comment on a petition to deregulate a rice variety genetically engineered (GE) to be tolerant to herbicides marketed under the brand name LibertyLink.

In 1999, after thorough safety evaluations, USDA's Animal and Plant Health Inspection Service (APHIS) deregulated two similar LibertyLink rice lines. Under petition, APHIS would extend its deregulation from the original two lines to include the rice line known as LLRICE601.

On Aug. 18, USDA announced that trace amounts of this regulated GE rice were detected in samples taken from commercial long-grain rice. The petition for deregulation, submitted by Bayer CropScience, is in accordance with APHIS' regulations concerning the introduction of GE organisms and products. APHIS has prepared a draft environmental assessment (EA) for LLRICE601. The scientific evidence indicates there are no environmental, human health or food safety concerns associated with this GE rice.

USDA is seeking comment on the petition and invites comments on the EA. Consideration will be given to comments received on or before Oct. 10.

Send an original and three copies of comments to Docket No. APHIS-2006-0140, Regulatory Analysis and Development, PPD, APHIS, Station 3A-03.8, 4700 River Road, Unit 118, Riverdale, Md. 20737-1238. Comments may be submitted via the Internet at http://www.regulations.gov. *

CEU's for Pesticide Applicators

Texas Cooperative Extension's agriculture program in Harris County will offer a pesticide applicator training series, which will provide five continuing education units to licensed professionals upon completion of each one-day training session.

Each session costs $25 for advance registration and $30 at the door.

Pre-registration is recommended; classes fill quickly. Contact Diana Todd, 281-855-5600, DGTodd@ag.tamu.edu.

Study: Farmer-Owned Ethanol Plants Contribute More to Local Economies

The study, "Economic Impacts on the Farm Community of Cooperative Ownership of Ethanol Production," concludes that, "Since a farmer-owned cooperative ethanol plant is literally a member of the community, the full contribution to the local economy is likely to be as much as 56 percent larger than the impact of an absentee-owned corporate plant." John Urbanchuk of LECG, LLC, conducted the analysis.

In many ways the economic impact of farmer-owned and absentee-owned ethanol plants on the local community is similar, the study points out. Yet there are two important differences that significantly increase the impact of a farmer-owned plant.

1.) The share of expenditures for operations of a farmer-owned plant derived in the local community is likely to be larger than that of an absentee-owned plant. For example, virtually all accounting, administrative and marketing functions will be provided locally, while these functions may be centralized off site for an absentee-owned plant.

2.) Farmer-owners of a cooperative or limited liability corporation (LLC) ethanol plant will participate in the profits through dividends. Dividends paid to farmer-owners represent additional income that is spent and invested largely in the local community, according to the study.

	Absentee Owned	Farmer Owned	Difference
	(Mil 2006$)	(Mil 2006 $)	(Mil 2006$)
Feedstocks	$40.18	$40.18	
Chemicals, Enzymes & Yeast	$0.00	$0.66	
Natural Gas	$15.23	$15.23	
Electricty	$2.31	$2.31	
Denaturants	$3.00	$3.00	
Water	$0.37	$0.37	
Direct Labor & Benefits	$1.60	$1.60	
Maintenance, Materials & Services	$1.30	$1.30	
GS&A	$1.50	$3.00	
Interest on debt	$0.00	$2.43	
Total Expenditures	$65.49	$70.09	$4.59
Impact from Operations			
Gross Output	189.9	201.9	12.0
Gross State Product	104.5	111.0	6.6
Household Income	37.5	40.9	3.4
Employment	1,106.0	1,184.0	78.0

The most significant difference in the economic impact of a farmer-owned ethanol plant comes not from operations but from the distribution of profits back to the farmer members.

The economic impact is directly linked to plant size and depends on the relationship between the ethanol plant and the local economy, specifically, whether the plant is locally owned. The analysis compared a 50-million-gallon-per-year, farmer-owned ethanol plant with a similar-sized, absentee-owned plant.

"By putting money directly into the pockets of local residents, farmer-owned ethanol plants have spurred economic growth in rural communities across the country," said Bruce Noel, chairman of the National Corn Growers Association (NCGA) Ethanol Committee. "When farmers and other local investors are given the opportunity to participate in the ownership of ethanol plants, the economic benefits to the community are magnified enormously."

