

## Cover Crops On Prevented Planting Acres

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This year has been marked by prevented planting being taken on many acres. The main issues with prevented planting acres are erosion (wind and water), weed control and fallow syndrome with other nutrient concerns. All of these can be alleviated with a warm season cover crop mix.

Keeping the soil covered with plants instead of having bare ground by tillage or herbicide treatments, will keep soil in place this summer and the residue of frost killed plants will reduce erosion over the winter.

The largest immediate-term cost to a prevented planting acre is adding to the seed bank or the cost of preventing that from happening. Even timely tillage or herbicide treatments can allow weeds to go to seed. A 2-4" pigweed can go to seed, especially as the amount of daylight shortens. Planting fast growing cover crops that can outcompete weeds and then shade any others from germinating is an effective way to defer some the expense of tillage or herbicide applications to a one time seed purchase.

Fallow syndrome occurs when there is no plant growth in an area for an extended period and the active arbuscular mycorrhizae fungal populations are decreased because they depend on a living root for survival. These beneficial fungal populations assist plants in the uptake of phosphorus, zinc and other nutrients. Fallow syndrome is characterized by poor crop growth and phosphorous deficiency. Corn is most susceptible while the risk to soybeans is low. Planting sorghum-sudangrass which has a deep root system to help extract phosphorus and is a host for the mycorrhizae fungi with a lupin or buckwheat (which secrete acids that solubilize phosphorus) can mitigate fallow syndrome for next year's cash crop. Intensive soil sampling is still recommended to ensure adequate phosphorus is available for next year.

Nitrogen management is complicated on prevented planting acres especially if nitrogen was already applied for this season. Deep rooted grasses like sorghum-sudangrass can capture nitrates that have leached lower in the soil profile. Legumes such as cowpea can be added to a summer cover crop mix to add additional nitrogen for next year's crop. Cowpeas can fix up to 90lbs of nitrogen per acre. Be mindful of the carbon to nitrogen (C:N) ratio of cover crop mixes, especially before corn. If the C:N ratio is much over 24:1 then nitrogen tie up can be a problem for next year's crop. Waypoint Analytical can analyze the C:N ratio of cover crops. Chop up enough of the cover crop to fill a gallon freezer bag and request a C:N ratio on the submittal form.

In certain areas, selling the hay from a warm season cover crop can be an additional income steam as well as receiving the benefits of having a living root in the soil over the summer. Having a nitrate nitrogen analysis is recommended, especially if nitrogen was applied, to reduce the risk of nitrate poisoning in the hay.

The species mentioned in this article are general suggestions and should be tailored to the field's specific location, goals and circumstances. A summer annual cover crop mix should be made up of fast growing species with a combined C:N ratio of 24:1 and include a host for mycorrhizae fungi, a nutrient extractor and a legume for nitrogen fixation.