

Cropping Systems Calculator: Soil Erosion By Water

Number of Acres of Whole Farm	300	Years in Original	2
Number of Acres to Change	50	Rotation New	2

	Original Crop Plan			Tillage Method	New Crop Plan			Tillage Method	Original C Factor	New C Factor	Original C Tillage Factor	New C Tillage Factor
	Crop 1	Crop 2	Crop 3		Crop 1	Crop 2	Crop 3					
Year 1	Soybeans			Spring Plow	Year 1 Soybeans	LateSeasonC		No Till	Year 1 0.5	0.425	0.9	0.25
Year 2	Corn			Fall Plow	Year 2 Corn	LateSeasonC		No Till	Year 2 0.4	0.375	1	0.25
Year 3					Year 3				Year 3			
Year 4					Year 4				Year 4			
Year 5					Year 5				Year 5			
Year 6					Year 6				Year 6			

Farm Location

State	Minnesota
County	Olmsted
Rainfall Factor	150.47

Length/Slope Factor

Slope Length (ft)	200
Slope Percent	4.0%
Length/Slope Factor	0.67

Soil Type Factor

[Click Here for Link to Map](#)

K Factor From Map	0.28
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Planting Direction

Select from List Below

Cross Slope	
P Factor	0.75

Do You Use Strip Cropping?

Select from List Below

No	
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- Instructions**
1. Information will be transferred from previous pages and these cells are not highlighted a color.
 2. Continue to enter the type of tillage method used by clicking on the drop down arrows in the highlighted yellow cells.
 3. Enter your farm location using the drop down arrows. Be sure to select the state first so that the correct counties are available.
 4. Repeat step 3 for the Length/Slope Factor. Scroll over the red corner to see a note explaining this factor.
 5. Click to launch the Soil Map. Use the search box to find your location using either your address, zip code, or by clicking the map.
 6. Select your planting direction and strip cropping values.
 7. If desired, enter your known soil organic matter percentage to see the pounds of lost nutrients in your soil from erosion by water.
 8. Scroll down to see the results.

Average Yearly Soil Erosion from the Two Rotations

	Original Crop		New Crop		Percent Difference
	Per Acre	Total	Per Acre	Total	
Tons	8.997	449.872	2.117	105.852	-76%
Number of Truckloads	0.682	34.081	0.160	8.019	-76%
Depth		0.0603		0.0142	-76%

-Percent difference shows the percent change in the new crop when compared to the old crop

Optional SOM: 2.50%

Enter Your Soil Organic Matter Percentage

	Original Rotation Loss in Lbs				New Rotation Loss in Lbs			
	Carbon	Nitrogen	Phosphorus	Sulfur	Carbon	Nitrogen	Phosphorus	Sulfur
Year 1	238.17	23.82	2.38	2.38	Year 1 56.23	5.62	0.56	0.56
Year 2	211.70	21.17	2.12	2.12	Year 2 49.62	4.96	0.50	0.50
Year 3					Year 3			
Year 4					Year 4			
Year 5					Year 5			
Year 6					Year 6			
Yearly Average	224.94	22.49	2.25	2.25	Yearly Average 52.93	5.29	0.53	0.53

Year by Year Soil Erosion Estimates

	Original Crop Plan			New Crop Plan		
	Tons/Acre	Truckloads	Depth (")	Tons/Acre	Truckloads	Depth (")
Year 1	9.53	0.72	0.0638	Year 1 2.25	0.17	0.0151
Year 2	8.47	0.64	0.0567	Year 2 1.98	0.15	0.0133
Year 3				Year 3		
Year 4				Year 4		
Year 5				Year 5		
Year 6				Year 6		
Yearly Average	9.00	0.68	0.0603	Yearly Average 2.12	0.16	0.0142

Amount of Nutrients Lost through Soil Erosion By Water (lbs)

	Original Crop		New Crop		Percent Difference
	Per Acre	Total	Per Acre	Total	
Carbon	224.94	11246.79	52.93	2646.30	-76%
Nitrogen	22.49	1124.68	5.29	264.63	-76%
Phosphorus	2.25	112.47	0.53	26.46	-76%
Sulfur	2.25	112.47	0.53	26.46	-76%