Nearly half of all ethanol plants are owned and operated by farmer cooperatives or LLCs, and account for 38 percent of total ethanol production. However, during the last two years there has been a substantial influx of non-farmer capital into the ethanol market. According to the Renewable Fuels Association, only 2 of the 43 ethanol plants under construction are majority farmer-owned.

"It's unfortunate that there currently aren't more opportunities for farmers and other locals to invest in the plants being constructed in their communities," Noel said. "With locally-owned plants, the profits stay in the community." Though its members favor the local ownership model, NCGA recognizes many ethanol ownership models are necessary for the continued growth and success of the domestic biofuels industry.

"We are not opposed in any way to the continued development of absentee-owned ethanol plants; we understand the ethanol industry needs a variety of business models and equity sources to succeed," Noel said.

"Any ethanol plant, regardless of who owns it, is good for corn farmers and good for the U.S. economy," Noel added. "But if you're talking about the effects on the local economy and farm income, ownership matters. Those plants that are farmer-owned undoubtedly have a more pronounced impact on the local economy."*

For a complete transcript of the study log on to the National Corn Growers Association website at http://www.ncga.com

Preliminary Results Suggest Poultry Litter May Improve Rice Tillering

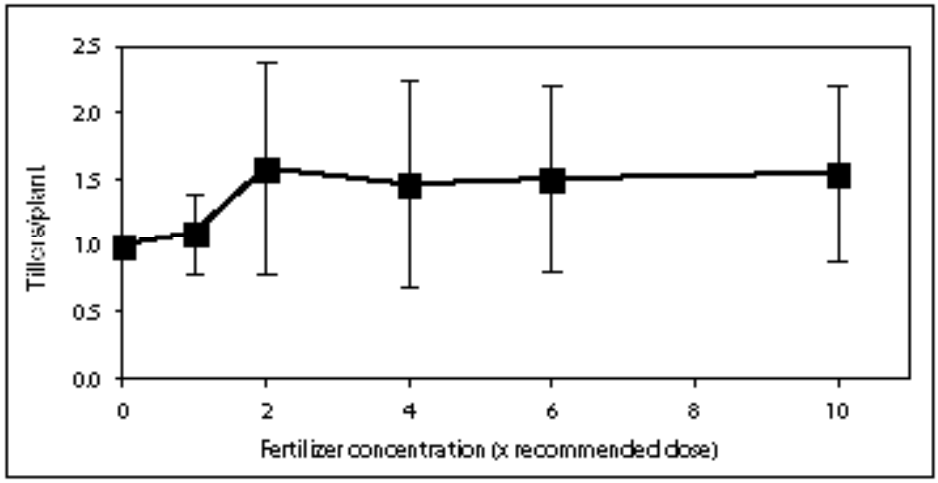
Poultry litter (PL) is sometimes used as a soil amendment for rice. While rice yield is known to often be improved by PL applications, few studies have been made to identify the specific changes that are affected in plant growth that result in yield increases. The improvement of rice growth in soil to which PL has been added is visually apparent (Fig. 1) and, at an early growth stage in our experiments, it was found that the number of tillers (shoots) increased in the presence of PL. Tillering is an important trait for grain production since each tiller has the potential to develop into a panicle, and is thereby an important aspect of rice yield improvement.

Research at the Dale Bumpers Rice Research Lab has resulted in the development of a relatively quick, small-scale, and controlled greenhouse system for looking at the effects of PL on young rice plants grown in pots. This system has several advantages over field experiments. Since the effects of PL can be observed early in rice growth by measuring early tiller production, tests can be done in a shorter time period, and greenhouse tests can also be carried out throughout the year. Additionally, the short test period and the greenhouse environment minimize the effects of secondary environmental factors.

The beneficial effects of PL have traditionally been ascribed to its nutrient composition. The PL used in most of our tests is pelletized from Oakley, Inc. in North Little Rock and is 3-3-3 for NPK. The PL is put on the soil before planting so that there is 0.3 g each of NPK for an 8-inch pot (this equates to ~82 lbs N/acre). Growth with PL was compared with growth with commercial fertilizer. The fertilizer Miracle Gro Complete is 20-20-20 plus micronutrients and is added every week. Adding fertilizer at 1x and 2x the recommended rate resulted in more tillers than when no fertilizer was added. But tillering did not further increase with more fertilizer, even when ten times the fertilizer recommended rate was added. For additional experiments, we used the 2x rate (0.07 g each of NPK is added each week to a pot) of fertilizer. But when PL was added along with the complete fertilizer, the number of tillers for each plant increased. Tiller induction by PL occurred in a number of rice cultivars including high- and low-tillering varieties.

