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Agronomics with livestock in mind!

COVER CROPS CAN ASSIST IN NUTRIENT MANAGEMENT

Many producers, who once worried about nitrogen in their manure, have shifted their focus to phosphorus. With Federal confined animal feeding operation (CAFO) rules in place, application of nutrients including P, must be well balanced and factored into the nutrient management plan. Many producers are turning to cover crops to help them.

As growers become larger and land bases tighten, farmers today find themselves in a bind – with lots of manure and limited acres on which to spread it. Researchers today are studying crop rotation systems that will remove more phosphorus from the soil, making it easier to maintain a desirable nutrient balance.

Cover crops and double-cropping of cereal grains is one tool to use. For example, researchers are comparing the use of triticale with wheat, barley, and rye.

In areas where forage is needed, triticale is a good option, removing up to 50 lbs of P per acre from the soil. Research data from Utah State University show a triticale/corn rotation removed 169 lbs of P per acre, compared to 154 lbs of P per acre removed in a wheat/corn rotation. The same trial showed corn silage alone removed 119 lbs of P per acre.

To help maintain proper P levels, a good soil testing routine is important. It is also important that we know the total phosphorus concentration we are removing through harvested forage. Test forages that are removed… don't go by book estimates ~ you could be grossly over– or –underestimating the amount of phosphorus removed. Test your manure; know how much P is being applied.

Timely harvest is always important in forage production, and harvesting cover-crops at boot stage is key. Most nutrient uptake occurs by the boot stage, so it is not beneficial to mature cereal grains. Triticale and rye are growing aggressively in the spring and are more suited to the forage producer. Both triticale and rye mature significantly earlier than wheat and barley, giving the producer the opportunity to get the second crop planted earlier. Barley and wheat both have good forage qualities, but there is a trade off. Timing of harvest delays the planting of the second crop, potentially affecting yield.

Barley and wheat are good options for those not producing forage. Many states are now paying the grower to plant fall cover crops. Here are some management factors that need to be considered in cover crop systems: Soil moisture at planting time; residue cover; closing the seed slot; lower soil temperatures at planting; and increased insect pressure all come into play.

Nature never tells us ahead of time if we will have a dry spring or a rainy spring. Either way, it affects us with cover crops. In drought-prone soils, the cover crop may pull enough moisture away that the ground could become hard and difficult to plant into.

In rainy springs, we have multiple factors that come into play. Harvesting a forage crop on wet soils can create a compaction issue. If we don't harvest the crop for forage and we have a rainy growing season, getting the crop sprayed and killed before it gets too big can be a challenge. If the cover crop gets too large, it can give us challenges in planting. To decrease these challenges, be sure to maintain your planter, making sure you have good coulters capable of cutting through the residue and opening the seed slot to the proper depth. If there is excess moisture in the spring, use wave coulters to reduce sidewall compaction. Also, make sure you get the seed slot closed properly. Consider using finger closing wheels on at least one side of the row unit. These help a lot if you are planting in wetter than normal conditions.

Row cleaners also help when planting in residue. Setting them properly is important. These are not a tillage tool; you just want them to remove the residue from the row. If you set them too deep, and move too much soil it can affect the seed depth.

Large amounts of residue and ground cover can result in lower soil temperatures at planting time. On the plus side, the residue helps to conserve moisture throughout the growing season.

Another challenge in cover crops is increased insect pressure. Adult cutworms migrate north in the spring and lay their eggs in unincorporated crop residues, or weeds such as chickweed and purple henbit. Products like WARRIOR are effective in controlling cutworms. Scout fields often and spray when you see 3-5% cut plants.

Slugs are another pest which can have an economic impact, especially in no-till. Crop residue or manure on the soil surface provides a food source for slugs throughout the winter and early spring.

Cover crops can be effective in many cropping systems, including no-till. Maximize the benefits of cover crops, manage them carefully, and they can be a useful tool in your nutrient management plans.

(edited from an article by Dervin Druist, GARST SEED ~ 2007)