

AGNOTES

"Funds are available now," says Oertly and she encourages any landowner not to wait until the last minute to visit their local U.S. Department of Agriculture Service Center. "With the past few years' flooding, now is the time to look at the economic return on those marginal acres. Also, land coming out of the Conservation Reserve Program (CRP) may be eligible if it meets the wetland requirements," she notes.

For more information about the WRP, please contact your local NRCS office or the NRCS WRP Manager, Sara Thompson, Huron, at (605) 352-1281. For more information about technical assistance and conservation programs go to <http://www.sd.nrcs.usda.gov> or <http://www.sd.nrcs.usda.gov/>.

Neb. Fourth Grade Poster Contest Set

LINCOLN, Neb. — The spring-time severe weather season is quickly approaching and that means it's time for the annual 2010 Nebraska Severe Weather Awareness Poster Contest.

The contest, sponsored by Nebraska Association of Emergency Management, the National Weather Service and the Nebraska Emergency Management Agency, is part of the annual Severe Weather Awareness Week effort produced by emergency management directors across Nebraska.

The poster contest is open to all fourth-grade students in Nebraska public and private schools as well as home-schooled fourth-grade students.

Teachers are encouraged to have their students participate while teaching them about the hazards of severe weather in Nebraska. While not specifically designed to promote tornado awareness, tornadoes are the most common theme chosen for the posters. Lightning and flooding, which are also products of severe thunderstorms, are also good topic choices.

The first-place winner in the state contest is awarded a \$200 U.S. Savings Bond. The second-place winner receives a \$150 bond and third place wins a \$100 bond. The Nebraska Association of Emergency Management furnishes all the bonds. The fourth-place poster winner receives a \$50 prize sponsored by the National Weather Service.

Contest rules are as follows:

1. Poster artists must be a fourth-grade pupil in any Nebraska private, public or home school.

2. Entries must be related to the theme of severe weather safety and will be judged on originality, effort and accuracy. All entries must be on an 11 x 17-inch sheet of white paper. Any medium may be used (crayon, paint, markers, etc.). Only one entry is allowed per pupil and no joint entries (posters by more than one person) will be accepted.

3. Each school is encouraged to conduct the contest. All entries must be delivered to your local emergency management director/coordinator on or before Feb. 26.

4. Each entry MUST INCLUDE student name, age, complete home address, home telephone number, name of school, location of school and school phone number on the back side of the entry.

5. Teachers are encouraged to contact the local emergency management director to assist in the selection of the top three entries from their school. If the local director is unavailable or unknown, please contact Mark Meints, Poster Contest Chairman, (402) 223-1305.

6. First-, second-, third- and fourth-place winners will be chosen. All winners will be notified by telephone or mail. Prizes are First Place, \$200 Savings Bond; Second Place, \$150 bond; Third Place, \$100 bond and Fourth Place, \$50 cash. The four winners and their parents will be invited to the State Capitol on Thursday, March 10, for the presentation of their awards by Nebraska Gov. Dave Heineman.

7. Any questions regarding the Severe Weather Poster Contest should be directed to the local emergency management director/coordinator or to Mark Meints at (402) 223-1305, or e-mail gagecoema@diodecom.net.

Deadline for entries to be returned to local emergency management directors is Feb. 26. Posters will be judged during the first week of March by the Nebraska Association of Emergency Management president and representatives from the National Weather Service and the Nebraska Emergency Management Agency. Awards will be presented by Nebraska Gov. Dave Heineman at the State Capitol in Lincoln at 10:30 a.m. March 10.

Converting Years Of Scrub To Kilowatt Hours

Texas Entrepreneur Hopes To Turn Acres Of Mesquite Brush Into Power

BY CHRIS VAUGHN
McClatchy News Service

FORT WORTH, Texas — Randy Hill lives amid the fossil fuels of America, a place where natural gas and crude oil made millionaires and the landscape is dotted with pump jacks.

But Hill, who lives outside Abilene in West Texas, is spending much of his time nowadays talking about an unusual power source: wood chips.