Fig. 1. Example of the effect of different poultry litter (PL) and fertilizer treatments on rice plant (cultivar 'Jefferson') growth. The treatments are, left to right, PL and fertilizer, fertilizer alone, PL alone, and no amendments.

The induction is not limited to one source of PL. A variety of commercial pelletized PL sources from around North America were tested for their ability to induce rice tillering. As PL is comprised of the manure plus any other materials (such as bedding) that are discarded along with the manure, PL from different sources are different in make-up. Poultry bedding material varies with



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Fighting for Ag Disaster Aid on Capitol Hill Falls Short As Session Closes Without Vote

Supporters of a discharge petition came up about 20 signatures short of the number needed to force House leaders to bring long-awaited disaster assistance legislation up for debate and a floor vote.

A total of 198 House members signed the petition in the hours before the House recessed to return to the campaign trail on Sept. 29. Supporters needed 218 votes — a majority — to bring the measure sponsored by Rep. Collin Peterson, D-Minn., to the floor.

The discharge petition, which was introduced by Rep. John Barrow, D-Ga., will remain available during the session for members to sign.

"I am disappointed that House Republican leaders failed to stand up for our farmers and ranchers who are suffering and struggling to cope with the impact of disaster on their operations," said Peterson, ranking Democrat on the House Agriculture Committee. "Now these farm communities will have to wait at least until mid-November before Congress could bring up disaster assistance."

Congress is expected to return to Washington for a lame duck session after the Nov. 7 mid-term elections because of the fiscal 2007 appropriations bills and other legislative issues that have not been resolved.

The discharge petition, which was introduced by Rep. John Barrow, D-Ga., will remain available during the session for members to sign. Peterson said supporters of agriculture disaster assistance are optimistic that relief legislation will be considered after the elections.

"We are disappointed that it wasn't addressed this week, but we certainly will not give up on the fight to get disaster assistance out to our farmers and ranchers," Peterson said. "We are going to keep reaching out to Republicans and Democrats from across the country to be sure that we get a deal that will keep our rural communities afloat as they recover from disaster."

The Congress had been dealing with the agriculture disaster assistance issue since last year when the House Agriculture Committee and the House Appropriations Committee voted down amendments that would have provided payments to farmers who lost at least 35 percent of their crop to weather disasters in 2005 or 2006.

Earlier this year, the House Democratic leadership sent a letter to the speaker of the House and House majority leader, asking them to allow debate and a vote on agriculture disaster assistance legislation before Congress recessed. When they did not respond, Barrow introduced a discharge petition.

A coalition of more than 30 farm and allied organizations, including the National Farmers Union, American Farm Bureau Federation, Independent Community Bankers of America, the US Rice Producers Association, the USA Rice Federation and others have written to members of Congress several times urging them to support agriculture disaster assistance and to sign the discharge petition.

The Senate has passed similar legislation, but the language was removed from an emergency supplemental appropriations bill by a House-Senate conference committee after President Bush threatened to veto the measure. Farm-state senators tried to force a vote on a stripped version of their disaster assistance legislation just before the Sept. 29 recess but were also unsuccessful.

Peterson said the need for disaster assistance is clear. Natural disasters including hurricanes, floods, droughts, wildfires, heat waves and other weather-related events caused serious damage to crops and livestock in 2005 and 2006.

USDA has declared more than 71 percent of all U.S. counties primary or contiguous disaster areas this year. In 2005, 78 percent of counties were primary or contiguous disaster areas due to floods, droughts or the after-affects of Hurricanes Katrina and Rita.

