

RUSLE2

Guidance for Using Rock Cover

Erosion from the typical cropland field in Missouri is not affected by surface rock cover. However, there are crop and pasture fields in the southern part of the state that could have significant rock on the surface. Please be aware that if you use rock cover once to qualify for a conservation program you will be expected to use rock cover in all future applications.

The RUSLE2 model considers rock cover as permanent residue cover on the site to absorb the raindrop impact and impede water movement across the surface. Therefore, rock cover will be estimated using a line-transect method and documented in the case file on a field by field basis following the process explained in the National Agronomy Manual, Estimating Crop Residue Cover on page 503-6.

The process is as follows:

- 1) Use a 50 to 100 foot long cable, tape measure, or any other line that has 100 equally spaced beads, knots, or gradation (marks).
- 2) Select the dominant critical slope segment as the area to be sampled for rock cover. Stretch the line taut oriented perpendicular to the crop rows or in a direction that is at least 45 degrees off of the row direction.
- 3) Walk along the line, stopping at each mark. Position the eye directly over the mark and look down at it. When sighting, do not look at the entire mark or bead. Rather look at a single point on each mark.
- 4) A point has an area about like the end of a needle. The knots, beads, and other marks often have much larger areas than the end of a needle. A "hit" is not based on whether or not some portion of a mark is over the rock. It is based on whether or not a specific point associated with the mark is over rock. Therefore, select a point of reference such as where the bead or knot begins and use the same point with all gradations on the line.
- 5) Determine the percent rock cover by counting the number of points at each mark along the line under which a rock is seen. Count only from one side of the line and do not move the line while counting.
- 6) Count only the rocks that are large enough to intercept raindrops. This size is equal to or larger than 10 mm (0.3937 inches or 2/5 inch).
- 7) When using a line with 100 marks, the percent rock cover is equal to the number of "hits" under which a rock meeting the minimum size definition is seen.
- 8) Three to five transects will be completed in each field. If three different transects are counted and all the results are within 20 % of the average, the three transects will be acceptable and documented in the case file. If all three transects are not within 20 percent of the average, complete an additional two more transects and document the results in the case file.
- 9) Enter the average rock cover from all the transects in the appropriate "Rock cover, %" input box on the RUSLE2 profile screen.