

## WATER --- SECOND ONLY TO OXYGEN

A key part of any grazing system is a clean, reliable water source. It is preferable to have water available within a walking distance of no more than 600 - 800 feet. Keeping the animals from entering the water source is important in minimizing disease related problems and keeping everyone happy. The management system that most of us develop is a process of "fixing" the weakest link. The first step for a grazing system was to control the animals. Once the "control" is in place, often water becomes the weakest link or limiting nutrient.

Improved forage utilization is one of the main benefits of a good water source plan. In one University of Missouri study with non-uniform grazing of a 160-acre grazing cell, a theoretical yield loss of almost 19% was reported, when cattle had to travel more than 900 feet to water. Studies have also shown that gains can improve by 20% with easy access to fresh water. Increased water consumption does have a positive impact on milk production.

Several pieces are important in putting together a sustainable water system. A source, a delivery system, and easy access are all important links in a water system for grazing cattle. In most parts of our region, spring developments provide an excellent source of water. These usually involve a tile to a collection basin and a gravity line to a concrete water tank. If the spring water vein is high enough up the elevation, a series of gravity flow tanks can be developed from the overflow of the higher elevation tank. Given a dependable spring near to an electrical source, the collection basin can be a large container (septic tank type) equipped with a submersible pump to provide a pressure system. Ponds provide a good water source, if the animal access is from a tank below the pond. Solar pumps offer another option in areas where no electric power is available and water needs to be pumped. Water can be pumped from a "sump" or "collection tile" near a stream, keeping animals excluded from the stream, to a water tank in the grazing area. There are still a lot of unknowns about this system, such as life of the pump. Pasture pumps, hydraulic rams and sling pumps are other options, but they may require more attention than most of us are willing to exert.

Portable water systems add a new level of flexibility to the grazing system. Burst-proof pipe, small tanks with full-flow valves and quick couplers make these systems farmer-friendly. Much of this technology is borrowed from the trickle irrigation industry. Many producers are surprised at how small a water tank can be used with these systems. Like the fencing system, nothing should be permanent the first year or two, until an optimum design is attained.

What can you spend on a water system? Every operation is unique with no two plans exactly alike. A very general rule of thumb is that the water system may cost about twice the cost of fencing per acre. Ben Bartlett, Michigan State Extension Service, says that cost of materials for a simple, potable distribution system could be as little as a two-year payback on a 40-acre, 8-paddock system in a worst case scenario. A word of caution again is that each operation is different. Payback will be determined by how the "weak link" really impacts the end results. A good water source 500 feet from stocker cattle, replacing a mud hole one-half mile away, will likely have a bigger financial impact than replacing a clean source 1,000 feet from a cow herd with a closer source. Always "pencil out" a payback plan before investing in an improved water source and access system.