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“Beef Production Strategies” article

Water Source Management on Beef Cattle Operations

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Water Supplies

Ground water sources for cattle include ponds, lakes, streams, and creeks. Wells, springs, and community water supplies can provide water to cattle watering troughs. A continuous supply of clean water is essential for cattle. When streams, creeks, springs, or ponds are utilized as water sources for cattle, it is important to assess the reliability and quality of these water supplies. Reduced stream or creek flows and receding pond water levels are typically experienced during extended periods without precipitation. Intermittent flow of streams and creeks during dry periods precludes their use as the sole water sources for cattle. Removal of quantities of water from streams and creeks that greatly reduces or eliminates water flows downstream should be carefully monitored so as not to infringe upon the riparian rights of downstream neighbors. Always check current local, state, and federal regulations to determine the restrictions on or permit requirements, if any, for removing water from public or shared waters.

For water tanks, the capacity should be matched to the number and size of cattle it will be expected to serve. Associated pipes and water sources should be capable of consistently supplying needed water quantities. Inadequate water capacity will result in water filling that cannot keep pace with water consumption and cattle crowding around the water source. Timid cattle are at most risk of water deprivation in this situation. If the water tank empties enough, cattle attempting to drink may be able to move or damage the tank. In some cases, the float may need to be protected from cattle to prevent damage to the float or an overflowing trough. Use of a float visible at a distance can make checking water supplies easier.

Cattle congregate around water sources, especially if they are located in shaded areas during warm weather. The areas immediately surrounding these water sources are high traffic areas and suffer damage from cattle hoof action. Soil erosion, pasture damage, and mudhole development can follow. Placement of water troughs on concrete pads or other surfaces may be beneficial. Geotextile fabric topped with gravel, concrete washout, etc., can provide a solid, stable surface for cattle around water troughs. Install pads with coarse surfaces that will not cause cattle to slip and fall. Consider elevating a concrete pad above surrounding gravel or other pad so that cattle have room to place their front feet on the elevated pad supporting the waterer but not their back feet. This may reduce the risk of cattle defecation and urination in water troughs.

Drought and Hot Weather Concerns

Periods of drought and extended hot weather can lead to reduced surface water supplies. Decreased water levels lead to increased concentrations of contaminants that reduce water quality. Freshwater ponds may recede to levels that greatly reduce water quality or may dry up altogether. Stagnant water sources may also serve as breeding grounds for mosquitoes.

Cattle often seek to cool themselves by standing in ponds and creeks when accessible. They spend more time near waterers in the afternoon hours, corresponding to the hottest part of the day. The resulting hoof action, urination, and defecation can lower water quality. Pesticides sprayed on cattle or impregnated in ear tags can be transferred to water supplies when cattle are allowed to loaf in surface water sources.

To minimize water quality problems, producers can choose to restrict access points to ground water supplies and to create stream crossings designed to handle high cattle traffic rates with minimal impact on water quality. The National Resources Conservation Service can provide construction designs and specifications for restricted access points and stream crossings. Use of off-stream water can be an effective tool in discouraging cattle to spend time near or in streams when stream access is limited. Other factors such as water and air temperature, relative humidity, forage and shade availability have to be considered when there is free access to a stream in developing effective management of stream use by cattle.