"Farmers and ranchers in these communities are struggling and may not be able to stay in business without disaster assistance," said Peterson. ✻

Article by Forrest Laws
http://deltafarmpress.com/

Using Poultry Litter as a Fertilizer in Conjunction with Urea in Rice

Poultry litter has been used extensively to help restore productivity to precision-leveled soils in Arkansas. If poultry litter could be transported economically from western to eastern Arkansas and applied as a phosphorus and potassium source, knowledge of the litter's N-fertilizer value would enable growers to adjust preflood urea-N rates to avoid over-fertilization with N. The primary objective of this project was to determine the inorganic-N fertilizer value of poultry litter applied preplant to drill-seeded rice.

Five trials were conducted on silt-loam soils during 2003 and 2004 to compare N uptake and grain yield of rice receiving pelleted and fresh poultry litter preplant with the standard practice of urea applied preflood. Fresh and pelleted litter were applied at five N rates, ranging from 30 to 240 lbs N/acre, based on the total-N content of each litter source. The variety Wells rice was planted within one day of poultry litter application. Urea was applied at rates ranging from 30 to 150 lbs N/acre to a dry soil surface at the 5-leaf stage immediately before establishing the permanent flood. Net N uptake near panicle differentiation (1/4 inch internode) and early heading, and grain yield at maturity were measured to evaluate the treatments. The mean grain yields produced with the unfertilized control ranged from 78 to 120 bushels per acre depending upon site and year.

Poultry litter visually increased rice seedling growth between emergence and the 5-leaf stage at all site and years compared with rice that received urea preflood. Rice fertilized with fresh and pelleted litter was visually taller and greener before flooding than rice that received no poultry litter. Early season (i.e., preflood) weed growth, and perhaps weed seed

germination, were also stimulated by the poultry litter applied preplant. However, weeds were always effectively controlled by well-timed herbicide applications. Growers have expressed some concern over the possibility that poultry litter may contain weed seeds. Although the grassy weeds were usually similar among research sites, the broadleaved weed species differed among sites providing strong evidence that the litter itself contained few, if any, broadleaf weed seeds and may have simply stimulated weed seed germination and subsequent growth.

By 2 weeks after flooding, rice receiving preflood urea was green and growing vigorously. In contrast, plants receiving all but the highest N rates of fresh and pelleted litter applied at preplant, were pale green indicating N deficiency. By 3 weeks after flooding, rice receiving the highest N rate as fresh and pelleted litter, and the two lowest urea-N rates, also showed signs of N deficiency.

Averaged across poultry litter-N application rates and litter sources, rice recovered <10% of the litter-N by panicle differentiation and <25% of the litter-N by early heading, compared to 68% recovery of urea-N by panicle differentiation and 76% by early heading. On average, preplant incorporated poultry litter applied at rates of 2 to 2.5 tons litter per acre produced similar rice N uptakes and grain yields, as about 60 lbs N per acre applied, as urea to a dry soil surface preflood.

Net-N uptake data showed that recovery of urea-N near panicle differentiation and early heading was about 6 times more efficient as the recovery of the total-N present in poultry litter, suggesting that poul

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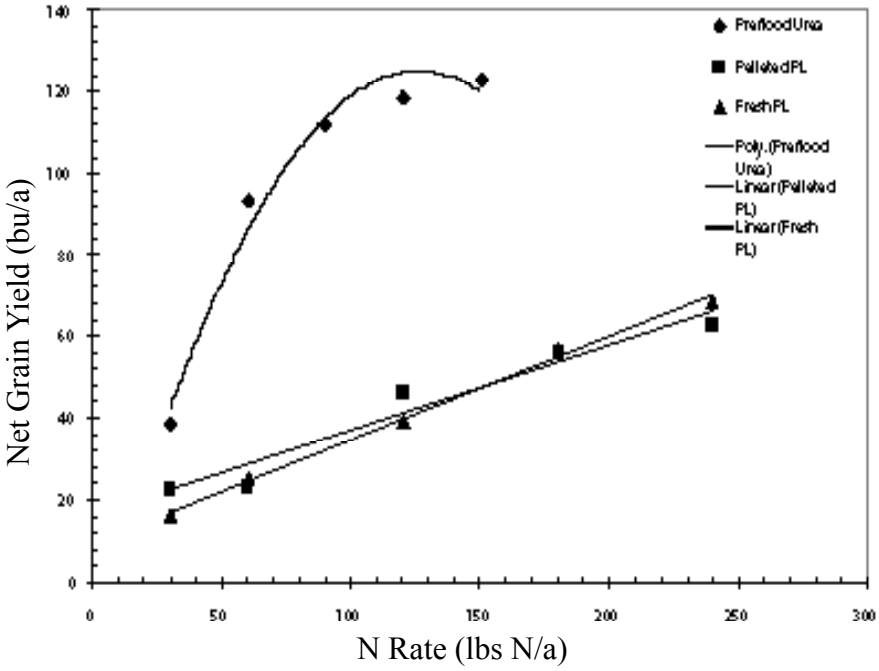
Poultry Litter and Urea continued...



