PART II

PREDICTING

WIND

EROSION

LOSSES

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PREDICTING WIND EROSION LOSSES

The following sections explain the primary factors that influence erosion by wind and provide guidance on the Wind Erosion Equation (WEQ). The wind erosion equation is an erosion prediction model designed to predict long-term average annual soil losses from a described area.

The National Agronomy Manual contains two methods for estimating wind erosion: (1) critical wind erosion period method; and (2) management period method. **The critical wind erosion period method will be used for most erosion calculations.** Both methods are used primarily to estimate average annual erosion, although the management period method can also be used to estimate erosion for parts of the year.

Critical Period Method uses only one calculation, with factor values which describe the most erosive period of the year. This method is appropriate in situations where most of the annual erosion is expected to occur during one identified period during which the values of K, L, and V remain essentially constant. This method does not allow for more than one calculation during the year if you are concerned about more than one erosion period. When this situation occurs, the management period method should be used.

Management Period Method is used when significant erosion is expected in more than one erosion period characterized by significantly different values of K, L, or V resulting from crop growth and management. Erosion estimates for each period are weighted according to the percentage of annual erosive wind energy that occurs during the period. Average annual erosion is the sum of estimated erosion for all the management periods identified during the year. The identified management periods must account for the entire year, although some periods can usually be assumed to have no erosion.

The Field Office Technical Guide (FOTG) addresses both methods of estimating wind erosion. Information to use the Critical Period Method is contained in Section A and Section C, the appendix. Information to use the Crop Management Period Method is contained in Section B and Section C, the appendix. Contact the area agronomist for additional assistance if a weighted estimate based upon crop management periods and erosive wind energy distribution is needed for conservation management system development.

Part 502 of the National Agronomy Manual explains the Wind Erosion Equation in greater detail and provides guidance and reference on the wind erosion process, prediction, and control.