

How do I know what tillage system to choose when mine is not in the drop-down list?

You can select the most similar SnapPlus system by using the comparing the STIR values. STIR stands for Soil Tillage Intensity Rating and differences between STIR ratings can be used to show differences in the degree of soil disturbance between tillage types. The ratings take into account tillage type, tillage depth, equipment operating speed, and percent of surface area exposed. A STIR value can be calculated for each soil disturbing operation in RUSLE2. STIR values for all the operations are added to get a value for the system. The table below shows the sums of the STIR for each SnapPlus tillage choice in the fall and spring. Note that drilled and row crops have different STIR values for the same tillage because of differences in the soil disturbance in the planting operation.

Soil Tillage Intensity Ratings for SnapPlus Tillage Choices

Tillage Name	Description	Fall STIR	Spring STIR, Row crops ¹	Spring STIR, Drilled crops	Total annual STIR, Row crops ¹	Total annual STIR, Drilled crops
Fall chisel, disked	Fall chisel plowing (twisted shovel) with spring disking (tandem, light) and field cultivation before planting.	46	48	52	93	97
Fall chisel, no disk	Fall chisel plowing (twisted shovel) and field cultivation before planting.	46	28	32	74	78
Fall cultivation	One field cultivation before planting, use for systems with one pass in fall and no spring tillage	26	2	6	28	32
Fall moldboard plow	Fall moldboard plowing with spring disking (tandem) and field cultivation before planting.	65	48	52	113	117
Fall vertical tillage	Fall pass plus a spring pass with same seedbed conditioner: double gang coultter caddy, rotary harrow, and rolling basket incorporator.	20	22	26	42	46
No-till	No soil disturbance except for planting	0	2	2 to 6 ²	2	2 to 6 ²
Spring chisel, disked	Spring chisel plowing (twisted shovel) followed by disking (tandem) and field cultivation before planting.	0	93	97	93	97

Spring chisel, no disk	Spring chisel plowing (twisted shovel) and field cultivation before planting.	0	74	78	74	78
Spring cultivation	One field cultivation before planting, use for most one-pass systems.	0	28	32	28	32
Spring moldboard plow	Spring moldboard plowing followed by disking (tandem) and field cultivation before planting.	0	113	117	113	117
Strip-till	No soil disturbance except for 30% of the surface at planting with a strip-till planter.	0	5	NA	5	NA
Spring vertical tillage	Spring pass using a seedbed conditioner with a double gang coulter caddy, rotary harrow, and rolling basket incorporator	0	22	26	22	26

¹Narrow-row crops have slightly higher (+ 2 to 3) STIR due to narrow-row planters disturbing a greater percentage of the soil surface.

²STIR values for no-till small grains are 2 and no-till legume forages are 6 due to differences in planting equipment.

Use the **Soil Tillage Intensity Ratings for Soil Disturbing Operations** list to find STIR values for the operations that most closely resemble yours and add them up to compare both fall and spring STIR values.

Example 30-inch row corn tillage system: Fall subsoiler (Vee ripper) with two spring field cultivations.

Operation	Fall STIR	Spring STIR	Total annual STIR
Subsoiler	35		
Cultivator, field 6-12 in sweeps		26	
Cultivator, field 6-12 in sweeps		26	
Planter, double disk opener		2	
Tillage system total	35	54	89

This system STIR most closely resembles that of the SnapPlus Fall chisel, disk system. The overall annual STIR is lower, with the Fall STIR being 11 smaller ($46-35 = 11$) and the Spring STIR being 6 larger ($54-48$). Tillage systems STIR values are not perfect indicators of relative soil loss on a field. It is, however, reasonable to assume that a field is meeting Tolerable soil loss (T) if soil loss is less than T when calculated using one of the SnapPlus systems with a higher STIR value than actual field management. Therefore, a field with this example system can be assumed to meet the standard if soil loss in SnapPlus is under T with the Fall chisel, disk option for corn.