Seeding a cover crop on fields that will receive manure anytime from fall through spring will improve manure management, safeguard surface waters, and improve overall soil tilth. Cover crops are beneficial on any field, but will be most valuable on fields planned for winter applications where manure will not be incorporated into the soil. Cover crops can be established by aerial seeding ahead of harvest or after harvest by drilling or using a bulk spreader.

Producers should plan ahead to know how many acres are needed for winter manure spreading and which fields are most acceptable for surface applications. Establishing cover crops on these acres has several benefits. For example seeding rye, wheat or oats in the fall will:

1. provide surface residue to adsorb manure;
2. provide surface residue to decrease run-off of soil and manure;
3. provide a growing crop to take up nitrogen and recycle nutrients to the following crop;
4. decrease surface compaction from winter conditions thereby improving infiltration of manure, reducing runoff;

and

5. improve soil tilth and structure, thereby improving future yields of all crops.

Corn silage and bean fields provide little residue and should be prime targets for seeding a cover crop, especially if fall or winter manure applications are planned on these fields.

Farmers that need to apply manure during the winter should assess the risk of each field for manure reaching surface waters and select fields with the lowest risk. Obviously, fields with no adjacent surface waters, minimal slopes, and no erosive areas are the first choice for winter applications. By Right to Farm Guidelines, liquid manure should not be winter applied if slopes are greater than 3% and solid manures should not be applied to slopes greater than 6%.

Cover Crops Benefit Winter Manure Spreading

MARI Assesses Risk of Winter-time Spreading

Cover crops will reduce the risk on fields but cannot work miracles on high-risk fields. High-risk fields should not receive manure when soils are frozen and/or snow covered. The Manure Application Risk Index (MARI) is an Excel spreadsheet that can be used to assess risks of winter-time spreading. It can be found at http://www.maeap.org/cnmp.
Oats are sometimes used as a cover crop in the fall. They need to be planted early enough (prior to September 1) to provide sufficient top growth before they are killed by winter conditions. Drilling oats after silage harvest will speed up germination and improve growth before frost. Since oats will winter kill, they provide no problem in the spring for no till or minimum tillage systems.

Bin run winter wheat has become a popular option for aerial seeding a cover crop in the fall ahead of harvest, but do not use treated seed. It also can be drilled or bulk spread after harvest. It is readily available and a 1.5-2 bushel per acre rate is cost-effective. Glyphosate (one quart per acre) plus ammonium sulfate (17 pounds per 100 gallons of water) in the spring will kill the cover.

Cereal Rye Useful for Fall Cover

Cereal rye has been used for years for fall cover. One to 2 bushels per acre will provide excellent cover. It will grow longer in the fall and begin growth earlier in the spring than wheat. It also will provide excellent winter pasture. The disadvantage with rye is that it grows very vigorously in the spring and needs to be controlled with herbicides or tillage before it gets tall and excessively dries out the soil. Rye that is 9-12 inches tall can be controlled with glyphosate (one quart per acre) plus ammonium sulfate (17 pounds per 100 gallons of water) in the spring.

Aerial seeding of wheat or rye should be done several weeks prior to silage harvest or during the early dent stage of corn. In beans, the seeding must be done prior to leaf drop. Do not use treated seed due to the potential for seeds to be transferred to the harvested crop.

Harvested silage fields planned for fall manure applications would benefit from spreading rye or wheat with a bulk spreader either just before or just after the manure is applied and then incorporating both the manure and cover crop seed with a tillage tool. Rye and wheat are fairly forgiving for seeding depth, especially when cover, not yield, is the goal.

Cover crops are well known for capturing nutrients, decreasing soil erosion, improving soil structure and tilth and the associated yield increases to the following crop. Research at Michigan State University has shown that the longer live roots are in the soil, the better for soil quality. They also provide a visual reminder to neighbors that agriculture is a valuable steward of the land.