

The following are some points to help you complete the attached "Intensity Rating for Crop Rotations for soil water storage and use" and "Diversity Index for Crop Rotations" worksheets for crop rotations you are considering for your farm.

Intensity

- **Crop rotation intensity** means growing a combination of crops that will match soil water storage with crop water use under your local climatic conditions.
- The native vegetation will show what the long-term climate is like in your area. Adjust crop intensity rating to match a score that reflects the native vegetation in your area. (The ratings below are based on no-till farming methods that conserve moisture through residue management. Farming systems that rely on tillage should limit intensity ratings to at least .5 to 1.5 points lower than those shown below).

Western & Central South Dakota - short/mixed grass prairie = intensity rating of 1.0 to 1.5
 Eastern South Dakota - mixed/tall grass prairie = intensity rating of 1.5 to 3.0

- Include enough warm season/full season, perennial, or deep-rooted crops in the rotation to achieve appropriate water use of stored soil water left by cool season/short season annual crops.
- When calculating a crop rotation intensity rating, summer-fallow counts as "0" because it does not use soil water. However, tilled fallow does cause organic matter to be destroyed, resulting in the release of significant amounts of nitrogen.
- Score 1 point for cool or short-season crops, and 2 points for warm, full-season crops. Total the points for the rotation, and divide by the total number of **years** in the rotation.

Intensity Rating for Crop Rotations for Soil Water Storage and Use

Cool or Short Season Crops
 Score 1 point:

barley
 canary seed
 canola
 crambe
 durum wheat
 field pea
 flax
 lentil
 lupine
 mustard
 oat
 spring wheat
 sugar beet
 winter rye
 millet
 winter wheat

Warm or Full Season Crops
 Score 2 points:

alfalfa
 amaranth
 buckwheat
 chickpea
 corn
 dry edible bean
 perennial grass
 potato
 safflower
 sorghum
 soybean
 sundangrass
 sunflower

Summer-Fallow
 Score 0 points

SAMPLE

Crop Rotation	Intensity Points
Barley	1
Winter Wheat	1
Field Pea	1
Corn	2
Millet	1
Canola	1
Total Intensity Points	7
Number of Years	6
7 / 6 = 1.2 Intensity Rating	

WORKSHEET

Crop Rotation	Intensity Points
_____	<input type="text"/>
_____	<input type="text"/>
_____	<input type="text"/>
_____	<input type="text"/>
_____	<input type="text"/>
_____	<input type="text"/>
Total Intensity Points	_____ = _____
Number of Years	_____ = _____ Intensity Rating