

Grazing Drought Stressed Corn

This is Ag Outlook on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. One option that some producers are considering is putting a fence around some of these corn fields and grazing them with cattle. This can certainly be done but this whole process needs to begin with a forage nitrate test. When we cut for hay or silage, we are harvesting the entire plant and feeding the entire plant. So we test the entire plant for nitrates. But when you turn cattle out into a drought stressed corn field, or even a corn residue field, cattle harvest the plant just a little bit differently. They take the leaves first and ears if there are any. These are going to be the most nutritious, and from a cow's point of view, the tastiest. Second on the grazing list is going to be the upper portion of the stalks. These are smaller diameter and generally have more nutrients. They're also easier to chew and digest. As you move lower on the stalk the cows eat less and less. There's more lignin, the stalk is harder and not as easy to chew. Nitrates are not evenly distributed in the plant. Leaves are generally lowest in nitrates and as you go down the stalk the levels increase. I recently harvested some random corn plants and broke them down into leaves, upper stalk - from the ear up and then lower stalk and had nitrates ran on each portion as well as a composite representing the whole plant. The whole plant came back at 3900 ppm, a little high but not bad. The leaves only were 500 ppm, the upper stalk was 1450 ppm and the lower stalk was 6500 ppm. If managed well that field of corn could be safely grazed. This has been Ag Outlook on the Talk of JC, 1420 KJCK, I'm Chuck Otte.

Nutrient Losses from Whole Plant Harvesting

This is Ag Outlook on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. When a grain crop is grown, the grain is removed and the rest of the plant remains on the field to provide organic matter cover on the soil surface and as the residue breaks down, the nutrients in that organic matter return to the soil for future crops. When you have entire crop removal, as we are seeing in many corn fields this year as we harvest the plant for emergency forage, it can change a lot of the dynamics and may well require additional fertilizer applications in future crop years. Grazing is different as we have more, recycling of nutrients, shall we call it, and many of the nutrients are returned to the field in the form of manure. But how many nutrients are being removed, what's the value of those, and how should we adjust future fertilizer rates. The best way to know for sure what fertilizer we need to add for the next crop is soil testing, obviously. But what we do know is that whole crop removal will increase loss of all three major nutrients, nitrogen, phosphorus and potassium. Our soils are high in potassium naturally and just one forage harvest crop isn't too big of a deal. A five ton silage crop, which isn't a lot, removes as much potassium as a 165 bushel grain crop. Phosphorus removal with that five ton whole plant harvest is only equal to a 50 bushel grain yield. Basically, to compensate for the phosphorus removal I would increase phosphorus fertilizer by 20 pounds on my next crop. Nitrogen - well, given the year, profile tests would be a good idea this year as will see carryover. This has been Ag Outlook on the Talk of JC, 1420 KJCK, I'm Chuck Otte.

Nitrate Mis-Understandings

This is Ag Outlook on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. In recent weeks I've been taking a lot of forage samples, corn mostly, over to the soils lab at K-State for nitrate testing. Much of the corn has been at a very manageable level. The sudangrass and forage sorghum samples have been higher which is pretty typical. Sorghums tend to develop higher nitrate levels especially under stress. Nitrate levels under 3,000 ppm are considered virtually safe under nearly all conditions and this is for samples being reported as nitrate. If it's reported as % nitrate or nitrate nitrogen or even potassium nitrate then we have to make some conversions. Reports from K-State Soils Testing Lab will be reported as just nitrate. Levels 3,000 to 6,000 are considered moderately safe in most situations. If animals are stressed limit feeds in this category to no more than 50% of the ration. Once we get in the 6,000 to 9,000 range we need to be a little more cautious at least for the first couple weeks we are feeding it. We need to blend these feeds with lower nitrate forages. We need to make sure cattle are already well fed when a bale of this is put out. Then for the first couple of days that we are feeding this we keep a close eye on the cattle. Most of the corn samples have been in the 3 to 6000 range. Nitrates do not disappear when the plant is harvested. If we get some rain, stop harvesting for about a week as nitrate levels often spike up for several days after a rain. If we get a good rain wait a few days and let's retest to see what the new post rain nitrate levels are. This has been Ag Outlook on the Talk of JC, 1420 KJCK, I'm Chuck Otte.

Disaster Declaration Updates

This is Ag Outlook on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. Last week the various USDA agencies had a meeting of the "County Emergency Board". Since we have a combined FSA office my counter part in Riley County and I sat down with the County FSA Director and the NRCS District Conservationist to discuss current status of crops, livestock and drought. For Geary County it is becoming apparent that the corn crop is taking a huge hit, and rain from now on isn't going to help that situation much at all. Hay production has also been severely impacted to the tune of 50% or greater loss. How many brome meadows have you seen that weren't even put up as hay this year? Wheat production was reduced 30 to 50%, on a farm or county average basis, not just individual fields. Soybeans and milo are quite simply too early to tell. All of this information is being sent to the State Emergency Committee and then later in the month the state report will be sent on to the Secretary of Agriculture. We are hoping for a secretarial disaster declaration, but it's likely to be well into August before we know on that. Requests have been sent in for emergency haying and grazing of CRP, not that we have that much. Because of the time that Geary County has already been in an Extreme Drought category we already are qualified for at least 3 months worth of payments to cattle producers as well as payments on water hauling. The FSA has been trying to wrap up acreage certification but they are hoping to have a letter out soon. This has been Ag Outlook on the Talk of JC, 1420 KJCK, I'm Chuck Otte.

Impact of loss of organic matter

This is Ag Outlook on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. A couple days ago I talked about the nutrient loss from harvesting a corn crop for forage, hay or silage, versus just the nutrients lost from a grain crop. We had a fair number of wheat fields that had the straw baled off as well. Wheat plant growth was about half of normal but that straw still contained nutrients. But what about the bigger impact of removal of that organic matter, that physical residue that normally remains after a grain harvest. And this would go for burning off of wheat stubble as well as straw harvest - in fact burning makes it worse. We know from 25 years of no-tilling that the presence of a good residue cover is going to virtually eliminate wind erosion and greatly reduce water erosion. More residue also improves water infiltration rates when it finally starts raining again. There's also the soil quality impact and that one is hard to measure. Increased surface residue ultimately leads to increased soil organic matter. Increased soil organic matter improves water infiltration and water holding capacity of soils. Keeping all other factors equal, increasing percent cover on the soil from 5% to 50% can increase wheat yields 10 bu/acre, soybean yields 15 bu/acre and corn yields over 25 bu/acre. I understand why so many of these corn and wheat fields are being harvested for forage. Extreme years bring the need for extreme measures. But be aware that these actions aren't without impacts and should, even need to, change how you manage those fields over the next couple of years. This has been Ag Outlook on the Talk of JC, 1420 KJCK, I'm Chuck Otte.