



“Hydromulch” and grass seedings dramatize impact of SP-1 and Residue

This fall we learned that our residue digesting biological, Residue, is a little *too* effective for one purpose.

Jonathan Mabry of Princeton Lawn Care in Princeton, IL (photo above) added Residue and three other AgriEnergy Resources products in a test area of “hydromulch,” a green-dyed slurry of 70% wood fibers and 30% cellulose blended in water. When the hydromulch dries, it protects lawn seedings from wind and rain erosion.

Three days later, Residue had digested the hydromulch to a gray color. Most of it had disappeared.

Untreated mulch remained bright blue-green (See comparison photo, upper right).

The hydromulch slurry was a nearly ideal food source for cellulose-digesting microbes in Residue.

“It’s a pretty neat demonstration of the breakdown capability of Residue,” says AgriEnergy Resources agronomist Ken Musselman.

But Jonathan says, “Since we’re

charging customers for the hydromulch, we don’t want it disappearing after three days!

“Instead, we’ll use the Residue another way for healthy lawns: After a full season of grass growth, we’ll propose to clients that they apply Residue as a way of speeding the breakdown of any heavy layer of thatch in the lawn.”

Jonathan also sees opportunities to use SP-1, Agri-Carb and Trace Pak to speed up grass emergence and root growth for farmers who need quick cover on waterways, filter strips, ditches and steep banks.

Jonathan plans to continue using three other AgriEnergy Resources products as standard ingredients of his hydromulch because of the beneficial impact on grass seed germination and rooting:

SP-1, a diverse blend of microbes, enzymes and other biological ingredients shown to stimulate root and shoot growth.

Two areas of same hydro-mulched grass seeding after four days



Residue organisms devoured the wood fibers and newspaper cellulose in hydromulch in about three days (left, above). The lawn turned out beautiful (below), but the contractor wants to keep hydromulch visible longer.



Agri-Carb, a source of sugars to provide quick-multiplying energy for the beneficial organisms in SP-1.

Trace Pak, a blend of seven trace elements which can help compensate for soil deficiencies.

“With these biologicals in the hydromulch, we’re seeing grass seedlings with inch-long roots at emergence,” says Jonathan. “Normally, roots of grass seedlings at this stage are only a quarter-inch long.”

The ultimate result is shown in the dense green lawn above in a photo taken in mid-October, about four weeks after seeding.

Jonathan tells us, “Sometime during that third week after drilling the grass and spraying on the hydromulch with those three biological products, the customer should probably think seriously about getting ready to mow that new lawn!”

For more details, read a transcribed visit with Jonathan Mabry on our website at: www.agrienergy.net

This letter brought to you by your AgriEnergy Resources consultant

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Will U.S. asset inflation soon spread into ag commodities?

Bill Fordham, marketing consultant and longtime friend of AgriEnergy Resources, is advising his clients, "The Great Grain Robbery of 1973 is being repeated, 30 years later. Instead of Russia being the buyer, this time it's China. The full needs of China aren't known, so grains will get really volatile."

Bill points to what's happening as Federal Reserve and other central banks fight deflation with the 'fire' of easy money and low interest rates: Homes and land values have ballooned. The S&P stock average is 30 times earnings.

"Inflation, especially in raw commodities, won't be measured in months, but probably in years," says Bill. (Bill's phone: 815-376-6101)

For starter or pop-up fertilizer next spring, we encourage you to try AgriEnergy's high performance, low salt 4-21-4. Call your AgriEnergy representative today for our competitive pricing.

2004 PREPAYMENT SCHEDULE

When we receive your prepayment on or before:	We'll credit your account with an additional:
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Dec. 15, 2003	6%
Jan. 15, 2004	5%
Feb. 15, 2004	3%
Mar. 15, 2004	2%

Example: We receive your check for \$1,000 on Dec. 15, 2003:

We credit the check amount to your account	\$1,000
Plus, we credit your account with an additional 6% of the check amount	+\$60
Total credit to you	\$1,060

NOTE: Money received will be applied first to any outstanding accounts receivable balance and then to prepay account.

Amos Martin, one of the many wonderful farmers we serve in our mission to improve soil stewardship, told us in an interview: "Without the Lord's blessing, we can accomplish nothing." That's the perspective in which we view another exciting year of research, growth and customer successes here at AgriEnergy Resources. We know that ultimately all our resources, including our knowledge, come from and belong to our Creator. Each Christmas season reminds us of how He loves us, and offers to renew our lives if we believe and trust Him. It's with this sense of honor and awe that we view all things He created, from the tiniest bacteria to our most abundant harvests. We want to thank you for sharing your friendship with us, and your confidence in us, another year! — *AgriEnergy Resources Staff Members*

Brook Rohrer joins AgriEnergy as Agronomy Assistant

Brook brings a strong soil stewardship background to AgriEnergy Resources, where she will assist our agronomists and other members of our technical staff. She grew up on a corn, soybean and cattle farm near Avon, IL, and graduated with a bachelors degree in Agribusiness from Illinois State University. Before joining our staff, she served as Conservation Reserve Enhancement Program Assistant with the Soil and Water Conservation Districts serving Marshall, Putnam and Bureau Counties.



