FARMING WITH HIGH RESIDUE

FOR PROFIT AND EROSION CONTROL

Crop Residue Management ...

It's a good way

to farm.

USDA – Natural Resources
Conservation Service

WHAT PERCENT COVER WILL RESIDUE PROVIDE?

Table 4 shows the percent of ground cover that can be expected from various amounts of small grain, corn, grain sorghum, soybean, and sunflower residue.

TABLE 4

Residue Weight (lbs/ac) to Percent Residue Cover

Percent Cover	Beans, Beets Small Grain Alfalfa-Grass	Corn	Sunflowers
5	80	170	
10	165	335	450
15	250	505	710
20	345	675	980
25	445	840	1260
30	555	1080	1550
35	670	1390	1870
40	795	1675	2200
45	930	1945	2570
50	1075	2220	2950
55	1235	2515	3440
60	1420	2840	3950
65	1630	3210	4590
70	1870	3645	5250
75	2150	4155	6165
80	2500	4755	7100
85	2995	5460	8000
90	3735	6290	

HOW TO MEASURE PERCENT COVER

Most residue measuring methods are based on representative sites and readings are taken at predetermined points along a knotted string or tape measure. Observe whether or not there is residue at each point. A good way to think of it is to ask, "if a raindrop falls at the point, will it hit residue or bare ground?"

If 100 points are observed, the count of protected points is the percent cover. If 50 points are observed, the count of protected points must be doubled to be expressed as a percent.

The site measured must be typical of the field. Do not measure on headlands, or other places with distorted residue levels. Select a measuring site that runs diagonal to field rows and crosses more than one combine swath. Take a number of measurements and determine the average. The recommendation is to complete a minimum of 3 measurements with 100 points at each site. Count from only one side of the line. Do not move the line while counting. Count only the residue large enough to intercept rain drops. A rule of thumb is to count only residue that is 3/32 inch or larger in diameter.

Measurement counts being taken with a 50-foot tape.

Comparisons should not be made between the soil erosion predictions made by the critical period procedure (FSA compliance plan) and the management period procedure (WEQ). WEQ should be determined by management; tillage operations and dates, crops and average yields that is the current crop rotation.

Using the photo comparison method of estimating residue.

Another method to determine percent cover is to compare field conditions with photographs of measured residue levels. Although not as accurate as field measurements, it is an easy and rapid way to make good judgments. The following photo pages can be used for this method.

KNOW how much you need . . .

KNOW how much to expect . . .

KNOW how to save it.

PERCENT GROUND COVER IN SMALL GRAIN RESIDUE

10% -- 150 lbs/acre

20% -- 345 lbs/acre

30% -- 555 lbs/acre

40% -- 795 lbs/acre

50% -- 1075 lbs/acre

60% -- 1420 lbs/acre

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PERCENT GROUND COVER IN CORN RESIDUE

10% -- 335 lbs/acre

20% -- 675 lbs/acre

30% -- 1080 lbs/acre

40% -- 1675 lbs/acre

50% -- 2220 lbs/acre

60% -- 2840 lbs/acre

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PERCENT GROUND COVER IN SUNFLOWER RESIDUE AFTER TILLAGE

10% -- 450 lbs/acre

15% -- 710 lbs/acre

20% -- 980 lbs/acre

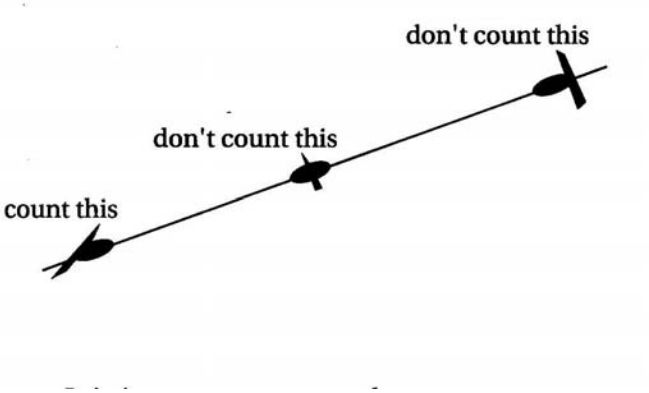
25% -- 1260 lbs/acre

30% -- 1550 lbs/acre

40% -- 2200 lbs/acre

acre

WY, NRCS
March 22, 2010



Measuring residue cover in the field after an operation is a way to verify that your actual tillage operations are leaving the amount of residue you predicted.

When residues are laying flat and randomly distributed, the line-transect method is one of the easiest field sampling procedures to estimate percent residue on the surface.

This method is not appropriate for standing stubble.

- Use any line that is equally divided into 100 parts. Fifty foot cable transect lines are available for this purpose. Another tool is a 50-foot nylon rope with 100 knots or marks, six inches apart. A 50-foot tape measure using the 6-inch and foot marks also works well.

- Stretch the line diagonally across the field. Walk back along the line and count the number of times a piece of residue lies under one edge of a mark.

- It is important to use the same point on each mark for accuracy. Don't count residue smaller than 1/8-inch in diameter.

- Walk the entire length of the string, rope or tape. The total number of marks with residue under them is the percent cover for the field.

Your best estimate of residue cover can be obtained by averaging at least three representative locations in the field. Avoid measuring areas not representative of the whole field, such as end rows, field edges, or areas of tillage overlap.

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March 22, 2010