

Sediment pollution site evaluated



To provide the actual volume of water coming from a watershed, a flume is placed in a terrace channel. A stage recorder is used in conjunction with the flume to provide a self-recording document of the flow.



A sediment trap located immediately below the flume provides information on the amount of soil loss which is occurring in the same watershed. In addition samples are taken with a special meter to measure how much sediment is carried out with the water.

In October 1979 Gerald O. George, agricultural engineer, erosion specialist, Columbia Basin Agricultural Research Center, Pendleton, established a terrace evaluation and demonstration monitoring site on Don Peterson's ranch at Valby. The site consisted of a recording thermometer, a measuring flume and depth recorder. The rain and snow gauge was to determine hourly rainfall and snowfall intensity. The volume rain gauge was to determine total weekly precipitation and backup for the recording gauge. The thermometer was to determine the zero, three- and six-inch soil temperatures. The flume and depth recorder were to determine the amount of runoff out of the terrace.

The site provided evaluation of the conditions that influence soil movement. Major erosion occurred last February after the snow had essentially melted. Erosion was caused by thawing of the ice in the frozen soil. As the ice melted downward in the soil, the soil became a quagmire, then fluid, and would start to flow. As the flow progressed downhill, it accumulated more fluid soil and water until it amassed to create visible erosion. The soil and water mixture would continue to move until there was a change in field slope, a terrace, waterway, stubble mulched field or other physical barrier.

The average soil movement between terraces was measured to 12.5 tons per acre last year on this site. Approximately 20 percent of the soil movement was transported out through the flume and terrace outlet.

From observations of stubble mulched fields in 1978-79, it appears that stubble mulch will greatly reduce erosion, and with terraces, will substantially improve water quality.

Farmers save water

What a sight it would be: 42.7 million gallons of water stored behind a dam only 18 inches high and 200,000 feet long.

The equivalent of such a dam is the accomplishment of Morrow County farmers in 1979, by constructing level, basin-type terraces. What this means is storing an amount of water equal to a rainfall of about one-half inch spread over 3,300 acres of cropland.

What is the value of saved moisture? It can be converted into increased production,

equal to two bushels per acre.

The primary and perhaps most important function of a terrace system is the gully and rill erosion control. The terraces are designed and laid out according to each individual field needs. These needs are based on the type of soils present, slopes of the land and the owners' method of tillage. Minimum tillage and proper use of the crop residues are directly related to terrace spacing. As resi-

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