Net rice grain yield at physiological maturity as affected by the N rate x N source interaction for research at the Rice Research Extension Center in 2003 on a silt- loam soil.

try litter alone is not a suitable N source for drill-seeded rice grown using a delayed flood. The near maximal mean net (net means greater than the unfertilized control) yields produced with 90 lbs urea-N per acre ranged from 62 to 122 bu per acre among site-years. In contrast, application of 240 lbs total-N per acre as fresh or pelletized poultry litter produced net grain yield increases ranging from 42 to 115 bu per acre. On average, maximum yields were produced by applying 125 lbs urea-N/acre immediately before flooding to these silt loam soils. Grain yields produced with the highest poultry litter rates (240 lbs N/acre) approached the maximum yields produced with optimum rates of urea at some sites. Yield data showed that 4 lbs of total-N present in poultry litter applied preplant is roughly equivalent to 1 lb of urea-N applied preflood. Research shows that the organic N in poultry litter mineralizes to inorganic N (plant-available N) quite rapidly and can be a good source of N for upland crops.

For example, research in Delaware showed that about 60% of the total N in poultry litter would mineralize during the first growing season. The lower efficiency of plant uptake of N from litter applied preplant by rice is also attributed to the rapid mineralization of organic N to inorganic N. A large proportion of the organic N applied in poultry litter is rapidly mineralized (converted to inorganic NH_4) during the 40 to 50 d period between seeding and flooding. The time between seeding and flooding also allows a large proportion of the mineralized N to undergo nitrification, which is the conversion of ammonium (NH_4) to nitrate (NO_3). Nitrates present in the soil are lost rapidly, via denitrification, when rice fields become saturated by rainfall, flush irrigation, or establishing the permanent flood. The rapid mineralization of organic N followed by N loss after flooding explains why seedling rice plants grew vigorously before flooding and showed N deficiency symptoms after the flood.

The study indicated that there was no difference in the N-fertilizer value between pelleted and fresh forms of poultry litter forms. Poultry litter or other animal manures are excellent sources of phosphorus and potassium, but provide only a limited amount of N for rice grown in the drill–seeded, delayed flood production system. Poultry litter, fresh or pelleted, applied at 1 ton per acre would supply, on average, the equivalent of 60 to 80 lb total N, 55-65 lbs P_2O_5 and 50-60 lbs K_2O per acre. Using these average nutrient rates (per ton of litter) and the research results, preflood urea-N rates could be reduced by 15 to 20 lb N/acre (~30-40 lbs urea/acer) when 1 ton poultry litter/acre was applied preplant as a P and K source.

Growers interested in using poultry litter as a P and K source should always have the litter tested to determine it's nutrient content. A number of factors can influence the nutrient content of poultry litter and include, but are not limited to poultry diet, number of flocks before cleanout, and type of poultry production. Knowledge of the litter's nutrient content can be used to apply the minimum rates of litter that are needed to supply the recommended rate of P to avoid over-fertilization of P with repeated applications. *

Article by Bobby Golden and Nathan Slaton, University of Arkansas. For more information email bgolden@uark.edu
This paper is published in its entirety in Soil Sci. Soc. Am. J. 70:1359-1369 2006.

New Rice Agronomist Joins the Beaumont Center

The newest addition to the Beaumont Center staff began working with his father in the family's rice fields before he completed his elementary education. Julio Castillo was born in the Republic of Panama, the oldest of 8 children. His father farmed rice, corn and vegetables, both for sale and the family table.

The high school Julio attended was a technical school specializing in agriculture. The students spent part of their time in the classroom, but a large portion of time was also spent in the fields, gaining hands-on knowledge in all aspects of agriculture.

