



Farm Animal Council of Saskatchewan Inc.

## **Animal Health Concerns When Pasture and Feed is Limited**

*Drought conditions can be so serious that threats to animal health are often overlooked. While an overt, prolonged lack of feed or water leads directly to severe weight loss and even death, a more commonly observed effect may be a reduced reproductive performance or compromised immune response. Indirect effects may be more common and responsible for significant harm as well.*

---

### **Direct Effect of Drought**

Lack of sufficient energy and protein can be exacerbated by the extensive foraging cattle will do. If cattle don't have enough good water to drink, an immediate effect is a reduction in appetite, thereby further increasing the impact. The first visible effect of insufficient nutrients is often impaired reproductive performance; complete failure to conceive or conceiving late in the breeding season. In addition, some cows may dry up sooner, resulting in calves with reduced weights at weaning.

### **Nutritional Deficiencies**

While obvious lack of energy and protein is the most serious deficiency, other micro-nutrients may also be lacking and cause their own problems. The premature maturation of forages may mean cows and calves will be depleted of Vitamin A and E stores. In growing calves, deficiencies of these vitamins can cause clinical diseases, like blindness, nervous disease (Hypovitaminosis A), heart disease or increased infectious disease (Hypovitaminosis E).

During dry years, cows are often fed cereals that are close to maturity, thereby creating a relative lack of the macro-elements like calcium and phosphorous. This may even be amplified by an excess of potassium. Cows fed an unsupplemented diet of crop residues will often sustain outbreaks of non-parturient hypocalcemia (milk fever).

### **Toxicities**

On the prairies, most cattle have been watered out of open ponds or dugouts that often are fed from spring run-off. When conditions are very dry and hot, evaporation increases the total dissolved solids in the remaining water.

A similar process occurs in shallow wells. In areas of alkaline soil, this process is common and cattle existing exclusively on these water holes often develop a form of sulfate toxicity called polioencephalomalacia (a brain disease). When this is a herd problem, many cattle will refuse to drink and grazing will be limited. The sulfates also can have a laxative effect and cattle will often have diarrhea despite the very dry conditions.

Additionally, when cattle are moved from a field with little forage and/or water to one with more grazing, they often cannot adapt fast enough. Some of the ruminal by-products produced (3-methyl indole) by this change can create an interstitial pneumonia that can be fatal and can occur in an "outbreak-like" situation. While not a true toxicity, the ruminal upset produces the poison that creates the catastrophe.

### **Indirect Effects of Drought**

When pastures dry up, cattle often investigate other sources of feed or water. Cattle may break out of a paddock and find a leftover pile of

grain on a stubble field or a poorly-contained granary which can then lead to fatal grain engorgement. The rapid disappearance of forage or pastures may also force cattle to consume plants they would usually leave alone, setting the stage for a possible plant toxicity problem.

If the feed in a paddock is limited, it is usually more efficient to feed cows and calves separately than to feed milking beef cows enough to feed their calves through the milk. Providing enough milk for the calf may be a problem as well, if the waterholes do not have an adequate water supply.

An often unrecognized result of drought and receding water holes is their contamination. In many areas, as the ponds shrink in size, new ground is exposed...ground that has been inaccessible to the herd, often, for years. Access (mud clinging to feed, hide and teats) to this "new earth" can mean cattle are exposed to infectious agents like clostridial and even Anthrax organisms that have been hidden since the last drought. Other infectious agents (like coccidia, cryptosporidia, mycobacterium) are known to survive in warm water heavily contaminated with feces and urine.

Therefore, a water hole that in wet years is almost pristine, may in dry years become a source of infectious agents that could produce an outbreak in the herd.

Dry pasture conditions often contribute to a dusty environment whenever cattle congregate or move. This can become critical when cattle are gathered for any management event. Even feeding cattle may provoke extremely dirty conditions, as might corralling the herd for weaning. Extremely dirty conditions in yards and corrals may overwhelm the normal defense mechanisms of a calf, resulting in a variety of simple pneumonias in a group. To this, add the effect of an immune system compromised by hypovitaminosis E and a respiratory tract with reduced function because of hypovitaminosis A, and you can have a full-blown outbreak of respiratory disease.

## Recommendations

1. Provide adequate drinking water. You may need to pump water out of a dugout into a trough.
2. Supplement forages with vitamins and minerals if "green stuff" has disappeared for more than 60 days.
3. Anticipate additional management will be necessary during a drought (sprinkler in weaning corral, additional vaccinations and treatments, more ration balancing).
4. Prevent cattle from trampling the water holes.
5. Anticipate herd management may change—e.g. may need to wean early or cull cows early.



Farm Animal Council of Saskatchewan Inc.

502 - 45th Street West, 2nd Floor, Saskatoon, SK S7L 6H2  
Phone: 306-249-3227 Fax: 306-244-4497  
e-mail: [facs@sasktel.net](mailto:facs@sasktel.net)  
website: [www.facs.sk.ca](http://www.facs.sk.ca)

*FACS represents the livestock industry in advancing responsible animal care and handling practices in agriculture.*

Associate Memberships are available from \$50.00 – \$199.99 + GST.  
Active Memberships start at \$200.00 + GST  
Receipts are issued for all memberships.

*This FACS initiative is funded by the Saskatchewan Beef Development Fund.*