RUSLE2 AND WHAT IT MEANS TO NUTRIENT MANAGEMENT PLANS

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Future non-point pollution regulations will require planning for both nutrient inputs and soil conservation practices to limit the risk surface water contamination from crop production. This will especially be an issue for livestock enterprises because of manure. An obvious issue will be that proper manure management will allocate manure to more fields on a farm, many of which may be sloping and have a greater potential for erosion and nutrient delivery to surface water. Tillage that incorporates manure, allowing a greater rate of application, may not be possible because of residue incorporation. Finally, surface application of manure presents challenges relative to crop establishment.

For years conservation planners have used the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict soil loss. These equations are models that required the planner to physically "look up" factors in tables and may have been cumbersome for many to work with. The next version of the model is RUSLE2 that will be in the Windows format. It should be understood that RUSLE2 builds on previous models and is based on a large database of research.

RUSLE2 will be much more user-friendly. It can be customized for the user and can show as much detail as desired. Factors that consider rainfall intensity and duration, soil erosivity, tillage and conservation practices, etc. will be in "pull-down" windows. Like any Windows program these can be selected with a mouse click and their effect on soil loss is displayed. Field-specific information such as slope and length are easily entered making the soil loss prediction adaptable to current conditions. It addresses the impact of manure application on soil loss and can calculate runoff. These factors will be important for the implementation of a P index. Because it is interactive it will be much easier to evaluate management practices for their effect on soil loss. The model and the necessary databases will be available over the Web and it is expected that farmers, or their crop adviser, will work through various management scenarios that may develop in a field. RUSLE2 will also be applicable for erosion considerations from construction, mining, and forestry operations.

Drs. George Foster of the ARS and Dan Yoder of the University of Tennessee at Knoxville have overseen the development of RUSLE2. Final changes are currently being made and it is expected that training for agency staff in using RUSLE2 will begin in April of this year. It is anticipated that RUSLE2 will be the model used for various conservation practices that will be contained in the new Farm Bill. I f you are interested in downloading a beta version of RUSLE2 this can be done at the following website: http://bioengr.ag.utk.edu/rusle2/.

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