Julio Castillo received an MS in Weed Science from North Dakota State University, and will now be a part of the rice research team at Beaumont.

While the rest of his siblings stayed close to home, Julio chose to venture out and expand his horizons beyond the family farm. After high school, he enrolled at the University of Panama to pursue a BS in Agronomy. After completing his degree, he continued to work at the university in the weed science project, focusing mostly on rice and corn.

Wanting to further his career opportunities, Julio applied and was successful in obtaining a scholarship to come and study in the United States. His first six months here were spent at the Southern Illinois University becoming fluent in English. After that he moved on to North Dakota State University where he obtained an MS in weed science.

He then returned home to lead the rice weed control project at the University of Panama, where he conducted research and taught classes. He remained in that position for nearly 15 years before he returned to the United States to work with Dr. Mo Way at the Texas A&M University Research and Extension Center at Beaumont and Jefferson county extension agent Kelby Boldt. Julio was responsible for scouting the fields enrolled in the rice IPM project. At that time, there were nearly 1000 acres, which had to be monitored in rotation on a weekly basis. Besides the demanding physical aspects of the job, it required an in-depth knowledge of disease, weed and insect identification. He would then make recommendations to the farmers, very much like the role of a consultant.

He returned to the University of Panama for a year, resuming his previous role in the rice weed science project. In August of 2001, Julio assumed the position of rice agronomist at Garrett Farms in Danbury, Texas. Jacko Garrett is one of the premier seedsmen in the state, and has a very high standard of operational procedures. Julio was responsible for following the rice physiology of newly released varieties, monitoring pests, and performing precise agricultural practices for main and ratoon crops. And being in the seed rice business, it was of utmost importance that all off types were removed from the fields before harvest. Even after the seed was harvested, Julio was charged with making sure the rice was dried and stored properly, with no chance of co-mingling.

After 5 years at Garrett Farms, Julio made the decision to take a position with the Texas Agricultural Experiment Station at Beaumont. He works in Dr. Ted Wilson's project, and is beginning to work with other projects as well.

Julio's wife, Vexi, is also a graduate of the University of Panama, where she obtained a degree in Agricultural Economics. During the 15 years that Julio was researching and teaching in Panama, she worked as a loan officer, specializing in farming related businesses. They have three girls, Jannie (16), Lynn (14), and Joi (12) who are attending high school at Harding Jefferson. Julio is very proud of his daughters, and says they are adapting well, totally fluent in English, and making excellent grades in school.

We are pleased to welcome Julio and his family to the Beaumont Center, and look forward to the many contributions we are confident he will bring to the project. *

State, National and International News...

USA Rice Sends Open Letter to Domestic Rice Purchasers

USA Rice Federation issued an open letter from the chairmen of the USA Rice Council, USA Rice Millers' Association, USA Rice Producers' Group, USA Rice Merchants' Association and US Rice Producers Association affirming the safety of U.S. long-grain rice.

The letter reiterates statements by the Food and Drug Administration and the U.S. Department of Agriculture that the long-grain rice containing the Liberty Link 601 trait is safe for human consumption and there is no need for testing within the domestic market.

"Here in Arkansas the Rice Council has been working diligently with USA Rice to continue delivering rice to U.S. consumers that is safe and healthful," Arkansas Rice Council Chairman Robert Petter said. "This letter should further the work that these groups have already done in assuring U.S. rice purchasers that there is no need to test rice that has already been declared safe for consumption by USDA. We have confidence in our government's work to ensure the safety of our food-production system."

To emphasize member communications, USA Rice Chairman Al Montna conducted a conference call yesterday afternoon for the five member boards, committee chairs, and other key U.S. rice industry leaders. USA Rice staff has provided Federation leadership with a summary of activities since USDA's Aug. 18 announcement that trace amounts of genetically engineered rice were found in the U.S. long-grain rice commercial supply.

Contact: David Coia, (703) 236-1444, dcoia@usarice.com

Raun Testifies Before Senate Agriculture Committee Texas Field Hearing

LUBBOCK, TX — "Preservation of the 2002 Farm Bill's safety net is the industry's top issue," L.G. Raun, a rice producer from El Campo, TX, told the Senate Agriculture Committee at a farm bill field hearing. Raun testified on behalf of the USA Rice Federation and US Rice Producers Association.