Fluid Fertilizer School can help you manage nutrients

AgriEnergy Resources, as a member of the Fluid Fertilizer Foundation, is proud to help sponsor the popular Fluid Fertilizer School conducted by the Fluid Fertilizer Foundation. The school will be held Jan. 14, 2004 at the Collins Plaza in Cedar Rapids, IA. An impressive lineup of speakers will present information to help growers, consultants and fertilizer dealers make better management decisions in crop production. The main emphasis will be on increasing crop production and achieving better fertilizer efficiency.

Registration fee for the school is \$145 if paid before Jan. 2 and \$165 after that date. For additional information, contact the Fluid Fertilizer Foundation, 2805 Claffin Road, Suite 200, Manhattan, KS 66502, ph: 785-776-0273, fax: 785-776-8347, e-mail: fluidfertilizer@cs.com. Hotel reservations should be made directly with the Collins Plaza Hotel, 1200 Collins Road, Northeast, Cedar Rapids, IA, ph: 800-541-1067. Get special rates by mentioning the Fluid Fertilizer School when reserving a room before Dec. 23, 2003.

Mark your calendar for these conferences and seminars!

Our staff will either have displays or presentations at these farmer gatherings:

- Great Lakes Expo, Dec. 9 - 11 in Grand Rapids, MI
- ACRES Conference, Dec. 11 - 13 in Indianapolis, IN
- Ohio Fruit and Vegetable Show, Jan. 21 -23, Toledo, OH
- AgriEnergy Resources Seminar, Feb 10 - 11, Princeton, IL at the Galleria

Our fertility program can suit your equipment and tillage

You can help us fine-tune your fertility plan by completing our "Program Planning Information" fact sheet. It describes how you prefer to handle tillage, planting, side-dress, spraying and other management jobs. Call us, or download a copy from our website, so you can fax or mail us a completed fact sheet.

Soil-building success stories that show you the way

Two of these three farmers started with AgriEnergy Resources 15 years ago. Their soils and yields have steadily improved. They've reduced nitrogen fertilizer costs and they're more enthused about farming. The third is a dairyman who has seen yields rise, organic matter double and herd health improve after just seven years of Renewable Farming technology.



Darel Hein has built his heavy Scott County, IA, soils into humus-rich fields over 15 years.

This season, when southeast Iowa turned extremely dry in July and August, Darel harvested corn yielding up to 250 bushels in some fields, with only 70 units of nitrogen applied as UAN before planting.

Rotated fields average 200 to 220 bushels. For years, he has focused on building humus levels on fields which have slopes as long as a half-mile. Serious erosion can occur unless the land can sponge up moisture fast.

Darel says, "The key to any good soil stewardship program is to quickly convert crop residue to humus. Raw residue can't grow a crop. *Humus can!*"

"Fertile, high-quality soils resist erosion. Infertile and low-quality soils tend to erode. For every pound of carbon added to the soil through aerobic bacterial conversion to humus in the top few inches of soil, your soil can absorb four pounds of water in a rainstorm.

"Surface residue plays a minor role in reducing soil wind erosion. A strong wind blows residue into fencerows, ditches — or the neighbor's field. That's lost carbon and lost natural nutrients. Watch fields during dust storms. While soil lifts off one field from border to border, there's none lifting off from a field where abundant humus bonds soil into a granular structure!"

He speaks from 15 years of experience with AgriEnergy Resources concepts, and earlier research on

his own. Darel has always challenged conventional wisdom, and continues an ongoing debate with no-till promoters who claim soil must be "protected" with a heavy thatch of crop residue preserved on the surface.

Each fall, most of his corn ground is disk-ripped. Soybean ground is V-ripped — no disks or coulters.

In the spring, soil is so mellow that only a field finisher is needed to prepare a seedbed with perfect tilth.

All fields get AgriEnergy's Residue in the spring. Soybean ground going into corn is sprayed with a blend of nitrogen, Residue, and herbicide (Bicep II Magnum).

"Fall Residue application is ideal for the farmer with smaller acreages who can finish fall tillage in October," says Darel. "But with 965 acres of corn and 390 acres of soybeans, harvest may extend well into the freezing days of November."

Although agronomists and tillage experts marvel at Darel's soils, he continues to fine-tune his program and seek independent counsel.

Long before he began working with AgriEnergy in 1988, he retained a Brookside Laboratories crop consultant. Now he says, "I'm working with a Brookside consultant again, a pretty progressive one, basically to get an independent input on the whole fertility situation from someone who's not selling a product. He was lukewarm to some of this [AgriEnergy] stuff initially, but said to continue with it. He has now taken on an AgriEnergy dealership.

I think he has been seeing some things on my farm that he doesn't see a lot of elsewhere."

Amos Martin moved to his farm in Greene County, southwest Indiana, 12 years ago. This is an area with heavy clay soils.

"I'm a dairy farmer. Basically whatever I grow, I feed to my cows," says Amos. "So I've been able to see how AgriEnergy Resources fertility has improved our feed quality and herd health."