The owner of a firm that manufactures trailers that dry agricultural products, Hill has turned his moneymaking attention from peanuts to timber waste, believing that the same process that revolutionized the peanut industry could do the same for biomass within the alternative energy industry.

Burning biomass for electricity generation, even in places as treeless as West Texas, is possible to Hill, who can't help but notice millions of acres of Texas ranchland covered with mesquite.

"For entrepreneurs, renewable energy is the greatest opportunity in years," Hill said. "It's an absolute hotbed for development."

A graduate of Abilene Christian University, Hill, 42, is a natural entrepreneur, a fast talker who can make even the agriculture industry and drying trailers sound like the most fascinating topic in the world.

In the last year, he has traversed the country meeting with university professors, power plant managers and industry experts in an effort to understand the biomass industry, find out its weaknesses and pitch his solutions to reduce waste and increase efficiency.

At least 110 power plants in the U.S. burn biomass, a tiny fraction of the electricity generation compared with coal, natural gas or nuclear. Texas has only a

handful of biomass plants — the closest is a 3-megawatt plant in Marshall. They are far more common in logging-heavy areas of the Pacific Northwest, Upper Midwest and New England.

Hill's home area of West Texas is growing as a source of wind power, but there's room for other sources, he said.

"Wind is only going to be an auxiliary source of power," he said. "It will never be a primary energy source. We will always need other sources of power."

Texas Tech University professor Michael Farmer, an expert in environmental and land management in the College of Agricultural and Natural Resources, said Hill "has got a neat idea" to use mesquite to power plants and generate electricity.

"It's an interesting idea because mesquite is an agricultural waste product, in that it's a nuisance for landowners," Farmer said. "Even if you couldn't get it to pencil out because the cost to harvest it would be more than its energy value, it might put it over the top because the negative effects of mesquite on the land have a value too."

The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy spends millions of dollars a year researching and funding projects on using biomass for alternative fuels, such as ethanol and biodiesel. But using biomass to generate electricity has only recently attracted much attention.

Beginning in the mid-1990s, Hill's company — APT Advanced Trailer & Equipment

— started selling specially made trailers to the peanut industry in West Texas so farmers could dry their product faster.

The trailers, which are the same basic frame as an 18-wheeler would carry, have a dryer that shoots heat under the floor and dramatically reduces the time needed to get the right moisture mix in peanuts.

It wasn't long before he was building hundreds of trailers a year for farmers in West Texas and the Southeast. Because most of his market is in the Southeast, his manufacturing facility is in Georgia.

"For entrepreneurs, renewable energy is the greatest opportunity in years. It's an absolute hotbed for development."

RANDY HILL

"It was hard for us to look at other uses besides peanuts because we were so busy," he said.

But about two years ago, as demand for the trailers began to lessen, Hill started investigating other possibilities for his drying trailers. Biomass is where his attention landed.

"I knew it would work," Hill said. "I just didn't know how long it would take and at what temperature to achieve the maximum efficiency."

Using biomass is not always the most efficient process, although most experts say it is far more environmentally friendly and cheaper than coal or natural gas. Burning wood, for instance, does release pollutants but not nearly as many as burning coal. Burning biomass also reduces the amount of material that has to go to a landfill.

Tons and tons of wood scrap are needed on hand for a boiler or power plant. The transportation to move it from place to place is more expensive than the loads of scrap the trucks are carrying. In the winter, the wood

is stacked in the cold and wet of Idaho or New Hampshire until it is needed, which means it absorbs a great deal of moisture. Wood with a high moisture content burns inefficiently, meaning more is needed and more carbon dioxide is released into the atmosphere. That's where Hill believes his trailers work.

He persuaded the University of Idaho, which uses a wood-burning plant to provide heat and air-conditioning to its campus, to try the trailers.

Darin Saul, the sustainability director for the university, said his preliminary results demonstrated that using the trailers to

reduce moisture by just 20 percent doubled the amount of energy the plant produced. It took about two days to dry the wood to its optimum moisture content,

Saul said.

