

CROSS WIND TRAP FILTER STRIP

CONSERVATION DESIGN SHEET

AGRONOMY SERIES March 1997



Natural Resources Conservation Service

Michigan



Cross wind trap filter strips installed along drainage ditches [Summer - top] [Winter - lower]

What Is A Cross Wind Trap Filter Strip?

A Cross Wind Trap Filter Strip is a strip of herbaceous cover that is resistant to wind erosion, established along the upwind edge of a surface drainage ditch to reduce non-point source sedimentation and pollution of surface waters in the ditch where the strip and ditch run across the prevailing wind direction.

How Does A Cross Wind Trap Filter Strip Work ?

Cross Wind Trap Filter Strips entrap windborne sediment and other pollutants such as phosphorus, nitrogen, and other plant nutrients along with pesticides and organic materials from wind erosion on cropland before it can be deposited in drainage ditches in an effort to maintain and improve water quality.

Where Does A Cross Wind Trap Filter Strip Apply?

Cross Wind Trap Filter Strips may be used where drainage ditches occur adjacent to agricultural fields that are composed of soils which are susceptible to wind erosion. The minimum width of a Cross Wind Trap Filter Strip is 15 feet. Wider strips may be necessary depending on the size of the sediment contributing area, field soil types, and the sensitivity of the water body being protected

Where To Get More Assistance:

Additional local assistance may be obtained from the local office of a Michigan Conservation District or the USDA Natural Resources Conservation Service (NRCS) office at:

Seed Mixture Recommendation Within the Cross Wind Trap Filter Strip (as checked):

GRASSES:	RATE/ TOTAL
<input type="checkbox"/> Dakota Switchgrass*	6 lbs/ac _____
<input type="checkbox"/> Pathfinder Switchgrass*	6 lbs/ac _____
<input type="checkbox"/> Big Bluestem	10 lbs/ac _____
<input type="checkbox"/> Orchardgrass	5 lbs/ac _____
<input type="checkbox"/> Smooth Bromegrass	12 lbs/ac _____
<input type="checkbox"/> Meadow Foxtail	6 lbs/ac _____
<input type="checkbox"/> Timothy	10 lbs/ac _____
<input type="checkbox"/> Tall Wheatgrass	8 lbs/ac _____
<input type="checkbox"/> Redtop	8 lbs/ac _____
<input type="checkbox"/> Perennial Ryegrass	20 lbs/ac _____

LEGUMES:	
<input type="checkbox"/> Crown Vetch	15 lbs/ac _____
<input type="checkbox"/> Alfalfa	12 lbs/ac _____
<input type="checkbox"/> Alsike Clover	6 lbs/ac _____
<input type="checkbox"/> Ladino Clover	3 lbs/ac _____

ANNUALS:	
<input type="checkbox"/> Wheat	180 lbs/ac _____
<input type="checkbox"/> Rye	100 lbs/ac _____
<input type="checkbox"/> Winter Barley	180 lbs/ac _____
<input type="checkbox"/> Triticales	50 lbs/ac _____
<input type="checkbox"/> Spelts	100 lbs/ac _____
<input type="checkbox"/> Annual Ryegrass	12 lbs/ac _____
<input type="checkbox"/> Sweetclover	4 lbs/ac _____
<input type="checkbox"/> Annual Ryegrass	20 lbs/ac _____
<input type="checkbox"/> Sudangrass	25 lbs/ac _____
<input type="checkbox"/> Sorghum	25 lbs/ac _____
<input type="checkbox"/> Sorghum-Sudangrass	25 lbs/ac _____

TOTAL: _____

*P.L.S. pure live seed

Recommended Seeding Dates: _____

[See MSU Bulletin E-2107 Seeding Practices for Michigan Crops for recommended seeding dates, seeding depths, and other establishment guidance]

Trap Filter Area Soil Test Date: _____

Fertilizer Recommendations:

Type: _____ lb/ac: _____

Type: _____ lb/ac: _____

[Fertilizer is to be applied according to needs determined from a recent soils test taken in the trap filter area. All phosphorus is to be incorporated to prevent phosphorus movement to the surface waters of the adjacent drainage ditch (except in no-till seedlings). Nitrogen applications will be delayed until after plant emergence and establishment to minimize nitrogen losses due to leaching or runoff to the adjacent drainage ditch.]

Other Considerations:

A number of environmental effects will occur with the design and establishment of a Cross Wind Trap Filter Strip along the berm of a drainage ditch. A consideration of these effects will allow for incorporation of companion planning elements to

achieve an ecosystem-wide conservation plan for the area in which the trap filter strips are to be established. Effects which may be considered include: wind erosion (calculated), soil deposition causing offsite damage, stream conveyance capacity, stream restricted capacity, pesticides in surface water, nitrate-N leaving field, nitrate-N in surface water, total phosphorus leaving field, total phosphorus in surface water, nutrients and organics in surface water, suspended sediment/turbid surface water, stream fish population, stream benthic invertebrates, air quality-other.

Maintenance:

Established vegetation in the Cross Wind Trap Filter Strip, or plant residue, is to be maintained at a minimum height of 12 inches and at a minimum stem density of between 75 - 100 stems per square foot during those periods in which wind erosion is expected to occur; i.e.:

- Winter
- Spring
- Summer
- Fall

Control of invading weeds will be by mowing or by spot herbicide treatment as indicated:

<u>Type of Weed</u>	<u>Type of Control</u>
Canada & Bull Thistle	_____
Perennial Sow Thistle	_____
Russian Knapweed	_____
Spotted Knapweed	_____
Quackgrass	_____
Horseweed	_____
Prickly Lettuce	_____
Hemp Dogbane	_____
Milkweed	_____

Travel lanes and field headlands are not to be included within the minimum designed trap filter strip width, except as indicated:

Entrapped soil sediments are to be removed from the trap filter strip area and spread onto the adjacent field when the depth of those sediments begin to impede the ability of the established vegetation to trap additional sediment. This usually occurs when sediments reach a depth of 6" in the trap filter area.

For More Information:

Additional information about the design and function of Cross Wind Trap Filter Strips may be

obtained from the world wide web: (www.mi.nrcs.usda.gov). Also see FOTG Conservation Standard Cross Wind Trap Strip Filter 589C.

Reference/File Indexes:		
Topic Application:	Resource Series:	References:
<input type="checkbox"/> Construction	<input checked="" type="checkbox"/> Agronomy	USDA-NRCS National Agronomy Manual
<input checked="" type="checkbox"/> Design	<input type="checkbox"/> Biology	USDA-NRCS RUSLE Handbook
<input type="checkbox"/> Fact	<input type="checkbox"/> Engineering	USDA NRCS (MI) Conservation Practice Associations:
<input type="checkbox"/> Information	<input type="checkbox"/> Forestry	# 386 Field Border
<input type="checkbox"/> Management	<input type="checkbox"/> Hayland	# 393 Filter Strip
<input type="checkbox"/> _____	<input type="checkbox"/> Livestock	USDA NRCS (MI) Standards & Specification Associations:
<input type="checkbox"/> _____	<input type="checkbox"/> Pastureland	N/A
	<input type="checkbox"/> Recreation	USDA NRCS (MI) Associated Conservation Sheets:
		Cross Wind Trap Filter Strip for Wildlife
FOCS (MI) Reference Number:	<input type="checkbox"/> _____	
CS _____		

This Conservation Information Sheet

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USDA NRCS Grazing Lands Institute (TX)

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