Livestock Management Strategies for Improving Soil Fertility  
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During drought conditions, many cattle producers are faced with soil fertility decisions. Some opt to not fertilize; however, fertilizing during a drought may be the most important time to do so. A well fertilized soil will utilize limited rainfall more efficiently than a poorly fertilized soil.

In addition to fertilizing pastures, producers can reduce nutrient losses and improve soil fertility by practicing certain livestock management strategies. Proper livestock management can recycle forage nutrients removed by cattle or add nutrients if cattle are supplemented with purchased feed.

According to the Natural Resources Conservation Service (NRCS) Agricultural Waste Management Field Handbook, a 1000 lb live weight grazing beef cow can excrete 0.33, 0.28 and 0.31 lbs/day of N, P₂O₅ and K₂O, respectively. Over a one year period, this translates to 120, 102, and 113 lbs of N, P₂O₅ and K₂O, respectively. If assigning a stocking rate of 1 cow per 4 acres, this further translates to recycling 30 lbs N, 26 lbs P₂O₅ and 28 lbs K₂O/acre/year.

By using cross-fencing and intensive grazing systems, a producer can recycle these valuable nutrients back onto the pasture rather than concentrating or losing them in heavy-use areas where animals congregate. Nutrients lost to water sources are not only an example of poor nutrient management but are also a source of pollution. Cattle with full access to ponds and streams can erode the banks while excreting excess organic matter and nutrients into the water. Pond bank erosion is more excessive during a drought when water levels are low. Both manure and sediment erosion can result in poor water quality at a time when palatability for livestock consumption is not only important for performance but for survival. Water degradation can also lead to toxic algae blooms and poor fish habitat.

Restricting livestock from having full access to water sources by fencing and installing limited access watering points or freeze proof tanks are examples of improving water quality for livestock, fish and wildlife and improving nutrient management. Design criteria should account for low water levels during a drought. Contact your local NRCS office for information on cost share programs for these practices.

Another nutrient management practice includes providing mineral supplements away from streams and ponds. Also, concentrated manure from heavy use areas can be spread with a drag chain to improve manure distribution in a pasture.

A producer that continually practices proper nutrient and livestock management strategies can improve soil fertility and water quality while reducing fertilizer inputs over time. Innovative farm management practices may be key to surviving a drought.
**Figure 1.** A pond with eroded banks and manure runoff caused by livestock.

![Figure 1](image1.png)

**Figure 2.** Limited access watering points and freeze proof tanks improve nutrient management while reducing livestock damage to water sources.

![Figure 2](image2.png)

**Figure 3.** A drag chain can be used to improve manure distribution near heavy-use areas.

![Figure 3](image3.png)