

RUSLE2 Guidance on Stripcropping Selections

Rotational stripcropping involves a rotation of crops with dense, permanent cover such as hay in strips alternated with strips of crops that are erodible. The strips of annual crops may be farmed in a rotation between strips of dense cover. Rotational stripcropping involves rotating crops and dense cover in a sequence among all of the strips on the dominant critical slope length so that at some point in the cycle, all crops in the rotation have been produced on each strip.

Rotational stripcropping is effective as a conservation practice by alternating strips of dense cover with the erodible crop strips. The strips of dense cover cause deposition and spread runoff to reduce rill and interrill erosion down the slope.



The alternating strips of dense cover and crop strips are represented in RUSLE2 by offsetting the timing of the rotation among the strips located on the dominant critical slope length, L . The years of offset for each strip are entered in RUSLE2 to create the desired alternating strip arrangement. The following tables illustrate various patterns obtained by selecting different years of offset.

A five year rotation of corn-corn-hay-hay-hay on four strips may be used to illustrate how to select years of offset to alternating strips. Notice that the number of strips need not match the number of years in the rotation. However, the RUSLE2 model will require dense cover as hay to equal or exceed the crop years in the rotation. Strips are numbered from the upslope strip to lower strips downslope in length L.

Table 1 – No offsets between strips

Yrs Offset	Strip No.	Crop Yr. 1	Crop Yr. 2	Crop Yr. 3	Crop Yr. 4	Crop Yr. 5
0	1	Corn	Corn	Hay	Hay	Hay
0	2	Corn	Corn	Hay	Hay	Hay
0	3	Corn	Corn	Hay	Hay	Hay
0	4	Corn	Corn	Hay	Hay	Hay

Table 1 where the offset years is zero is not rotational stripcropping because the same crops exist on each strip at all times. There is no distinctive strip cropping pattern as expected in a rotational stripcropping system.

Table 2 – Offsets between strips of 0-2-0-2

Yrs Offset	Strip No.	Crop Yr. 1	Crop Yr. 2	Crop Yr. 3	Crop Yr. 4	Crop Yr. 5
0	1	Corn	Corn	Hay	Hay	Hay
2	2	Hay	Hay	Corn	Corn	Hay
0	3	Corn	Corn	Hay	Hay	Hay
2	4	Hay	Hay	Corn	Corn	Hay

Table 2 represents a rotational stripcropping pattern with 0-2-0-2 offsets. Soil deposition occurs in strips 2 and 4 during the crop years 1 and 2 and in strips 1 and 3 during crop years 3 and 4. Little erosion occurs in crop year 5 when the dense cover occurs on all strips. Sediment yield is higher in years 3 and 4 than the other years because the erodible corn strips are at the ends of the slope where no dense vegetation exists to filter sediment.

In the RUSLE2 model you must select:

- 1) a rotation that includes years of permanent dense cover equal to or more than the years of annual crops;
- 2) a contouring option that is an acceptable grade for the edge between the strips; and
- 3) a stripcropping pattern including number of strips on the dominant critical slope length, L, and the number of offset years for the crop rotation.

