

Energy Enhancement Activities

For 2004, the Conservation Security Program (CSP) offers a limited number of enhancement payments as incentives to reward or encourage on-farm energy conservation and management. These enhancements are available once the applicant qualifies for CSP by meeting the program's entry requirements for soil and water quality.

This information will help landowners and managers determine if they are eligible for the offered payment(s) for energy enhancement activities.

Reduced Tillage Operations, Reduced Inputs and Precision Application of Fertilizers

STIR Ratings (Less Than 60, 20, & 10)

Soil Tillage Intensity Rating (STIR) is a calculation based on the location of cropland and the Crop Management System that the producer employs on that land. It is an index used to evaluate the kind, severity, and number of ground-disturbing tillage passes on soil quality. Higher numbers indicate greater disturbance; lower numbers indicate less disturbance.



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 Version 2.0. (RUSLE2). The other outputs are a soil loss estimate and a soil organic matter trend estimate from the Soil Conditioning Index.

Documentation Required: STIR ratings from RUSLE2.

Apply Fertilizer at or Below Agronomic Rate

Nutrients, such as nitrogen used in crop production, often are applied in large quantities to supplement soil supplies. Nitrogen typically is supplied to crops as ammonium nitrate, diammonium phosphate (DAP), ammonium sulfate, cal-nitro (ammonium nitrate + limestone) or other inorganic form.

The amount of energy needed to produce the nitrogen portion of the fertilizers is massive, almost 18,000 kilocalories of energy per one kilogram of nitrogen, and

requires large quantities of fossil fuels. This compares to 3,000 and 2,300 kilocalories per kilogram to produce phosphate and potassium fertilizer components, respectively¹. There is a clear opportunity to save energy by reducing unneeded nitrogen applications. These can be made by allocating more nitrogen to the crop situations with the greatest potential response and less nitrogen to the situations where it is not needed. The producer must closely evaluate the requirements for each crop rotation, soil, and climate.

Nitrogen recommendations are for the total amount of nitrogen needed. Add up the nitrogen coming from all sources and subtract these amounts from state specific fertilization recommendations. Additional efficiencies can be gained by calibrating applicators, applying fertilizer products and manure accurately, and using the correct method and placement to avoid losses and spillage.

Documentation Required: Farmer or crop consultant certification of appropriate fertilizer applications

¹ Living Landscapes, Thompson/Okonagan, Ministry of Employment and Investment, Province of British Columbia, CA, 2002