

No-Till Notes:
Residue Management 1

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Managing high amounts of residue in no till farming is a challenge to new no till producers. How do you get a crop established in all that "trash." Crop establishment is the biggest challenge when beginning no till farming.

Residue management always begins at harvest. How are you going to best distribute the residue being taken in by the combine evenly across the width of the combine head? Chaff spreaders are a must when harvesting and planting into the field in no till. Large amounts of chaff left directly behind the combine will greatly hinder crop establishment when planting back into the field. Equipment manufactures are improving on the distribution of the residue behind the combine. It is very important that this residue be spread as evenly as possible.

On our farm we have switched to a stripper header to harvest our wheat, millet, and edible beans. We also plan to use the stripper header as we begin exploring the possibility of raising field peas in our cropping rotations. The stripper headers were originally designed to harvest field peas in England. It doesn't seem like to much of a stretch to use them in edible beans and they have proven themselves in small grains such as wheat, millet, and to a large extent in the rice producing regions.

We like the stripper header in our operation because it leaves the residue standing. If you use a conventional head to combine wheat the combine must spread this residue evenly across the width of the head in order to make planting easier. Assuming the combine does a good job of distributing this residue, the residue is still on the soil surface and the drill or planter must be able to handle the residue and cut through it. With the stripper header the residue is left standing so the soil surface has only the chaff on it. As long as the chaff spreaders are doing their job, there is little residue on the soil surface for the planter or drill to contend with.

Another advantage to using the stripper header and leaving the stubble standing is catching snow during the winter months. It doesn't seem to snow near as much as it used to, but any moisture you can trap during the winter is valuable in the next growing season. A disadvantage may be a heavy, wet, spring snow which may lay the standing residue over and make planting difficult in the spring. Another disadvantage is a big wind after planting in the spring which may move the residue around once the field has been planted and some of the residue has been detached from the soil.

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There are other ways in a no till farming system to manage the residue besides using your combine at harvest. Remember it is critical that your combine distribute the residue at harvest as evenly as possible. Chaff spreaders are a must!

When considering how to manage residue in your no till system a starting point is to consider your cropping rotation. Residue can be managed somewhat with your cropping rotation. If you feel a field is developing too much residue, or your planting equipment won't handle a lot of residue, consider growing a low residue crop such as a legume or a forage crop to reduce the amount of residue. I will caution you that once you get your no till farming system in place you will be amazed at how fast residue deteriorates even in our arid environment. My personal opinion is that there is no such thing as too much residue.

Another option for managing residue is grazing cattle to help control residue. The question of soil compaction is always raised when talking about grazing cattle. A good idea is to place the source of water for the cattle outside the field boundary if possible and reduce excessive foot traffic patterns wherever possible. In a no till system where soil structure has been improved, grazing cattle does not cause excessive compaction. Cattle don't cause excessive compaction in the pasture, and they won't in your no till fields once these fields have developed good soil structure.

Another consideration is your cropping sequence. Most row crop planters will handle a large amount of residue. Grain drills may or may not handle residue as well. If your grain drill won't handle a lot of residue, consider planting into heavy residue with your planter, and using the grain drill when there isn't as much residue. A cropping sequence such as winter wheat, corn, edible beans, and back to wheat will allow fewer residues when you use the drill. You would plant the corn into the heavy winter wheat stubble with your planter, plant the edible beans into the corn residue with your row crop planter, then plant the winter wheat using your drill into the lighter residue left by the edible beans.

Forage crops may also be used in your cropping sequence to control residue. The removal of the forage crop will greatly reduce the amount of residue in the field. An example may be a wheat, corn, forage rotation. This type of rotation does little to enhance soil quality since so much residue is being removed with the forage and there is a loss of nutrients when removing the forage, but may be a solution to managing residue to fit your equipment. You may have to rent a drill to handle the corn stalks when planting the forage crop.

Another consideration is the use of cover crops between crop rotations to manage residue. A cover crop will help break down the amount of residue from the previous crop between your cropping rotations. This is a fairly new concept in managing residue, but it is worth exploring in your cropping rotations. Producers are now using the cover crops not only

to manage residue, but to also provide additional grazing for their cattle. I'll discuss more about cover crops in a separate article.

When designing cropping rotations to manage residue, consider your cropping needs for your operation, the cropping sequence to manage the residue, and the equipment you currently own. You may also want to consider adapting the equipment you currently own to better handle the higher amounts of residue in a no till farming system.