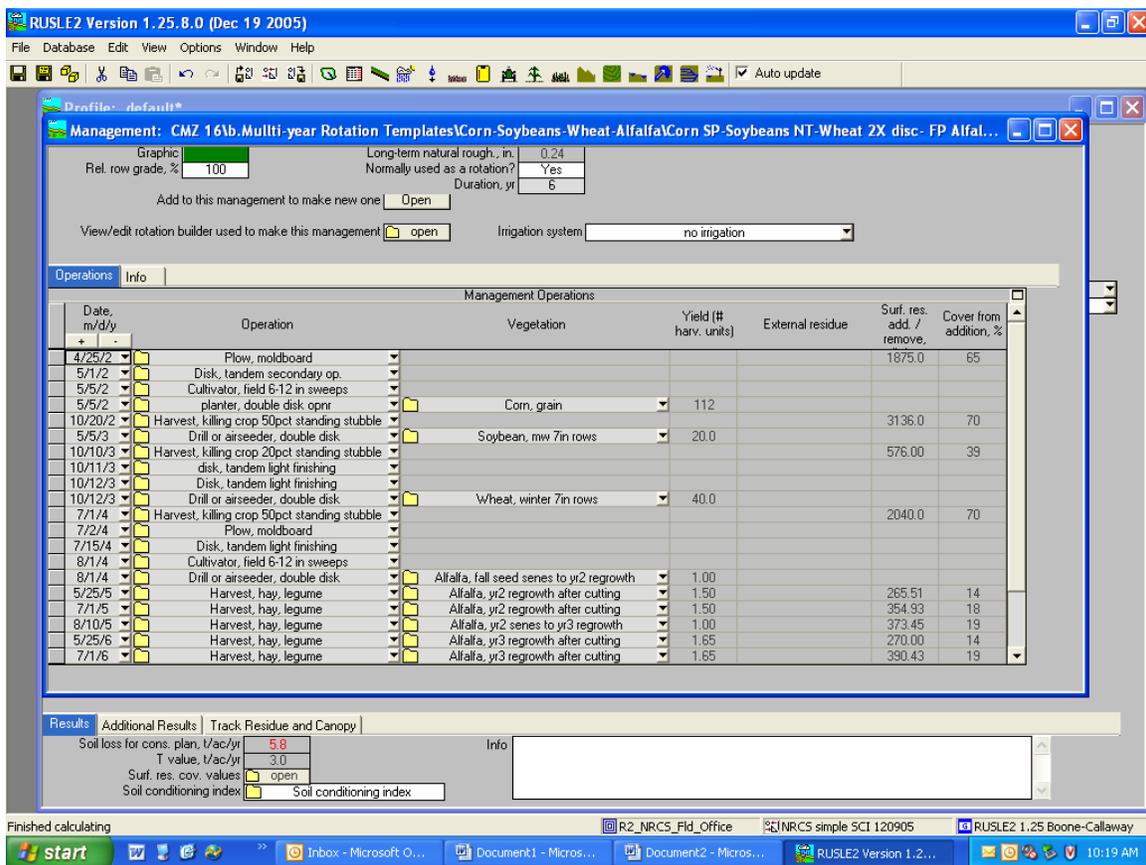
Example

A producer has a stripcropping system on a corn-soybean-wheat-hay-hay-hay rotation. All crop strips are adjacent to hay strips throughout the entire rotation. The dominant critical slope length is 160 feet with 2 strips in this length. Select the appropriate stripcropping option to complete an erosion prediction.

Offset	Strip No.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
0	1	Corn	Soybeans	Wheat	Hay	Hay	Hay
3	2	Hay	Hay	Hay	Corn	Soybeans	Wheat

Using the table created to compare the crop rotation, it is easy to see that the stripcropping offset is 0-3 for a two strip system.

In RUSLE2 open a calculation either as a worksheet or profile (example is based on a profile). Enter the information for location and soils. Describe the management rotation with tillage, planting, and harvest dates for the corn-soybeans-wheat-hay-hay-hay rotation. An example rotation is shown below.

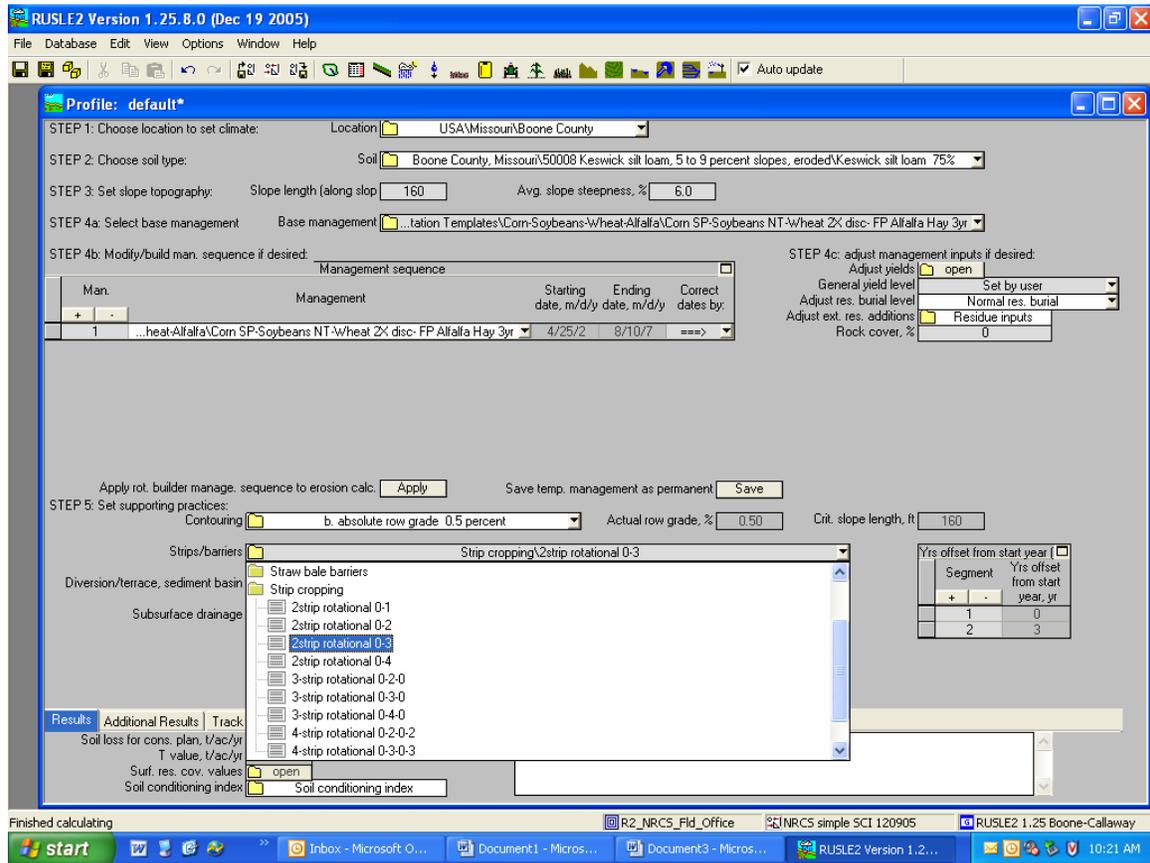


Adjust the yields as needed to represent the management of this crop rotation.

Select an appropriate contouring option to represent the interface between the two adjacent strips. In this example contouring of absolute row grade 0.5 percent was selected as the closest representation of the row grade across the dominant critical slope length.

Open the Strips/Barriers portion of the model and select the “Strip cropping” option from the dropdown choice list. Scan the dropdown choice list under “Strip cropping” and

select the appropriate option that best represents the rotation and number of strips in L.
 For this example the choice “2 strip rotational 0-3” is the best choice as shown below.



Complete the remainder of the RUSLE2 calculation.