

## RUSLE2

### Guidance on Irrigation and Soil Loss

With Version 1.25.5.0 of the RUSLE2 model, any supplemental irrigation water applied is documented on the management screen instead of the profile or worksheet screens. This makes perfect sense as the application of irrigation water is an annual management decision made by the producer based on agronomic and economic considerations. The decision to apply irrigation water in Missouri is very similar to tillage and pesticide choices.

Irrigation amounts entered in profiles and worksheets in previous versions of the model will be lost with the installation of Version 1.25.5.0. You will need to manually re-enter the information on any profiles and worksheets that were saved in previous versions and transferred into the current county-specific database.

Supplemental irrigation affects the RUSLE2 model by identifying additional water inputs that could result in an increase in rill and interrill erosion. For example, irrigated land may be already saturated prior to a storm event, increasing the amount of runoff that would occur. Benefits include a potentially better crop with heavier residue cover and yield, but this change must be entered manually into the model to be correctly evaluated. Enter the additional yield expected from the addition of irrigation water in the profile or worksheet screens.

The irrigation entries may be in the following forms for each management:

- no irrigation
- enter application rate
- enter application depth
- enter monthly application depth

Select the appropriate method for recording the additional water applied for the entire rotation. After selecting a method to document irrigation applications, click on the yellow file folder to the left of the selection to enter specific data for each management. If only one crop of the rotation is irrigated, document this one irrigation period. The irrigation data can be saved with the management and recalled for later use on other producers

### Possible Irrigation Selections

**No Irrigation** – self explanatory

**Enter Application Rate** – This selection allows you to enter specific dates and net water amounts applied during the rotation. Enter the average date for all irrigation applications

and the average amount applied to meet crop needs. Continue to enter dates and rates for the entire irrigation system for each crop in the rotation. The model will determine the average daily irrigation depth for the time period between dates and will add this amount to the average precipitation for each day.

**Enter Application Depth** – This selection allows you to enter irrigation periods (start and end dates) for each crop in the rotation. Enter the average dates and the net irrigation application depth for each period. Again, an average daily rate will be considered as applied in the model.

**Enter Monthly Application Depth** – This selection allows you to enter the average net irrigation depth for each month in the rotation. If no irrigation occurs during a month, the default entry is zero. Again the model calculates the average daily change in the precipitation.