

# Crop Residue Management (CRM)

*Leaving residues from harvested crops is a healthy alternative to burning or tilling*

Crop residue management (CRM) typically is a year-round system beginning with the selection of crops that produce sufficient quantities of residue and may include the use of cover crops after low residue producing crops. In some systems, crop residues may be maintained on the surface for part of the year (non-crop periods) while growing crops in a clean tilled seed bed later. These seasonal crop residue management systems are environmentally friendly; however, crops planted and produced with crop residues left on the surface offer the most benefit to our natural resources. Systems of planting and producing crops in residues from previous crops include practices such as no-till, ridge-till, and mulch-till. Conservation tillage is any tillage and planting system that covers 30 percent or more of the soil surface with crop residue, after planting, to reduce soil erosion by water and wind and to provide water retention.

## **The Benefits of CRM --**

**Improved long-term productivity**-the less you till, the more carbon you keep in the soil to build organic matter and promote future productivity. Intensive tillage speeds the breakdown of crop residues and the loss of organic matter.

**Improved surface water quality**-crop residues help hold soil particles and associated nutrients and pesticides on the field. On some sites, conservation tillage can cut herbicide runoff rates in half, thus protecting lake, river, and stream water quality.

**Reduced soil erosion**-crop residues on the soil surface reduce erosion by water and wind. Depending on the amount of residues present, soil erosion can be reduced by up to 90 percent compared to an unprotected, intensively tilled field.

**Reduced release of carbon gases**-less tillage keeps naturally occurring carbon in the soil for use as organic matter. Intensive tillage releases soil carbon into the atmosphere as carbon dioxide where it can combine with other gases to contribute to global warming.

## South Carolina

## Fact Sheet

Natural Resources Conservation Service  
Columbia, South Carolina  
April 1999



### High-residue farming

High-residue crop production systems can provide food and shelter for wildlife

## No Need To Burn

Burning crop residues is unhealthy for the environment and also robs the soil of nutrients, such as nitrogen, which is released when residues are burned. CRM is an excellent alternative to burning and the benefits make it valuable to both the farmer and the environment.



*Burning crop residues pollutes the air, leaves the soil surface exposed to wind and water erosion, and presents a fire and smoke hazard.*

*Much like stirring a fire, tillage accelerates oxidation of organic matter. Though the destruction of crop residues and organic matter is less rapid in tillage than with burning, many of the negative impacts on the environment still occur.*



# Conservation Tillage Benefits YOU!



- ☞ Means less labor
- ☞ Saves time
- ☞ Reduces machine wear
- ☞ Saves fuel
- ☞ Reduces release of carbon gases
- ☞ Improves soil quality



- ☞ Protects seedlings from soil blowing
- ☞ Conserves soil moisture
- ☞ Improves water infiltration
- ☞ Reduces air pollution

## Tips on managing crop residues for successful conservation tillage systems:

\*Cut small grains high to leave residue standing and reduce the amount of residue on the ground.

\*Use a straw chopper and spreader on the combine to minimize windrowing.

\*Mow cotton stalks with a flail type mower, leaving stalks about six inches high.

\*Plant at an angle to the row pattern of the previous crop.

\*Attach a residue manager to the planter to clean crop residues from the row.

\*Sharpen coulters, as needed, to facilitate cutting of residues.

\*Select coulters that will cut through residues (notched, smooth coulters are typically the most suited for cutting residues).

\*Increase the pressure on the coulters to cut residues—tighten tension springs and add weight to the planter.

\*Mow or bale straw from any windrows.

\*Wait to plant after the dew has dried from crop residues.

\*Plant cover crops as needed to provide adequate residue.

**The soils of South Carolina generally have low cation exchange capacity (CEC—the ability of soils to hold nutrients and release them for use by crops) and CEC can be greatly increased through continuing use of no-tillage practices**

**For more information on CRM, contact your local USDA Service Center or call (803)253-3893**