

CONTROLLED DRAINAGE

OPTIMIZED WATER USE FOR AGRICULTURE

WHAT IS CONTROLLED DRAINAGE?



Controlled drainage, or drainage water management, involves a technique using a control structure to adjust the outlet height of a drainage system. This approach allows for precise control over the timing and volume of water drained from fields, directly impacting water conservation and nutrient runoff.

HOW DOES IT WORK?

CONTROL STRUCTURE

YOU CAN RAISE OR LOWER THE OUTLET ELEVATION BY ADDING OR SUBTRACTING GATES

Control Structure

Positioned at the field edge, it regulates the outlet height.

Water Retention

Retained water limits flow during non-critical periods, reducing nutrient runoff.

Enhanced Yields

Retains water when crops need it most, increasing crop yields from 5 to 15 percent.

IMPACT AND COST

Environmental Benefits: Up to 40 percent reduction in nitrate levels can be achieved due to decreased flow volume. It also lowers ortho-phosphorus exports, enhancing water quality.

Installation Costs: The average installation is \$49 per acre more than traditional drainage systems. However, with a practice cost of just \$0.91 per pound of nitrogen removed, it presents a cost-effective solution for sustainable farming practices.

IMPLEMENTATION

Flat Land: Best suited for fields with less than 1 percent slope. This practice becomes more economical as the flatness of the management zone increases.



Note: For assessing controlled drainage suitability, visit the Transforming Drainage project's suitability map online.

Controlled drainage emerges as a pivotal agricultural practice—expertly managing water resources to enhance crop yields, minimize nutrient runoff and present a sustainable, cost-effective strategy for modern farming.

SOURCE: AGRICULTURAL DRAINAGE MANAGEMENT COALITION (ADMC)

WATER RETENTION

ADJUSTING THE OUTLET LEVEL HELPS RETAIN MOISTURE IN THE SOIL, INCREASING YIELDS

