

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, or other land where crops are grown.

CRITERIA

General Criteria Applicable To All Purposes Named Above

1. Number of Strips

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

2. Width and Direction of Strips

- a. 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.
- b. The maximum width of strips, measured perpendicular to strip direction, shall not exceed 660 feet.
- c. 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.
- d. Strip orientation shall not result in an angle of deviation that exceeds 45 degrees during the critical period when wind erosion is expected to occur. In Ohio the "Critical Period" is April thru Mid-June unless local field crops or situations require additional periods of protection. The angle of deviation is the angle between the imaginary line perpendicular to the long side of the strip and the prevailing wind erosion direction.

3. Arrangement of Strips

- a. Strips susceptible to wind erosion shall be alternated with strips that provide protective cover.
- b. Crops shall be rotated so that protective cover is maintained in alternate strips during those periods when wind erosion is expected to occur.
- c. 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.

4. Vegetative Cover

- a. Vegetation in a stripcropping arrangement consists of crops grown in a planned rotation.
- b. Alternate strips shall be crops or crop residues which provide protective cover during those periods when wind erosion is expected to occur.
- c. 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

1. 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.
2. Strip width shall not exceed that permitted by the soil loss tolerance (T), other planned soil loss objectives, or the maximum permissible width specified in this standard.
3. 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

1. 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.
2. The width of strips shall not exceed the width permitted by the crop tolerance (Crop tolerance for wind erosion is the maximum rate of soil blowing that the plants can tolerate without significant plant damage due to abrasion, burial, or desiccation) to wind erosion as specified in the Field Office Technical Guide, Section I, other accepted technical references, or other planned crop protection objective.
3. The width of strips shall be determined using current approved wind erosion prediction technology to estimate wind erosion during specific critical crop periods. Calculations shall account for the effects of other practices in the conservation management system.

CONSIDERATIONS

1. The effectiveness of 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.
2. Transport of wind-borne sediment and sediment-borne contaminants offsite is reduced by this practice when used in a conservation management system.
3. Where this practice is used in combination with the practice, CONSERVATION CROP ROTATION (328), the stripcropping design must be consistent with the crop sequence.
4. Strip widths may be adjusted, within the limits of the criteria above, to accommodate widths of farm equipment to minimize partial or incomplete passes.
5. 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).

PLANS AND SPECIFICATIONS

1. 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.
2. Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation. The minimum documentation for this practice is outlined on the last page of this standard.

OPERATION AND MAINTENANCE

1. 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.
2. Wind-borne sediment accumulated along strip edges shall be removed and distributed over the surface of the field as determined appropriate.

REFERENCES:

National Standard Cross Wind Stripcropping (589c), June 1994
Jobsheet 589c
NRCS National Agronomy Manual
Wind Erosion Equation (WEQ)

Practice Documentation For: <i>Cross Wind Stripcropping - 589b</i>
The following documentation must be in the case folder or engineering subfolder.
Practice Planning
<ol style="list-style-type: none"> 1. Is the practice part of a conservation plan? 2. Have the purpose(s) for the practice been identified? 3. Is the location of the practice identified on a map or plan drawing?
Practice Design
<p>Have the following design criteria been addressed?</p> <ol style="list-style-type: none"> 1. The number and width of the strips. 2. The direction of the strips. 3. Arrangement and cover of the alternate strips. 4. Acres
Practice Installation / Application
Does the practice meet the minimum criteria for the planned purpose(s)?
<p>Have the following criteria been documented in the assistance notes or practice jobsheet?</p> <ol style="list-style-type: none"> 1. The number and width of the strips established. 2. The direction of the established strips. 3. Arrangement and cover of the alternate strips. 4. Acres established.
Practice Deficiencies
If applicable, have the practice deficiencies been communicated with the decisionmaker?
Practice Maintenance
<p>Have the following maintenance actions been communicated to the decisionmaker?</p> <ol style="list-style-type: none"> 1. 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. 2. The protective cover must be adequate to inhibit the initiation of wind erosion and to trap saltating soil particles originating upwind.
Other Comments: