NARROW STRIP CROPPING

CONSERVATION DESIGN SHEET

AGRONOMY SERIES May 1997

Natural Resources Conservation Service

Michigan

Narrow strip cropping corn and soybeans John Burk farm Bay county

What is Narrow Strip Cropping ?

Narrow strip cropping is a planned crop sequence that alternates corn and soybeans or other crops limited to one width of the planting or harvesting equipment.

How Does Narrow Strip Cropping Work?

Narrow strip cropping combined with mulch tillage, no-tillage, or ridge tillage, and high residue crops like wheat or corn can reduce wind or water erosion and runoff. It is also a way to protect sensitive crops like sugar beets and dry beans from wind abrasion damage. Soil compaction is reduced if strip widths are equal, and tire traffic is always in the same row spacing. Water quality is protected by reducing soil loss and the movement of sediment-bound phosphorus.

Where Does Narrow Strip Cropping Apply?

Narrow strip cropping may be used where sensitive crops are susceptible to stand loss by wind abrasion. and to reduce soil compaction via controlled traffic. Corn yields may be enhanced by a combination of higher populations, hybrid selection, and row number. Two and three crop systems are possible. Some farmers in Michigan and Ontario, Canada, report higher profits and yields with this system.

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:

_____

_____

_____

Design Criteria

Date: ____/____/____

Assisted by: _____

Project Identification and Location

Client Name: _____
Township: _____ **County:** _____ **State:** ___
Farm Number: _____ **Tract Number:** _____
Field Number: _____ **Water Course:** _____

Design Elements

1. Landowner goals

[ ] Reduce water erosion
[ ] Improve water quality
[ ] Reduce wind erosion-abrasion
[ ] Reduce soil compaction
[ ] Improve profit and production

2. Cropping sequence or rotation

Crop	year	% residue cover
_____	____	_____
_____	____	_____
_____	____	_____
_____	____	_____

3. Strip Width _____ ft.

4. Row Number (circle) 4 6 8 Other ____

5. Residue Management System.

[ ] Mulch till
[ ] Ridge till
[ ] No-till

6. Herbicide Selection *see NRCS Fact Sheet Herbicides for Narrow Strips 996-1*

_____
_____
_____
_____
_____
_____
_____
_____

Considerations For Design

1. The most efficient use of labor and equipment is obtained when using weed control products registered for use in both corn and soybeans. Herbicide resistant varieties of corn, soybeans, or other crops are an excellent way to expand the broadcast herbicide weed control options. Drift control is an absolute must if each strip is treated separately and adjoining emerged crops are sensitive to the selected herbicide.

2. No-till or Ridge till systems are best for controlling wheel tracks and reducing soil compaction. Strip widths should be the same for both planting and harvesting equipment. Limit axle weight to less than 5 tons/axle for maximum effect.

3. To reduce soil loss and sediment-bound phosphorus, residue management systems should be used to enhance the effect of this system. Both wind and water erosion will be reduced.

4. Significant yield increases of corn have been documented in Minnesota, Michigan, and Ontario. Hybrid selection is critical to achieve maximum yield and profit. A Fixed Ear Hybrid that can withstand high populations will provide the most return for investment. **Row widths less than 30 inches have produced high yields when combined with narrow strips on Ontario farms.**

5. To prevent the buildup of herbicide resistant weeds, alternate herbicides with different modes of action.

Other Considerations

A number of effects to environmental conditions will occur from cultural operations used on fields where narrow strip cropping is installed. 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 narrow strip cropping is installed**.** Effects which may be considered include: sheet and rill erosion, wind erosion, soil compaction, water quality, sediment reduction and phosphorus loss, plant health, plant productivity, profit, etc.

Natural resource area(s) expected to be addressed by the use/application of this conservation sheet:

[x] Soil [x] Water, [x] Air, [x] Plants,
[ ] Animals, [x] Human Socio-Economic

Maintenance

1. If fields are rutted from a wet harvest, use light tillage to level the ruts.
2. Control perennial weeds by spot spraying , rope wicking, rouging, or other methods.
3. Rotate crops in strips to reduce insecticide use and prevent disease, insect or other pest buildup.

4. Spread harvest residue uniformly over the entire crop strip.

Additional information about the design and function of Narrow strip cropping may be obtained from the world wide web: http://www.mi.nrcs.usda.gov. Also see MI NRCS Field Office Technical Guide Conservation Standard Narrow Strip Cropping 996.

This Conservation Information Sheet

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Reference/File Indexes

Topic Application:		Resource Series:		References:
[ ]	Construction	[X]	Agronomy	USDA-NRCS National Agronomy Manual
[X]	Design	[ ]	Biology	USDA-NRCS RUSLE Handbook
[ ]	Fact	[ ]	Engineering	USDA NRCS (MI) Conservation Practice Associations:
[ ]	Information	[ ]	Forestry	#996 Narrow Strip Cropping
[ ]	Management	[ ]	Hayland	
[ ]	_____	[ ]	Livestock	USDA NRCS (MI)Standards & Specification Associations:
[ ]	_____	[ ]	Pastureland	N/A
		[ ]	Recreation	USDA NRCS (MI) Associated Conservation Sheets:
FOCS (MI) Reference Number: CS _____		[ ]	_____	1997 Fact Sheet 996-1 Herbicides for Narrow Strips