

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

CROSS WIND STRIPCROPPING

(acre)
CODE 589B

DEFINITION

Growing crops in strips established across the prevailing wind erosion direction, and arranged so that strips susceptible to wind erosion are alternated with strips having a protective cover that is resistant to wind erosion.

erosion direction, the width of these strips shall be correspondingly reduced.

PURPOSES

This practice may be applied as part of a conservation management system to support one or both of the following:

- * Reduce soil erosion from wind.
- * Protect growing crops from damage by wind-borne soil particles.

c. Arrangement of Strips:

Strips susceptible to wind erosion shall be alternated with strips that provide protective cover.

Crops shall be rotated so that protective cover is maintained in alternate strips during those periods when wind erosion is expected to occur.

Two or more strips having protective cover may be next to each other, but strips susceptible to erosion must be separated by a strip providing protective cover.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland, or other land where crops are grown.

d. Vegetative Cover:

Vegetation in a stripcropping arrangement consists of crops grown in a planned rotation.

Alternate strips shall be crops or crop residues that provide protective cover during those periods when wind erosion is expected to occur.

CRITERIA

General Criteria Applicable To All Purposes Named Above

a. Number of Strips:

A cross wind stripcropping system shall consist of at least two strips.

Acceptable protective cover includes a growing crop, including grasses, legumes, or grass-legume mixtures, standing stubble, or tilled residue with enough surface cover to provide protection.

Additional Criteria To Reduce Soil Erosion From Wind

b. Width and Direction of Strips:

Strips having protective cover and managed as part of a crop rotation may be the same width as the erosion-susceptible strips or may be narrower, but in any case shall not be less than 25 feet.

The effective width of strips shall be measured along the prevailing wind erosion direction for those periods when wind erosion is expected to occur and for which the system is designed.

Strip width shall not exceed that permitted by the soil loss tolerance (T), another planned soil loss objective, or the maximum permissible width specified in this standard.

The maximum width of strips, measured perpendicular to strip direction, shall not exceed 660 feet.

When the direction of erosion-susceptible strips deviates from perpendicular to the prevailing wind

On fields in grain-fallow systems, maximum width of the alternate grain and fallow strips shall not exceed the following:

100 feet for clean till fallow.
200 feet for stubble mulch fallow with all
crop residues left on fields.

The width of strips shall be determined using current approved wind erosion prediction technology. Calculations shall account for the effects of other practices in the conservation management system.

Additional Criteria To Protect Growing Crops From Damage By Wind-borne Soil Particles

The effective width shall be measured along the prevailing wind erosion direction during those periods when crops are susceptible to damage by wind-borne soil particles.

The width of strips shall not exceed the width permitted by the crop tolerance to wind erosion*, as specified in applicable Field Office Technical Guides, other accepted technical references, or another planned crop protection objective.

* Crop tolerance to wind erosion is the maximum rate of soil blowing that the plants can tolerate without significant plant damage due to abrasion, burial, or desiccation.

The width of strips shall be determined using current approved wind erosion prediction technology to estimate wind erosion during specific crop stage periods. Calculations shall account for the effects of other practices in the conservation management system.

CONSIDERATIONS

The effectiveness of this practice is maximized when the strips are oriented as close to perpendicular as possible to the prevailing wind erosion direction for the period for which the system is designed.

Transport of wind-borne sediment and sediment-borne contaminants offsite is reduced by this practice when used in a conservation management system.

Where this practice is used in combination with the practice, CONSERVATION CROP ROTATION (328), the stripcropping design must be consistent with the crop sequence.

Strip widths may be adjusted, within the limits of the criteria above, to accommodate widths of farm equipment to minimize partial or incomplete passes.

Alternative practices which may be used to separate erosion-susceptible strips include CROSS WIND TRAP STRIPS (589C), HERBACEOUS WIND BARRIERS (422A), or WINDBREAK/SHELTERBELT ESTABLISHMENT (380).

In areas where sheet and rill soil erosion are also a problem, strip cropping should be limited to nearly level land or fields where strips can be laid out across the slope. Strips that require up and down hill farming should not be used. This practice should not increase the potential for sheet and rill soil erosion.

Where practical, no till and strip till residue management should also be used.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that during critical periods, such as spawning, eggs in gravel's, and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example there should be no disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment

depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Wind-borne sediment accumulated along strip edges shall be removed and distributed over the surface of the field as determined appropriate.

Water Quantity

This practice reduces surface evaporation and increased the amount of available soil moisture. This practice may trap and distribute snow that will increase the quantity of soil moisture.

1. Expect effects on the water budget, especially on evaporation and transpiration.

Water Quality

This practice may reduce the amount of wind blown sediment that will be deposited in water courses or ditches. This sediment is available to be transported into the surface water when a runoff event occurs. Any trapped snow would increase the amount of soil moisture at snow melt and increase the possibility of solute pollutants being carried into the root zone.

1. Expect effects on erosion and the movement of sediment and sediment-attached substances by wind to surface waters.
2. Expect effects on the use and management of nutrients and pesticides and resulting effects on surface and ground water quality.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard.

Specify maximum width of strips and direction in which strips and planting shall be made.

Specifications shall be recorded using approved specification sheets, job sheets, or other acceptable documentation.

OPERATION AND MAINTENANCE

Erosion-resistant strips in rotation shall be managed to maintain the planned vegetative cover and surface roughness during periods when wind erosion is expected to occur. The protective cover must be adequate to inhibit the initiation of wind erosion and to trap saltating soil particles originating upwind.