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# Conservation Practices Save Soil and Sustain Agriculture

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# Conservation Practices Save Soil and Sustain Agriculture

## **Abstract**

Conservation planning is becoming increasingly necessary, especially with the current weather challenges we are experiencing and the unpredictability, intensity and duration of rain events. Soil erosion is always associated with tillage intensity in the spring when land is most vulnerable. The vulnerability is created by the lack of vegetation cover or residue to protect the soil surface from the intensity of rain.

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### Conservation Practices Save Soil and Sustain Agriculture

By Mahdi Al-Kaisi, Department of Agronomy

“The nation that destroys its soil destroys itself”— Theodore Roosevelt

Conservation planning is becoming increasingly necessary, especially with the current weather challenges we are experiencing and the unpredictability, intensity and duration of rain events. Soil erosion is always associated with tillage intensity in the spring when land is most vulnerable. The vulnerability is created by the lack of vegetation cover or residue to protect the soil surface from the intensity of rain.

Many factors contribute to this problem, but tillage is considered the primary one. Another concern is the conversion of Conservation Reserve Program (CRP) land back to agriculture production. Conversion can significantly setback soil quality and environmental benefits gained by many years in CRP. Land in CRP is generally enrolled for production and environmental reasons: row crop production can be marginal and damaging to both soil and water quality. Thus, enrollment in CRP prevents these highly erodible lands with marginal productivity from further deterioration.

Soil conservation practices can play a significant role in sustaining soil quality as climate change imposes additional stress on natural resources, including soil. Over 80 percent of Iowa's landscape is in agriculture production activities, such as row crops, pasture and forestry. Therefore, in order to sustain soil quality and maintain high agriculture productivity, conservation practices need to be part of the portfolio of our agriculture systems, not only for environmental concerns, but for economic viability. Economic viability comes through the increase in the resiliency of agriculture production systems. Iowa has the largest percentage of active agriculture land in the nation. Coupled with intense management, this raises concerns about the resulting impact on soil and water quality when conservation practices are absent.

Many producers have voluntarily adopted conservation practices that lessen the negative effects of agricultural activities on the environment. The outcome has been significant over the past few decades, with benefits in crop productivity, more efficient use of time and equipment, and a reduction in soil erosion. However, the current soil erosion level stands at approximately five tons per acre and in some areas in the state can exceed that rate by 10 fold or more.

#### Implement and target conservation practices in sensitive areas

To minimize the impact of soil erosion on soil and water quality we must examine and sustain our efforts of implementing and targeting conservation practices in the most sensitive areas. Current commodity prices, coupled with promotion of tillage technology, present significant challenges to

producers who want to integrate conservation practices into their systems. But the reality is conservation practices if treated in a system approach and not as single separated practices can provide high economic and environmental rewards.

In order to promote a conservation ethic and land stewardship, producers should consider adopting conservation plans that are:

- practical,
- site specific,
- achieve the intended objectives,
- and are easily integrated within an overall production system.

These conservation plans can include, but are not limited to, no-till, strip-tillage, cover crop, perennials, grass waterways, terraces, buffer strips, pasture erosion control, manure application plan, soil testing, etc. Conservation planning and implementation of such practices need to be considered carefully as solutions to reduce potential row cropping system effects on soil and water quality. Conservation practices must be an integral and essential component of nutrient reduction and sediment and nutrient loading plans as one of the effective solutions in protecting soil and water quality.

The bottom line is that we must sustain one of the greatest strengths of Iowa agriculture, our soil.



**Contour cropping in southwest Iowa.**

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