

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATIONS**

**RESIDUE MANAGEMENT, SEASONAL
(Acre)
CODE 344**

DEFINITION

Managing the amount, orientation, and distribution of crop and other plant residues on the soil surface during a specified period of the year, while planting annual crops on a clean-tilled seedbed, or when growing biennial or perennial seed crops.

SCOPE

The work shall consist of managing crop residue in cultivated fields to conserve moisture, to increase infiltration, to reduce soil erosion, to improve soil tilth; to provide food and cover for wildlife and to reduce off-site transport of sediment, nutrients or pesticides. The specification will include residue management methods practiced during the part of the year from harvest until residue is either removed or buried by tillage for seedbed preparation.

MATERIALS

Seeding and tillage implements will be equipped to operate through plant residue and loose soil conditions without clogging and to maintain residue on or near the soil surface. Harvesting implements used for small grains will be equipped with devices that will distribute the crop residue over approximately 80 percent of the working width of the header, unless partial removal of the residue is intended.

Residues shall not be burned unless burning is an accepted practice in an integrated pest management (IPM) program developed and recommended by the University of Arkansas.

An estimation of the percent residue cover can be

made by determining the residue quantity (Table 1) and type (Table 4) produced for the crop yield after harvest and multiplying by the appropriate values for each residue–disturbing operation (Table 2) that is conducted or planned. If the estimate is desired in percent cover, use Table 3 to convert pounds of residue to percent cover.

Chemicals used in performing this practice shall be federally, state, and locally registered and shall be applied strictly in accordance with authorized registered uses, directions on the label, and other federal, state, and local policies and requirements. Chemical containers shall be properly stored and disposed of in a safe manner, according to state and local ordinances or procedures.

CULTURAL OPERATIONS

Managing for soil erosion control.

In rainfall erosion areas, the tillage and planting system shall provide enough surface cover to accomplish sheet and rill erosion objectives, as determined by the current approved sheet and rill erosion prediction method. With this practice, there will normally be less than 30 percent coverage of the soil surface required in accomplishing the sheet and rill erosion objectives, unless otherwise specified on the Residue Management Job Sheet. The soil may be disturbed or residue removed prior to planting and generally more than half the soil surface will be disturbed using chisels, field cultivators, disks, sweeps, blades, or plows. In wind erosion areas, the tillage and planting system shall maintain the amount of residue to accomplish soil erosion protection objectives, as determined by the current approved wind erosion prediction method. On areas where bedding is desired, bedding shall

be done simultaneously with seedbed preparation. On cotton fields, rows may be hipped as long as 30 percent residue remains on the surface following the tillage operations.

Planting shall be performed as nearly as practical across the slope. Follow fragile residue-producing crops with non-fragile residue-producing crops and follow low residue-producing crops with high residue-producing crops. Do not use fragile, low residue producing crops more than two consecutive years.

Managing for wind erosion control.

Consider the amount of residue needed to reduce young plant damage caused by strong wind in Northeast Arkansas. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed to prevent wind erosion. The remaining residue shall be maintained on the surface through periods when soil erosion by wind has the potential to occur.

Any tillage that occurs during the management period shall be limited to methods which leave residue on the surface and maintain the planned cover conditions.

Managing for pest reduction.

Weed control shall be accomplished with herbicides, cultivation, cover crops, and crop rotations. Maintain a diverse crop rotation that will disrupt life cycles and not provide carry over diseases. Manage chemical diversity to reduce the potential of resistance to applied chemicals.

Managing insect populations requires early detection and control to keep populations below an economic loss threshold. Monitor border areas for potential population expansions and control prior to infestations of the cropping area, where feasible. Tillage or chemical application operations will be timed with crop rotations to disrupt pest life cycles to prevent population growth beyond the economic thresholds.

Managing for soil organic matter content.

Residue shall not be burned. Crop rotations will consist of at least 50 percent non-fragile, high residue-producing crops. Conduct a periodic soil test to monitor levels of soil organic matter. Additional organic biomass in the form of livestock waste and/or increasing the intensity of the crop rotation and reduction of tillage operations may be needed to reduce the potential of further soil organic matter degradation.

Managing for wildlife food and cover.

Residue height, amount, and time period shall be determined using an approved habitat evaluation procedure. Residues shall not be removed unless it is determined by the habitat evaluation procedure that removal would not adversely affect habitat values.

Determine the primary management purpose or objective when planning pest management activities.

Leaving one or two rows of unharvested crop standing at intervals across the field can enhance the value of residue for wildlife habitat. Unharvested crop rows have the greatest value when they are adjacent to other cover types, such as grassy or brushy areas or woodland.

Managing for off-site transport of sediment, nutrients or pesticides reduction.

The amount and orientation of residue required to reduce off-site movement of agricultural chemicals during the specified period shall be determined using the appropriate assessment tool(s) [Windows Pesticide Screening Tool (WIN-PST), Phosphorus Index (PI), Leaching Index (LI), erosion prediction technologies, or other recognized tools] for the site conditions.

OTHER REQUIREMENTS

Partial removal of residue by means of haying or grazing shall be limited to the amount needed to

meet the desired objectives.

Tillage systems often create restrictive or compaction layers that inhibit water infiltration and root penetration. Depth of these layers should be should be assessed to determine type of implement that will penetrate below the restrictive layer during a period when soil moisture is low so that the layer will be temporarily fractured. Attempting to treat a

compaction layer when soils above the layer are moist or wet will normally increase the compaction problem.

The owner, operator, contractor, and other persons shall conduct all work and operations, in accordance with proper safety code for the type of equipment and operations being performed with due regard to safety of all persons and property.