United States Department of Agriculture
Natural Resources Conservation Service

CSP Worksheet E-03

October 2005

Reduced Soil Tillage Intensity and Frequency

STIR Ratings (Less Than 60, 30, & 15)

The energy required to till a soil, while influenced by soil type, moisture content and other environmental factors, is directly related to the depth of the tillage, the speed of the operation, and the number of tillage passes. Soil Tillage Intensity Rating (STIR) is an index used to evaluate the impact of kind, severity, and number of ground-disturbing tillage passes on soil quality. The STIR calculation is based on the location of cropland and the Crop Management System that the producer employs on that land. Higher numbers indicate greater disturbance and more energy use, while lower numbers indicate less disturbance and lower energy use.

The components of STIR are: operating speed of tillage equipment, tillage type, tillage depth, and the percent of surface area disturbed. Weights are assigned to each component to calculate a rating. This rating is useful in making residue management decisions. It is one of three outputs from the Revised Universal Soil Loss Equation (RUSLE2). The other outputs are a soil loss estimate and a soil organic matter trend estimate from the Soil Conditioning Index.

CSP Payment: CSP offers an annual payment per acre for eligible acres that sustain a STIR rating of less than 60, a higher payment for those eligible acres with a STIR less than 30 and a still higher payment for those acres with a STIR less than 15.

Documentation Required: STIR ratings from RUSLE2 based on the tillage systems documented for CSP eligibility or a documented change in the tillage system the farmer has implemented