That transformation began seven years ago, when Amos first asked AgriEnergy field representative Ray Roettger for advice on coping with soils with only 1% to 1.5% organic matter. Conventional agronomists said this soil isn't suitable for alfalfa.

One fall, Amos decided to follow Ray's recommendations 100% on 45 acres of alfalfa which Amos had planned to plow after one more growing season.

"Next spring, my father was mowing that treated field and he said, 'Where did all this alfalfa come from? This sure overshot last year.'

"So now, most of our alfalfa fields get \$75 to \$100 an acre of AgriEnergy's program, including dry fertilizer after the first hay cutting. That investment comes back to us the same year. If one cutting makes 80 bales to the acre at \$3 a bale, that more than covers our costs, and the rest of the cuttings are free hay, I figure. I've had other fellows tell me I can't afford to spend that much. I say I can't afford not to."

Usually, an alfalfa stand remains



Darel Hein (left) typically sees massive corn roots like this reaching deep for nutrients and moisture. While corn was firing up to the ear on neighboring fields in a very dry August this season in southeast Iowa, his cornfields remained healthy and kept adding kernel weight. Top-end yields showing on the combine monitor: 250 bushels per acre.

Over the years, Darel has gradually intensified fall tillage of stalk ground, shifting from a light disking to chiseling 14 to 16 inches deep. The aerobic zone has deepened the “active digestion” depth in his soil. Darel challenges the no-till approach and surface residue mandate at every point, from erosion control to soil health, disease resistance, and cost per bushel.

highly productive four years or more with the improved fertility. Amos sees lots of solid-stemmed alfalfa, a signal of complete nutrition.

Adds Amos: “The quality of hay has completely changed for the better. Before we went to a biological fertility program, our hay would have a kind of rancid smell when I put it into the barn. Now it has that sweet, fresh alfalfa smell.”

Dave Wuethrich is one of three brothers operating a family farm corporation near Rensselaer, IN.

After several tough years in 1980-87, the Wuethrichs met AgriEnergy Resources founder Dave Larson at a 1988 seminar. The family’s profitability, enthusiasm — *and soil* — have climbed an upward trajectory since. Direct quotes from Dave Wuethrich sum up their 15-year adventure:

“In the mid-1980s, I’ll never forget how cloddy the seedbed was, year after year. Dad was teaching me how to run the planter then. It was

The Wuethrich brothers (left to right: Brad, Mark and Dave) began testing the AgriEnergy Resources program on two of their farms in 1988. Dave says: “We used to apply 180 units of nitrogen as anhydrous, in one application. Now our maximum applied nitrogen rate on corn is 125 units of nitrogen. With this, we produce up to 250 bushels of corn. We’ve done that for years. The universities say we’re nuts. Of course, when you first start off with biological fertility, you don’t cut back nitrogen too much because your soil hasn’t renewed enough biological life to generate nitrogen naturally from the previous year’s crop residue.” For the family, there’s another payoff: They’re enthused about farming and doing an excellent job of soil stewardship, improving their land long-term.



very difficult to get a decent seedbed unless the weather was perfect. That fact alone cut yield potential — some of the seed just doesn’t germinate.

“Dave Larson said that after three years of biological fertility, we would see the soil structure change. Actually, we noticed the change the first year, probably because we were starting to take care of the problem of soil imbalance. We stopped putting hog manure on the home farm. And after three years, there was no question that the soil had changed. Our aerobic zone had deepened 50% in three years.

“We had a two to three inch aerobic zone when we started in 1988, and now in 2003, it’s at least six inches. The structure of the soil is so good we can’t get a poor seedbed regardless of weather. I can’t remember having a poor seedbed since we started on the program. It only took three years on those first two farms — 328 acres total — to prove what AgriEnergy Resources

promised. After that, we went 100% AgriEnergy on all our farms.

“When I look back at our figures, I can say that virtually every measure is 10% better, or more. We went from average corn yields of 145 bushels to 167 bushels. Our top yield in the mid-1980s was 165 bushels. This year we’re getting 247 bushels, even with all the weather stress.

“Our humus levels increased, which is basically the bottom line of the AgriEnergy Resources program. It increases the humus level in the soil, and deepens the aerobic zone, which is the area where the beneficial biological activity works. If you understand what’s happening in the life of the soil, it’s easier to change your mindset and do things right.”

For detailed, transcribed, interviews with these farmers, visit our website!
www.agrienergy.net



A spadeful of soil on Darel Hein’s farm has a granular, crumb structure even during a dry August (left). An abundance of microbial life builds active humus, sticky polysaccharides and mycorrhizal fungi which help sponge up heavy rainfall and hold soil against wind erosion.

Low-organic clay soils such as those on Amos Martin’s farm in southwest Indiana also benefit greatly from conversion of crop residue into humus. This renewal cycle also leads to increases in earthworm populations, says Amos. His soils have risen from as low as 1% organic matter to 3.5% in seven years. But Amos is modest about the improvements on his land: “I wish I could manage a lot better, but I want to keep it clear that God created all these things, and without His blessing I’m not going to accomplish anything.”