

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.

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.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland.

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, of which one is planted to a wind erosion resistant crop or leaves a wind resistant residue or fallow.

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

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.

The first strip in the system on the upwind boundary of the field will be protected by a stable barrier when in a condition that is potentially susceptible to erosion.

d. Vegetative Cover:

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

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

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

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), other planned soil loss objective, or the maximum permissible width specified in this standard.

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 sensitive 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 Table 1, Estimated Crop Tolerances to Blowing Soil, or other 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.

Table 1. Estimated Crop Tolerances to Blowing Soil Maximum Rate in Tons/Acre/Year				
0	0.5	1	2	5
Carrots	Peas	Alfalfa	Com	Barley
Cucumbers	Lima Beans	Asparagus	Sorghum	Buckwheat
Lettuce	Snap Beans	Broccoli	Sweet Com	Oats
Onions	Tomatoes	Cabbage	Sunflower	Rye
Spinach		Cotton		Wheat
Squash		Eggplant		
Table Beets		Peppers		
Watermelons		Potatoes		
		Soybeans		
		Sugar Beets		

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 cross wind stripcropping 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.

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 Conservation Practice Standards 589C, Cross Wind Trap Strips; 422A, Herbaceous Wind Barriers; or 380, Windbreak/Shelterbelt Establishment.

PLANS AND SPECIFICATIONS

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

Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, 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.

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