

Gypsum can greatly improve clay soil structures

By **KATIE NICKAS**
AgriNews Publications

INDIANAPOLIS — While many people think of the well-known desert rose crystal when they think of gypsum, the soft mineral also is key to increasing soil quality and crop yields on farms with clay soils, including farms in Indiana.

A by-product of scrubbing flue gases for sulfur dioxide reduction at coal-burning plants, including the Indianapolis Power and Light Co., the mineral is an agricultural industry in itself.

Gypsum for agricultural uses has been branded Gypsoil and is marketed by the Gypsoil division of Beneficial Reuse Management Co. with offices in Indianapolis, Chicago and Milwaukee.

It is part of a new system called Nu-Till, launched through the AgSpectrum Co. Through Nu-Till, the company promises improved air and water exchanges, enhanced nutrient management strategies and equipment efficiencies and techniques on clients' farms.

"We have found that when we put Calcium sulfate on clay soils, the soil structure changes," said Ron Chamberlain, a specialist from Gypsoil in Indianapolis.

"It helps the soil structure four to five feet deep into the subsoil. At the



Ron Chamberlain

end of the drought in 2008, we had completely vigorous soils where we used the Gypsoil," he added. "This material deepens the soil profile over time and provides the opportunity to reduce the amount of applied nutrients."

The specialist spoke during Purdue University's 2010 Indiana Farm Management Tour in Brownsburg, where three participating farm families have been applying gypsum to their fields — in some cases, through variable rate technology.

Located in the Eagle Creek Watershed, these producers grapple

with water and nutrient runoff into the reservoir. Gypsoil agronomists have noted a successful reduction in phosphate, nitrate and sediment runoff since independent studies began on two of the farms five years ago.

"With gypsum, there is a lot more structure and stability in the soil," Chamberlain explained. "If they get rain, it doesn't dislodge the clay. It doesn't compact the soil. Gypsum allows oxygen into the soil, allowing soil biology to mineralize nutrients as they break down soil residue."

"As biological systems recover, the nutrient levels are coming up and contributing a lot as well," he said. "As the nutrient levels come up, you don't have to apply as much fertilizer."

"It's a foundational tool to change the soil," he stressed.

Chamberlain said gypsum applications helped improve profitability by up to \$270 per acre on Jack Maloney's farm in 2008 by saving on inputs and increasing yields, valuing corn at \$3 per bushel.

"We compare input costs on our farm versus neighboring farms and their practices — we found that while farmers paid for the added cost of gypsum, it reduced the cost of their phosphorus and potassium," he noted.

By the fifth year of applying Gypsoil, 50 fewer tons of fertilizer were applied to a 320-acre field, Chamberlain said.

A typical gypsum application costs between \$25 and \$40 per acre. While the mineral itself is low-cost, farmers must pay for trucking costs to ship it from the source.

It is applied like lime, but it does not replace it since lime is used to adjust soil pH. Gypsoil can be applied after harvest or anytime soil conditions allow.

Gypsoil recommends that farmers apply one to two tons per acre of gypsum every one or two years.

With the quick biological turnover of soil residues, farmers should begin seeing softer soils and other positive changes on their farms by their third year of gypsum application, Chamberlain noted.

"If you're in a no-till environment, you will notice the soil becoming much softer," he said. "In the second year, you'll begin to see a little more earthworm activity."

Every field is different, however, and some may take more time to respond to gypsum applications than others.

AgSpectrum representative David Pautsch said the beauty of the Nu-Till system is its basic science.

"With the biology of the soil going, at the bare minimum, it's about reduced levels of phosphorus and potassium," he said. "There are tons of nutrients in the soil, but not all of them are readily available for farmers' use."

"We always say we interview corn plants, ask them what they want or need," he added. "We work heavily with the U.S. Department of Agriculture to determine what the plant wants, whether it's corn, almonds or citrus."

AgSpectrum uses soil sampling on clients' farms to help them determine their best future investments, including tiling or other inputs, Pautsch said.

"It's just a bad paradigm that you have to add phosphorus and potassium," he said. "Often people will quit using both and find they won't have to add any. This is with any kind of crop, really."

Pautsch said Nu-Till is a new, embraceable option with sponsored research through both the USDA and Purdue to back it up.

"I don't know of any other system that is this comprehensive or that is start-to-finish," he said. "There are tillage systems and planter systems, but I don't know of any other system that uses nutrients and water management to cover all the bases."

Hoosiers prepare to 'Dig IN' at local food celebration

By **WHITNEY COLE**
AgriNews Publications

INDIANAPOLIS — It seems that with the warm weather come the thoughts of cookouts and grilling out and any kind of food outside.

A group of food-related organizations and food-minded thinkers are preparing to take eating outside to a whole other level.

On Aug. 29, 20 of the area's greatest food-thinkers will each be preparing a unique

dish based on the produce and protein grown on Indiana's farms.

"The event is really about highlighting and celebrating all things local-food related," said Ann Schmelzer, Indiana State Department of Agriculture program manager for entrepreneurship and diversified agriculture.

The event, titled Dig IN: A Taste of Indiana, was hatched and supported by a wide realm of people in the food

business including the ISDA, the Indiana Office of Tourism, Indiana Artisan, INShape Indiana, the Indiana Humanities Council, Kristian Andersen and Associates, the Neal Brown Hospitality Group, Slow Food Indy, the Indiana Wine Grape Council, Indiana's Family of Farmers, the Indiana Brewers Guild and the White River State Park.

Schmelzer said the educational opportunities at Dig IN will be huge.

"There will be two-ounce tastings of dishes prepared by 20 different chefs, and each of the chefs will be partnered with a Hoosier farmer to help tell the story of how the food is grown and prepared," she said.

The all-day event will be held at White River State Park, and the organizing committee still is looking for volunteers to help staff the food tents and help guests.

"This is an all-day family event, and we're hoping to have plenty to offer to everyone," Schmelzer said.

But, exclusively for the adults, there also will be a wine and beer garden hosted by the Indiana Wine Grape Council and the Indiana Brewers Guild.

"The event is about highlighting the agriculture production diversity in the state, and it is a great opportunity not only for the chefs to market, but also for farmers to do some outreach and explain what they do," Schmelzer added.

There is a webpage that offers a bit more information about the event — including

contact information for Schmelzer — but she said the page is being updated and will soon offer much more information about the event and ways to volunteer. That page is www.digindiana.org.

"Our hope is that Dig IN becomes an annual event," Schmelzer said.

Besides sampling food and meeting and greeting producers and chefs, attendees also will have the chance to experience the Indiana Humanities Council's Food for Thought traveling exhibit.

"At the Food for Thought booth, the Humanities Council will be collecting Hoosier food stories as part of the project," Schmelzer said.

A heritage Indiana garden will be a centerpiece of the Dig IN celebration to demonstrate some of the vegetables and fruits grown in the area.

"Our hope is that Dig IN help educate Hoosiers about where their food comes from and how it is prepared," Schmelzer said. "And we're hoping to bridge those two processes in a personal and tasty way."

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