



# Five-Point Program

## *Soil Erosion Control Under Dryland Crop Production*

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The Five-Point Program was initiated in the Latah Soil Conservation District (SCD) in 1972 through the combined efforts of the Latah County Agricultural Extension Agent and a District Soil Conservationist. This program involves the use of 5 management practices which minimize soil erosion losses in dryland crop production. These 5 practices are:

1. Restricted summerfallow
2. Minimum tillage
3. Divided slope or strip crop farming
4. Cross slope farming
5. Critical area management

These are not revolutionary new practices; they are effective practices that have been used to varying degrees for many years. They are included as Best Management Practices (BMP) in the Idaho Agricultural Pollution Abatement Plan developed as part of the Rural Clean Water Program (Section 208 of Public Law 92-500). The Soil Conservation Service (SCS), the University of Idaho Cooperative Extension Service and other agencies have been encouraging the acceptance of these practices by dryland farmers. Although many farmers presently use 1 or more of these 5 practices, maximum soil erosion control can result only when all 5 of the practices are used together where they are applicable.

The Five-Point Program is applicable to most dryland agricultural areas in Idaho and Washington. There are areas where 1 or more of these management practices cannot or need not be applied. For example, where precipitation is less than 16 inches, summerfallowing is necessary to conserve sufficient moisture to produce a crop. Where slopes are gentle or nearly level, divided slope farming or cross-slope farming would not be necessary.

Some farmers have fully adopted the Five-Point Program. In Latah County, where the program originated, about 45,000 acres of approximately 50 growers are under the Five-Point Program.

To demonstrate and evaluate the effectiveness of the Five-Point Program on a watershed basis, the Latah SCD in cooperation with the SCS, SEA-AR (formerly Agricultural Research Service or ARS), Idaho Soil Conservation Commission (SCC), Environmental Protection Agency (EPA) and the University of Idaho, established the Cow Creek research project. The Cow Creek watershed is located in Latah County, approximately 10 miles southeast of Moscow. This project was established in December 1976 and will be continued at least through 1979.

Following are brief summaries of each of the practices included in the Five-Point Program.

### **Restricted Summerfallow**

The practice that contributes most to water and wind erosion under dryland crop production is summerfallow. Summerfallowed land is highly susceptible to erosion during the winter and spring following the fallow season.

Traditionally, summerfallow is used to conserve moisture, control weeds or to "let the land rest."

When one year's precipitation is not sufficient to produce a crop, additional moisture can be stored in the profile by summerfallowing. Conservation of moisture is necessary only where annual precipitation is less than about 16 inches. Thus, where precipitation is over 16 inches per year, there is no reason to summerfallow to conserve moisture.

Summerfallow may be needed to control severe weed infestations. This, however, should be limited to

small areas within a field, usually less than 5 acres. If summerfallowing is necessary, maintain a high level of surface residue at all times.

When we did not have fertilizer available or when we did not fully understand fertilization programs under dryland crop production, resting the land may have been beneficial. Today, however, we can supply the nutrient needs of the crop so "resting" the land is not a necessary practice.

### **Minimum Tillage**

Minimum tillage implies a minimum number of passes or operations over the field and a minimum amount of disturbance of the soil in preparing an acceptable seedbed. Clods and residue help to retard soil erosion. Thus to reduce erosion, leave as much residue as possible on the surface of the soil and leave the surface of the soil as rough as possible, with many clods. Traditionally the grower works his field until he has a seedbed of finely pulverized soil. Finely granulated soil particles are needed to insure proper germination of seeds, but finely pulverized soil is also most susceptible to erosion. Minimum tillage becomes a compromise between crop production and erosion control. An adequate seedbed must be prepared to meet the requirements of seed germination and yet leave a rough, trashy or cloddy surface to reduce the soil erosion hazard.

### **Divided Slope or Strip Crop Farming**

When the crop rotation includes summerfallow or low-residue crops such as peas or lentils, special precautions must be taken to prevent erosion on slopes. Divided slope farming means that a long slope be divided and planted into two different crops, including one high-residue crop such as wheat or barley. If the slope is excessively long, it should perhaps be strip cropped, which means dividing the slope into more than two parts.

### **Cross Slope Farming**

Cross slope farming implies that all tillage and seeding operations are performed by approximately following the contours of the slope. The more rigorous "contour farming," which implies that all operations are performed on an exact contour, is not always practical because of the complex nature of the slopes in the dryland crop areas. Cross slope or contour farming in contrast to up and down the slope operations results in the formation of many dikes and mini terraces or basins which help to prevent water from rushing down the slope cutting gullies and rills.

Cross slope farming generally takes a little more time, but decreased soil erosion will more than compensate for this added time and expense.

### **Critical Area Management**

Critical areas should be managed to minimize erosion. Critical areas are defined as those areas where erosion hazard is extremely high. These include eroded clay knobs, shallow soils, steep north slopes or other such areas which are in land capability class VI. They should be seeded to permanent grass or forage crop such as alfalfa. Forage produced on these areas may be used for grazing or hay production, where they are not too steep to be harvested.

## **CONCLUSION**

Based on research data and information from growers using the program, the Five-Point Program can eliminate at least 75% of the soil erosion presently taking place under dryland crop production. Estimates are that up to 14 tons of soil per acre can be lost each year from each cultivated acre of dryland crop land. Based on this estimate, the Five-Point Program would reduce soil erosion losses to approximately 3.5 tons per acre per year. This is below the 5 tons per acre set by environmental agencies as maximum tolerable erosion loss.

Sediments and chemicals associated with run-off from crop land are recognized as a major nonpoint source of water pollution in the Federal Water Pollution Control Act (Section 208 of P.L. 92-500). Reduction of soil erosion losses means less sediments in streams and rivers in the dryland crop areas. Thus the Five-Point Program is an integral part of the State Agricultural Pollution Abatement Plan and the national Rural Clean Water Programs.

The Five-Point Program is a long-term program. It may take 2 to 3 years to become established on a farm and even longer to reduce erosion to the desired level. It may appear that this program will cost money to establish and maintain. However, if we weigh the cost of implementing and using this program against the potential loss of our highly productive soils and the pollution of surface waters it is a relatively small price to pay for controlling soil erosion and maintaining our agricultural production.

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