

Dry year leaves high nitrogen in soil

Sometimes you have to dig deep to find hidden treasure. That's the case when testing agricultural soils for levels of valuable plant-available nitrogen, a Kansas State University agronomist said.

Using a profile nitrogen test, taken to a depth of 24 inches, to verify nitrogen credits can provide valuable information to farmers, said Dorivar Ruiz Diaz, K-State Research and Extension nutrient management specialist.

"Most producers are unaware of the amount of nitrogen that may be present in their soils from the previous season," Ruiz Diaz said. "Plant available nitrogen can be present in the soil from fertilizer carryover, previous manure applications, or legume plowdowns."

This test can be especially useful in areas with relatively low rainfall and with reduced risk for nitrate losses by leaching or denitrification. In those situations, soil nitrate is likely to remain until it is taken up by plant roots.

After a crop failure due to drought, producers may find that much of the nitrogen applied to that crop remains in the soil and is available, he added.

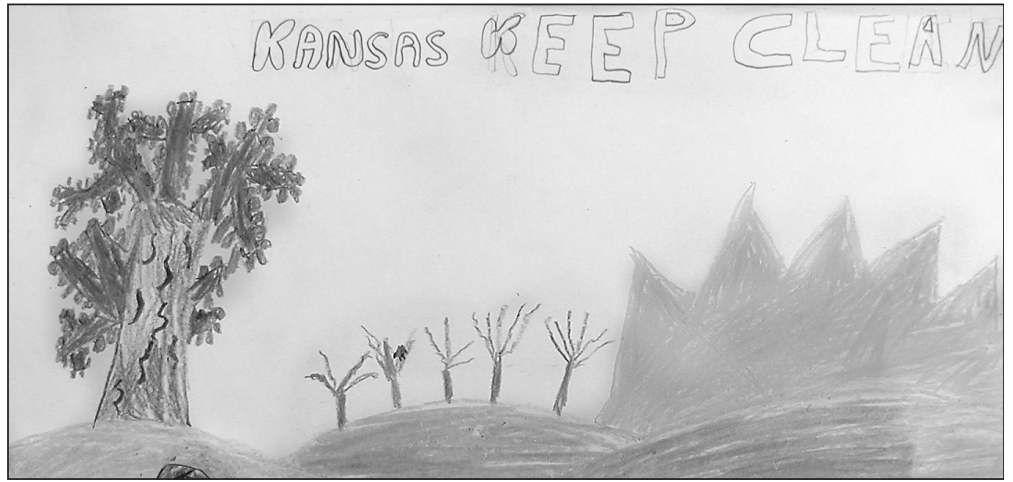
"Crop growth is normally extremely limited during a drought. As a result, the fertilizer nitrogen applied to that crop, as well as mineralized soil nitrogen, is typically not fully utilized," Ruiz Diaz said.

Proper soil sampling and testing is important for a good assessment of residual soil nitrate, he said. Annual sampling is necessary.

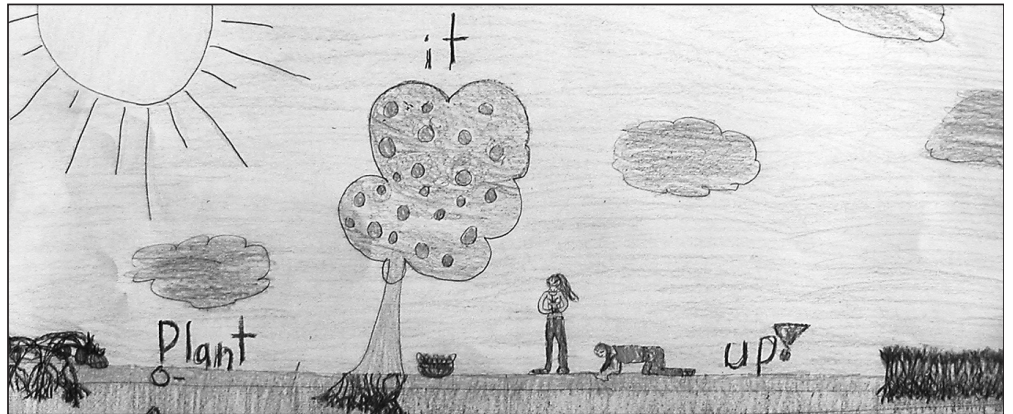
When taking samples for nitrate analysis, late fall or early spring is a good time to sample for the summer crops, and before planting for winter wheat, the agronomist said.

"Nitrate levels will fluctuate through the year, depending on soil temperatures and soil mineralization rates. The best time to take the sample is during cool periods after the previous crop has been harvested but before the soil warms up too much the following spring. "This will give farmers a good reading on how much nitrogen remains ... before mineralization begins to increase nitrate level."

More is available in the K-State publication MF-2586, "Soil Test Interpretations and Fertilizer Recommendations," at: www.oznet.ksu.edu/library/crpsl2/mf2586.pdf.



This poster was created by Chase Cersovsky, a fifth grader at Sacred Heart School, son of Troy Cersovsky.



This poster was created by Landee Li Kistler, a third grader at Heartland Christian School, daughter of Steven and Sally Kistler.

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