

Expert: Use correct and careful timing of fertilizer applications

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URBANA, Ind. — Corn and soil microorganisms have much in common for nutritional needs, so from the corn plant's perspective it makes sense to use no-till farming practices, according to Dan Coffin, an agronomist at SPNC Corp. in Fort Wayne, Ind.

He presented this information and more at the Wabash County Soil and Water Conservation District 66th annual meeting March 16 in Urbana.

"The soil is designed to feed the plant and the plant is designed to feed the soil," he said. "Let the power of the earth work for you."

Soil health gets better with no-till, Coffin and other speakers said. In turn, healthier soil improves root growth, air

penetration, mineralization and availability of new nutrients. "Make it your number-one goal to improve your soil," Coffin said. "You don't want to fight the soil."

Healthy soil needs carbon, nitrogen, calcium, phosphorus, sulfur and micronutrients such as cobalt, he said. Similarly, corn needs carbon, hydrogen, calcium, phosphorus, nitrogen, sulfur and micronutrients. Often, corn will work with the soil and microorganisms, exchanging sugar for nutrients it needs through the roots.

The agronomist also emphasized the importance of timing chemical distribution such as nitrogen, phosphorus and others.

"Don't apply everything all at once," he said. "It's not optimum and (fertilizer and other chemicals) can wash away early," before the plant needs them.

Coffin said different corn hybrids have different nutritional needs as well. Workhorse hybrids need higher nitrogen levels and more water early, but will tolerate high potassium levels. Intermediate hybrids, however, use a mix of nitrogen forms, feed on them mid-season, have an average tolerance to

high potassium levels and need more water from early to the middle part of the season.

Racehorse hybrids such as ammonium nitrate prefer sidedressed ammonia with N-Serve and are less tolerant of high potassium levels, Coffin said. They also need more water post-tassel and are sensitive to many soil and post herbicide families.

He said it's important to get soil tested to determine what nutrients are missing. "Ninety percent of the soil tests I see show soil deficient in sulfur — which makes protein — and boron, which moves sugar," he said. "You have to supplement" these nutrients into the soil.

It's also important to note when the corn transitions from the vegetative to reproductive stage, Coffin said: "Corn needs sulfur to develop zein protein, which is the on/off switch for corn kernels to develop."

Farmers also must take care not to oversupply some nutrients.

"Never put more than 150 pounds of potash on corn," he said. "It's like crack cocaine to humans" and will create a nitrogen deficiency.