Winter Weather Concerns

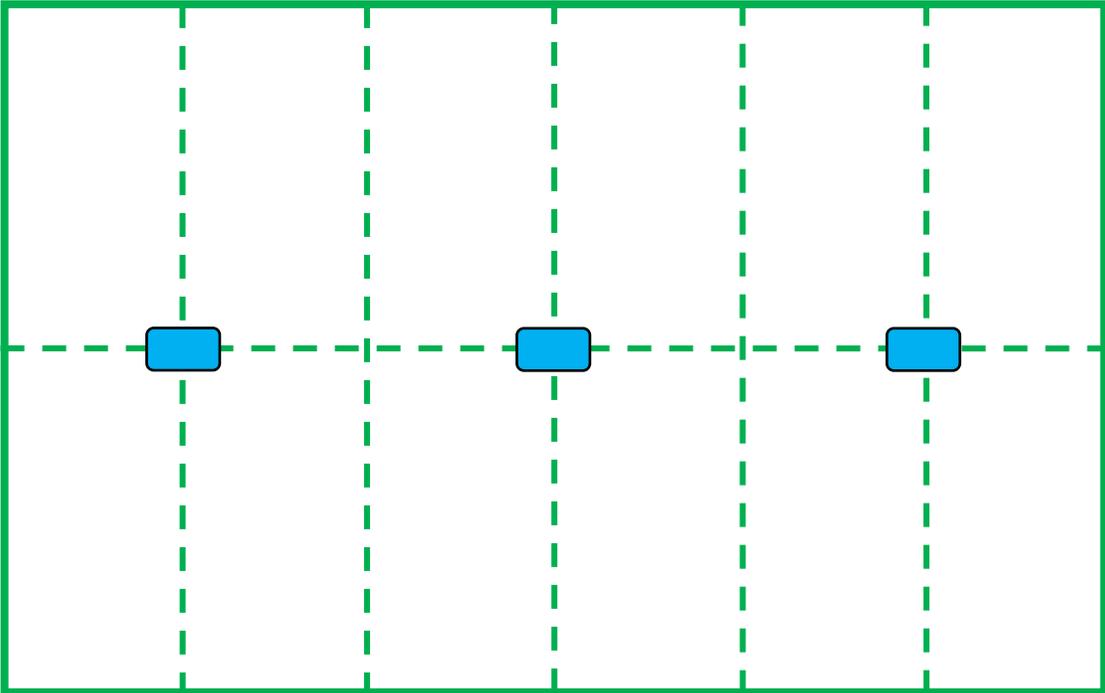
In the Southeast USA, freezing of water troughs is not a major concern. However, occasionally extreme winter weather conditions can cause problems with water supplies on beef cattle operations. Potential freezing of water supplies necessitates careful observation of cattle water sources when subfreezing temperatures occur. Outdoor water supplies in shaded areas are typically slower to thaw than water supplies housed away and insulated from environmental temperatures or exposed to direct sunlight. If water supplies are turned off during extremely cold conditions, it is important to monitor cattle water tanks and to resume water flow in a timely manner. Water troughs can be installed that are designed to better withstand freezing conditions. Strategic water trough automatic valve and pipe placement can eliminate the need for electric water heaters in freezing temperatures.

Water Accessibility

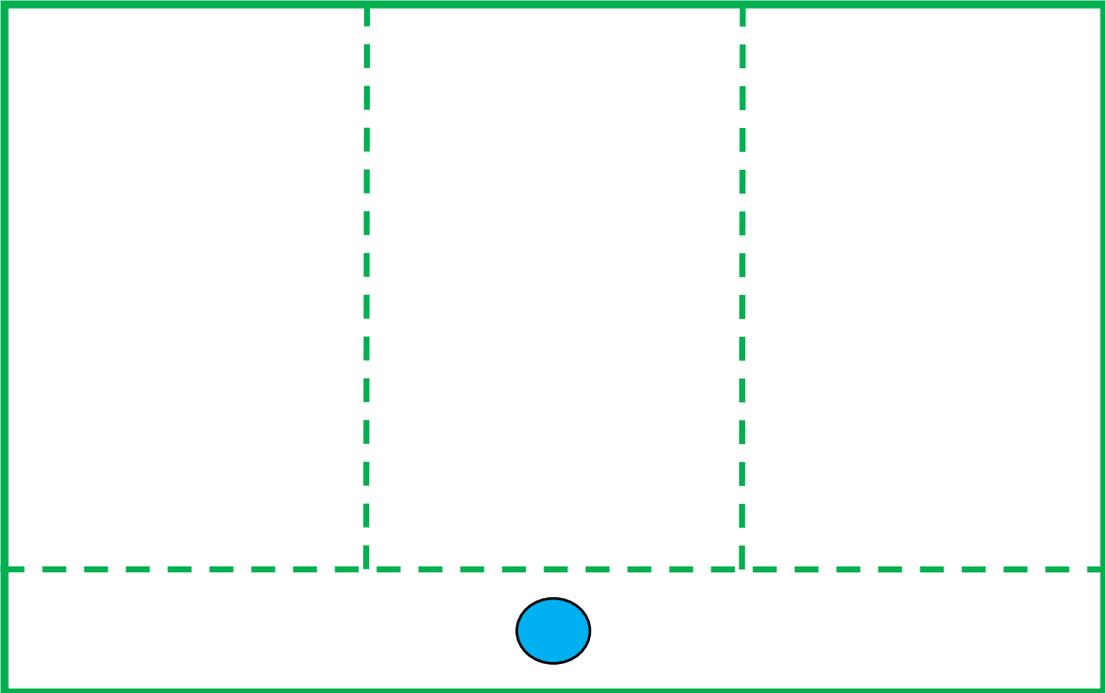
Both water accessibility and quality are important in maintaining adequate water intake. Water placement in pastures impacts grazing distribution, particularly if cattle are forced to travel long distances to water. Pasture systems should be designed to provide water sources within approximately 650 to 1000 feet of all areas of the pasture for optimum uniformity of grazing. For intensive grazing systems, strategic water placement should be planned. Use of centralized watering stations in a fence line, lane, or wagon-wheel location (Figure 1) allows multiple paddocks to be served by one water trough. One problem with lane locations of waterers is that lanes to waterers will become high traffic areas subject to trampling action and concentration of nutrients from manure and urine. Couplers, pipes or hoses, and inexpensive water troughs such as halved plastic drums can also be utilized to establish temporary water supplies off of existing water sources relatively quickly and easily.

