Soil erosion is still Number One problem

COLLEGE PARK, Md — After four decades of soil conservation programs, erosion is still the dominant problem on more than half of the nation's cropland, says a National Resources Inventory report

Fred Miller, agronomist at the University of Maryland, says that agriculture will have to expend an additional 50 million barrels of oil a year to compensate for production losses because of erosion. According to Miller, the U.S Department of Agriculture admits that conservation efforts have accomplished less than a quarter of what is required to bring the erosion problem within tolerable limits on U.S. cropland.

Nearly one fourth of the nation's cropland has an annual erosion rate over 5 tons per acre. According to Miller, the average annual soil loss in Maryland is seven to eight tons per acre.

"The process is so subtle in many cases, the farmer doesn't even realize it," Miller says. He cites, for example, that an acre inch of topsoil weighs about 150 tons. If 10 tons per acre is lost each year, it will take 15 years to lose one inch. He adds that when rills or tiny gulleys become noticeable, it is an indication that 15-20 tons per acre are being lost

Miller points out the importance of ground cover to insulate the soil from the impact of the raindrop.

"The critical item in mulch erosion control is the cover — to intercept the energy in all that raintall " No-tillage methods maintain the cover and can be as productive as conventional farming with most soils he says

Many farmers have adopted no-till practices not only to conserve soil but also to economize because equal to or better yields can result with less time spent in the field Miller says that no-tillage corn has been "extremely effective" and that about half of the corn in the state is planted by no-till, but warns that of the remaining half, much is being planted on highly erodable land.

"For every inch of topsoil lost, we lose about three bushels per acre — based on corn," he adds.

Studies have found that corn yield losses from erosion range from more than one bushel to nearly nine bushels per acre for each inch of topsoil lost. According to Miller, the USDA expects corn and soybeans yields to drop as much as 30 percent over the next 50 years on some soils if current erosion rates continue.

Herbert Brodie, Extension agricultural engineer, asks, "Is the operation of machinery so complicated that tillage tools can not be lifted across a grassed waterway without destroying it?"

When fields are disced, grass waterways which carry upland runoff are often eliminated, apparently to save time and management effort. After a rain, although the grass is gone, it becomes obvious [illegible] the waterways are still there. With more rain, the waterways grow into gulleys and as crops are planted the gulleys become noticeable because nothing grows there

During the spring, when raintall is plentiful, it is easy to see what these gulleys do to fields, although crops can sometimes hide the evidence Although the growing season has ended, the problems are not over, he assured the gulleys still exist, and additional maintenance will be needed from crossing that gulley on every field pass

Brodie cites a case where a gulley caused 1,000 tons of soil (about $14,000 worth) to be moved from a field in less than six months. "Obviously, this farmer doesn't put much value on his soil," he says.

Grass can help in other ways as well. Buffer strips around the edge of the field to prevent soil loss will eventually outweigh the value of corn which could be planted in those end rows, Brodie says.

According to Miller, domestic and foreign demand for grains is increasing. These crops, often require land disturbance and cultivation, thereby exposing the land to the ravages of erosion. At the rates exports are increasing, "the danger of over-working the land is becoming imminent."

He explains that as demand boosts prices, "knee-jerk" reactions in the market by farmers to get top profits can totally destroy conservation measures. For example. straight row cultivation of tilled crops on hilly land, which is faster and easier than following the contour of the hillside, can result in erosion that may be many fold greater.

Erosion losses from deep soils, which can stand large amounts of erosion for many years, may not show a direct loss in crop yields today, but if continued will eventually reach a threshold of yield reductions, Miller says.

Measures to curb erosion involve financial burdens on farmers and taxpayers. Although some farmers believe in long-term agreements between the government and landowners, designed for conserving and insuring land investment, quick and easy production practices still mean the greatest short-term profits, Miller says. He is not surprised that farmers do not invest in erosion control since the costs are immediate while the benefits are spread over many decades.

"If a farmer is in a cost-price squeeze, he needs to cut corners, and an erosion plan with small immediate benefit may often be one of those things that is cut.

However, the government is providing some cost-sharing to farmers and many conservation practices are being subsidized.

Miller stresses the need for the professional conservationist to work directly with the farmer to plan control practices and points out that, while the farmer often does not have access to special kinds of equipment, technical assistance is available.

Along the designing programs for cost-sharing and developing technologies which protect the land while increasing yield, conservation remains a voluntary option on the part of the landowner, Miller says. While the payoff of conservation investments is long-term, "the farmer is in a short-term economic ball game."