"The trial was quite promising, and we are interested in moving ahead to the next step in the feasibility analysis before actually installing a system," Saul said. "The potential benefits are that the drying system will increase the amount of usable energy from burning wood, saving fuel and reducing greenhouse gas emissions associated with our operation."

But using natural gas or propane to power a dryer costs money, and that starts to defeat the purpose of using them in the first place.

"If a load of biomass is worth \$1,000, you can't afford to spend \$400 drying it," Hill said.

So he landed on another idea: Use the excess heat from a power plant's exhaust to dry the wood chips, which is what the University of Idaho did.

"You're recycling the free heat to create the product that in turns goes back into the plant," Hill said.

Other universities are quickly jumping into Hill's research.

North Carolina State University has applied for a grant from the U.S. Department of Energy to use the biomass for its campus power plants, and Hill has offered the free use of trailers for Iowa State University officials to see whether the same process works to dry "corn stover," the leaves and stalks left after harvest.

Hill has also met with Farmer and others from Texas Tech about researching whether mesquite could be dried similarly and used to power a plant in Texas.

"There is a huge opportunity for mesquite in Texas — huge," Hill said. "Just think of the implications from a ranch management standpoint. Think of the impact on the water table in West Texas because mesquite sucks a ton of water."

Farmer said he thinks the trailers might even be better drying grasses and agricultural stubble from crops such as wheat, all of which have a higher moisture content than wood.

Using the trailers to dry a product while simultaneously delivering it to a power plant where it's ready for immediate consumption would be a significant development in making renewable energy able to meet peak electricity demand, he said.

"One of the reasons we don't have a plant dedicated to it yet is that most places have set up bioelectricity production as an afterthought," he said. "Can we think of this as a separate economic activity and try to run a power plant that meets peak hours? Very few renewable energy sources meet peak electricity demands. Wind isn't doing it, at least right now."

Developing more biomass power plants would not eliminate the need for coal-fire plants, but it might mean that "lots of little sources" using biomass might mean the coal plants wouldn't necessarily need to expand, he said.

"The long-term environmental impact of that alone is quite substantial, he said.

EPA To Investigate Town Deemed Birth-Defect Cluster

BY LOUIS SAHAGUN
McClatchy News Service

LOS ANGELES — The U.S. Environmental Protection Agency has launched an internal investigation into its permitting and oversight in a farming community in California's San Joaquin Valley dominated by a hazardous-waste facility, agricultural pesticide spraying and truck exhaust that may be contributing to health problems including severe birth defects.

EPA regional administrator Jared Blumenfeld said "the internal investigation will run concurrently" with a broader inquiry in which state and local agencies will examine health and environmental issues facing Kettleman City, an enclave of 1,500 mostly poor, Spanish-speaking farm workers about halfway between San Francisco and Los Angeles.

Many residents there suspect that problems including a cluster of babies born with facial defects may be connected with a toxic-waste dump operated by Chemical Waste Management that is the only such facility in the state permitted to accept carcinogenic PCBs.

The ultimate scope of the ongoing investigations remains to be seen.

Blumenfeld said he plans to travel to Kettleman City in a rare personal visit by an EPA regional administrator eager to implement the Obama administration's commitment to environmental justice. The trip is expected to include a tour of the waste facility and conversations with parents of babies born with cleft-palate and cleft-lip conditions. Five babies of 20 live births over a recent 14-month period exhibited those facial deformities, three of whom died. Although the cases are a statistically tiny sample, they have

heightened long-standing concern that environmental factors may be making residents ill.

"My first goal is to listen to the community and find out what its needs are," Blumenfeld said.

Meanwhile, the State Department of Public Health acknowledged that it has not adequately explained its efforts to resolve concerns of residents, county officials and environmentalists. Earlier, a county health official insisted that the department had told him that the state had no intention of conducting a full investigation — an assertion left uncontested at the time by state officials.

"I don't think we have done a good job of clarifying what it is we are doing," said department spokesman Al Lundeen. "Our work is a review of the data, not an epidemiological review."

The state investigation includes an analysis of statistical information gleaned from the California birth defects monitoring program, and a regional review of "all medical records of children born with a suspected birth defect," Lundeen said.