For newly arrived feeder or stocker calves, water placement in receiving pens should be along fence line to cause calves to encounter the water trough while walking the perimeter of the pen. Placement of water troughs in the center of receiving pens is not conducive to getting calves to consume water shortly after arrival compared with fence line placement. Allowing waterers to run over may also help by attracting calves'

attention to water sources. For more information on water sources for beef cattle, contact an office of the Mississippi State University Extension Service.



 Water trough  Perimeter fence  Cross fence



 Water trough  Perimeter fence  Cross fence

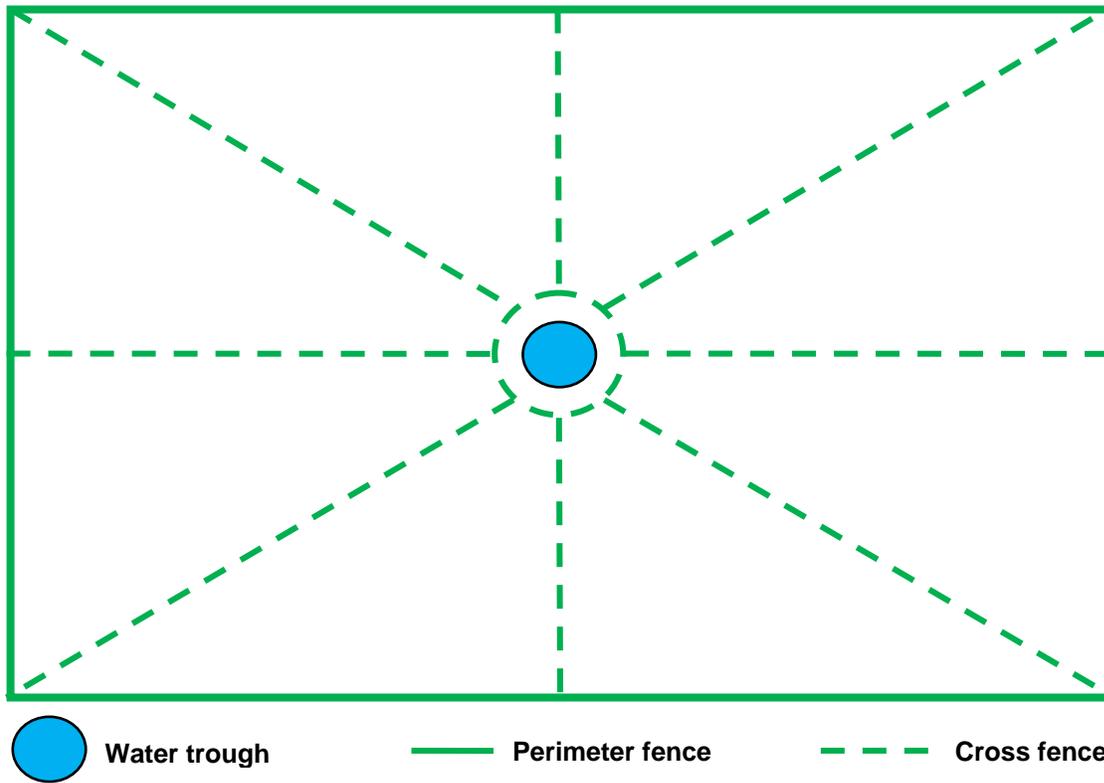


Figure 1. Examples of strategic water placement in intensive grazing systems