"There are clear benefits to extending the farm bill until a multilateral WTO agreement is approved by Congress. We would also note that farm programs continue to operate in a fiscally responsible manner. Fiscal year 2005 commodity program costs were $19 billion lower than projected when the 2002 farm bill was passed," Raun said.

All producers testifying on behalf of program crops including cotton, corn, sorghum, peanuts, and wheat, as well as sugar and dairy producers, called for extension of the 2002 farm bill.

Reps. Randy Neugebauer (R-TX) and Mike Conaway (R-TX) joined committee chairman Sen. Saxby Chambliss (R-GA) at the committee's eighth and final farm bill field hearing.

From USA Rice Federation

Glyphosate-resistant Johnsongrass in Argentina

Glyphosate-resistant johnsongrass has been identified in northern Argentina. While not an immediate threat to U.S. cropping fields, the development once again points to the necessity to prevent or slow a weed's ability to evolve herbicide resistance.

"I deal with weed resistance stewardship from a global perspective," said Michelle Starkey, Monsanto Roundup Stewardship said in an Aug. 29 interview. "So I've been talking with our Monsanto reps down in Argentina quite a bit about this. I've been working with them as they begin their research."

"It's an area that's been in production agriculture. They began (growing) Roundup Ready soybeans there probably about seven years ago. Prior to that (cropland) was mostly in things like dry beans."

How might this translate to the United States? "What we can say is there's no way to predict what the next resistant weed will be, whether glyphosate-resistant, an ALS-resistant weed, any resistant weed. There are places where glyphosate-resistant weeds have shown up in other countries and we have the same weeds in the U.S. but (they haven't become resistant)."

Excerpted from an article by David Bennett

Farm Press Daily

Poultry Litter continued...

locale (e.g., rice hulls are frequently used in Arkansas while pine shavings or peanut hulls are more likely to be used in Georgia). Litter components vary, too, with more bedding contained in broiler litter than in breeding and laying hen litter. Tiller induction occurred with each PL source, across apparent different varieties of chickens, bedding material, and feeds.

As part of the study tests were conducted for possible components of PL that could have a beneficial effect on tillering, including mycorrhizae, beneficial microorganisms of any sort, and water soluble components. However, none of these had a positive effect when isolated and tested for induction of tillering. Further studies will be conducted to determine the mechanism by which PL affects rice growth and development. As the genetic controls for tillering are not understood, PL may prove to be useful in triggering mechanism for studying this phenomenon.*

Article by Helen Miller, Plant Molecular Biologist Dale Bumpers National Rice Research Center, USDA-ARS, Stuttgart, AR. Email HMILLER@spa.ars.usda.gov

Poultry litter accumulates in great masses near production facilities. The litter is a combination of the chicken manure and whatever bedding material was used, often wood shavings or rice hulls.

Asian Soybean Rust Identified in Sentinel Plots at the Beaumont Center

Asian soybean rust (*Phakopsora pachyrhizi*) was positively identified in sentinel plots at the Beaumont Center. Dr. Tom Isakeit, Associate Professor and Extension Specialist on campus in the Department of Plant Pathology and Microbiology, identified the disease from foliage samples collected September 13, 2006. This is the first record of this exotic soybean disease in Jefferson County. The disease has been found in commercial soybeans in Liberty County this year.

Two fungal species, *Phakopsora pachyrhizi* and *P. meibomiae*, cause soybean rust and are spread primarily by windborne spores that can be transported over long distances. Asian soybean rust, *P. pachyrhizi*, the more aggressive of the two species, was first reported in Japan in 1903 and was confined to the Eastern Hemisphere until its presence was documented in Hawaii in 1994. Currently, distribution of P. pachyrhizi includes Africa, Asia, Australia, Hawaii, and South America and North America. P. pachyrhizi's rapid spread and severe damage

For more information on soybean rust, visit the web at http://www.ncipm.org/soybeanrust. Also, Dr. Tom Isakeit posts information on soybean rust at http://soybeanrust.tamu.edu

If you suspect soybean rust in your fields contact Dr. Mo Way at 409-752-2741 ext. 2231, email MoWay@aesrg.tamu.edu, or contact your local county extension agent.*

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