TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE
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AGRONOMY TECHNICAL NOTE NO. 36

DETERMINATION OF CROP INTERVAL STIR FROM AVERAGE ANNUAL STIR TABLES IN RUSLE2

The Soil Tillage Intensity Rating (STIR) utilizes the speed, depth, surface disturbance percent, and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity, and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description. Average annual STIR values are calculated within RUSLE2. However the standard for Residue and Tillage Management, No-Till/StripTill/Direct Seed refers to "crop interval" STIR. This Technical Note provides guidance on how to pull the crop interval STIR from the Average Annual STIR table in RUSLE2.

Crop interval is defined as the period from the harvest of one crop to the next (the reason it isn't from harvest to planting is because with some row crops there is tillage or fertilizer shanked in the rows after planting which is additional disturbance). To determine crop interval STIR, the Average Annual STIR tables in RUSLE2 must be reviewed to separate and add up the STIR values for each crop interval, especially in wheat/fallow situations.

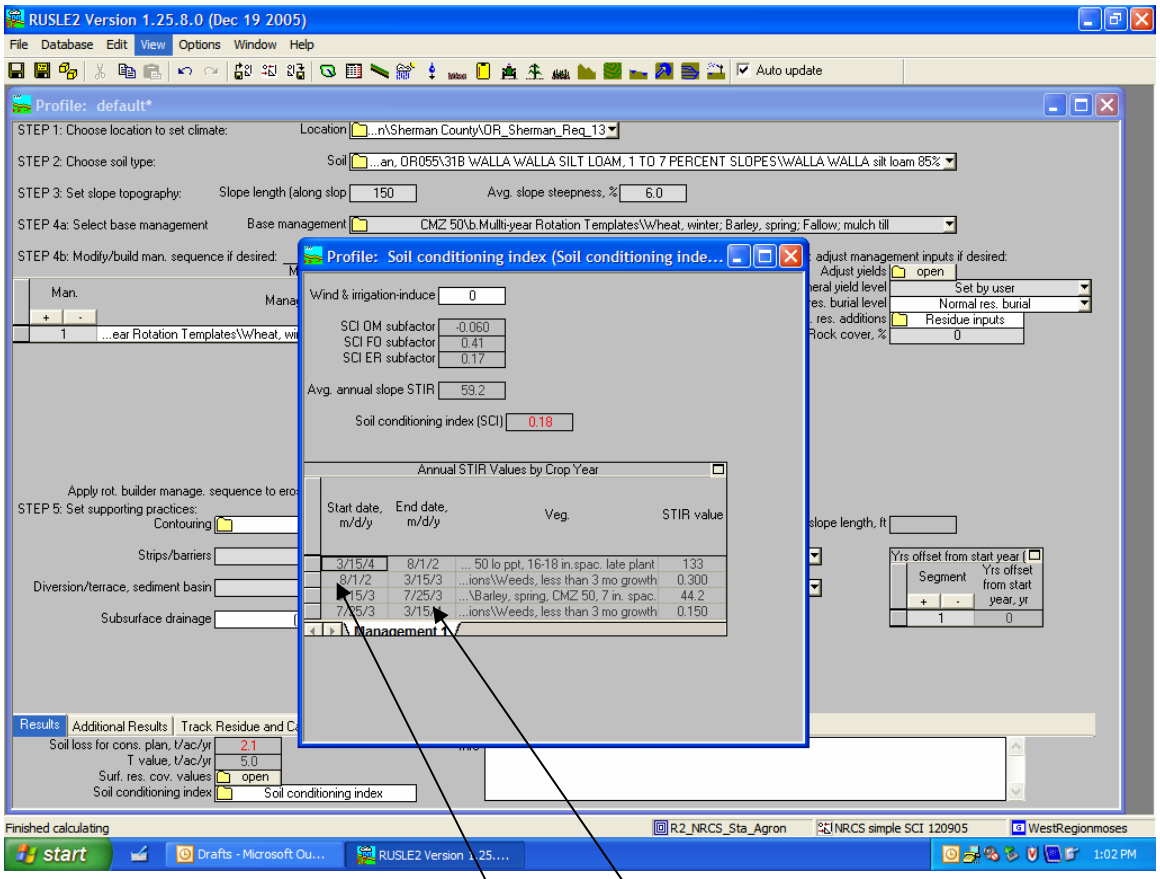
For Residue and Tillage Management, No-Till/Strip Till/Direct Seed (329) criteria the Average Annual STIR table in the SCI box in RUSLE2 is not used. Despite its level of detail, RUSLE2 cannot provide STIR by crop interval due to the way it is currently programmed.

To sort the crop interval STIR from the output table, bring up the appropriate Management template and write down the harvest dates. Then look at the STIR output table and calculate each crop interval STIR based on the harvest to harvest dates of the crops in rotation.

The following example uses a winter wheat-spring barley-fallow rotation. The harvest dates are:

- Winter wheat 8/1/2
- Spring barley 9/25/3

There are two harvested crops and therefore two crop intervals



For spring barley the crop interval is 8/1/2 to 7/25/3- which is from the harvest of the winter wheat to the harvest of the spring barley. So the STIR to the spring barley crop interval is:

0.3 + 44.2 = 44.5 or 46

The STIR for the remaining winter wheat-fallow crop interval is:

0.15 + 133 = 133.15 or 133

Future versions of RUSLE2 will likely address this issue. However, until an enhancement is provided, use this guidance to determine crop interval STIR from the existing STIR tables in RUSLE2.