



Keeping nutrients in the field and out of tile lines

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By definition, drainage water management is the practice of managing water discharged from subsurface agricultural systems via a water control structure at the end of a conventional drainage system. It functions as an in-line dam, allowing the outlet to be artificially set at levels ranging from the soil surface to the bottom of the drain. These structures create a variety of options for producers and can artificially raise the water table in a field when water is scarce and are used before liquid manure applications are made, reducing the risk of manure entering surface water through tile lines.



Root holes, cracks and earthworms create fissures through the soil profile, often leading directly to tile lines. These openings, generally referred to as macropores, allow rapid transport of nutrients and chemicals to the tile drainage system. Manure that is high in water content and low in nutrients, such as milkhouse wash water and lot or surface runoff has an increased risk of flowing through macropores and directly into tile lines. No-till systems improve water infiltration by increasing soil macropores, but are then also at a greater risk of nutrients flowing directly into tile. Raising the level of the drainage control structure before liquid manure is applied to fields can reduce this risk.

Understanding how water and nutrients move through the soil helps improve tile line management. Using control structures in combination with other management practices, such as tillage before manure application to disrupt macropores, decreases the risk of nutrients being discharged into surface waters. Slowing the movement through the soil profile provides opportunity for liquid manure to be absorbed before it reaches the sub surface drainage system.

To learn more about reducing the risk of manure movement into tile lines, and to see a drainage control structure, attend the [Use It, Don't Lose It Field Day](#) from 8:30 a.m. to noon, Aug. 28, at [2435 N. Tallman Rd., Fowler MI 48835](#). Featured demonstrations include direct flow to the tile lines, tile line control structures, water infiltration and runoff, and responding to emergencies. To RSVP, call 989-224-3720 ext. 5 or email info@clintonconservation.org. For more information, visit the [Clinton Conservation District](#) website.

This event is sponsored by [Clinton Conservation District](#), [Michigan State University Extension](#), [Clinton County Farm Bureau](#), [GreenStone Farm Credit Services](#), [USDA Natural Resources Conservation Service](#) and [Agri-Drain Corporation](#).

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