"The county requested that we do that in August. We are wrapping up that work, reviewing our findings and preparing to share them with the community."

"At this point our investigation has not included door-to-door interviews in Kettleman City. If it is appropriate, we will."

Critics expressed concern that department investigators appear to be unwilling to walk the streets of the impoverished city, take blood samples and speak with residents.

"Sitting hundreds of miles away at your desk and computers is not an investigation, and would never be called that if this happened to a rich, white community," community activist Bradley Angel wrote the state agency.

Antibiotic Use In Livestock Considered By Congress

Last week's investigative story by Katie Couric on CBS "Evening News" shined a light on the growing problem of antibiotic resistance in medicine, a critical public health issue that is unknown to most Americans. As the CBS news segment pointed out, which took Couric to Arkansas and Iowa, the overuse of antibiotics in livestock and poultry feed and water in confined animal feeding operations (CAFOs) contributes significantly to antibiotic resistance.

Producers routinely feed antibiotics to pigs, cattle and chickens that are not sick, a practice that leads to the development of bacteria that are immune to antibiotics and undermines the effectiveness of these drugs in treating human diseases.

A bill now gaining momentum in Congress would curtail the overuse of antibiotics in food animal production, protect animal health, and ensure the effectiveness of a small number

of lifesaving antibiotics. To date, 120 members of Congress have endorsed the bill, "The Preservation of Antibiotics for Medical Treatment Act (PAMTA)." Nearly 300 stakeholder groups, including the American Medical Association, also support PAMTA.

It is estimated that livestock and poultry production accounts for about 70 percent of the antibiotics used in the United States each year.

Microbe Created To Turn Plant Waste Into Biodiesel

BY SUZANNE BOHAN
McClatchy News Service

WALNUT CREEK, Calif. — Researchers have engineered a microbe that produces biodiesel fuel directly from plant waste and grasses, according to a study published Thursday in the journal Nature.

The development was hailed as a major milestone in a federal initiative to develop new forms of transportation fuels to ease the country's dependence on foreign oil and to reduce carbon dioxide emissions.

"This is a very important advance," said Jay Keasling, chief executive of the Joint Bioenergy Institute in Emeryville, Calif., and acting deputy director of Lawrence Berkeley Laboratory in Berkeley, Calif., which manages the Joint Bioenergy Institute.

"One, we engineered (the bacteria) to produce a diesel fuel. What's important about that is, it's not ethanol."

Energy Secretary Steven Chu sent an excited message praising the advance, Keasling said. The institute, which opened in late 2008 with the mandate of developing commercially viable alternatives to corn-based ethanol within five years, has a \$125-million Department of Energy grant.

It opened after the passage of a federal law mandating for energy security and environmental reasons production of at least 36 billion gallons per year of biofuels by 2022. It also limits the amount

allowed for conventional biofuels, such as those made from corn, to 15 billion gallons annually by 2022.

Energy officials are pushing to limit ethanol production, partly because it uses a human food crop and valuable cropland to produce fuel. Ethanol also has to be delivered in trucks — a pollution source — because it corrodes pipelines.

"This was about making a fuel that would work with our existing infrastructure" for diesel, Keasling said.

Institute scientists in Emeryville collaborated with researchers at LS9, a biotechnology firm in South San Francisco, to engineer a bacteria that overcame the primary challenges of extracting fuel from tough plant material called "cellulosic biomass." The biomass can be taken from agricultural waste material or can be grown on marginal land unsuitable for farming.

The bacteria, a strain of the laboratory work horse *E. coli*, can convert materials such as straw, wood chips or grass directly into fatty acids used as fuels. These plant-derived fatty acids are called "nature's petroleum."

To enable that, scientists spliced in genes that allowed the *E. coli* to create an enzyme that breaks down the plant material, releasing complex sugars.

"It just reduces the overall cost, and now you have the possibility of doing it in a single pot instead of two," Keasling said.


Have A Story Idea For Neighbors?

Contact Lisa Hare
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