

Multimin PUTS MICRO MINERALS ON THE MAP!

KANSAS – **Micro Minerals** (Cu, Mn, Zn, Se) in Cattle:

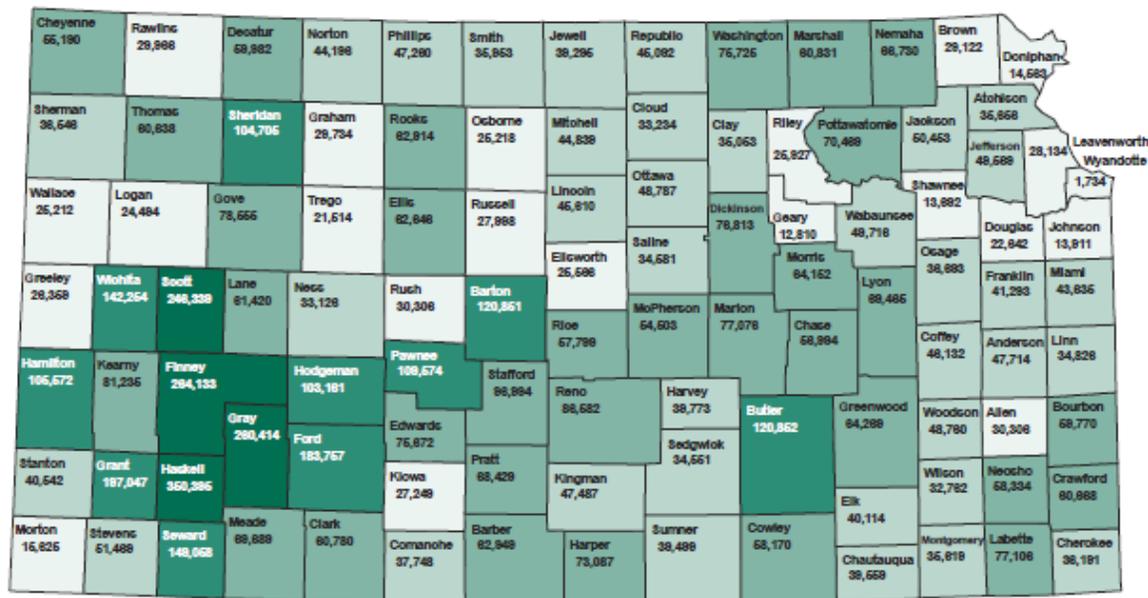
Cu and Zn concentrations tended to be lower during dormancy of Kansas native grasses than during the growing season. Iron and Mg concentrations did not show that trend. The level of Cu in both forage types was adequate in June but marginal in February in terms of meeting a grazing animal's dietary requirements. The

Zn levels were marginal to deficient in both forage types at both forage sampling times.

The Fe content was adequate e in both forage types in June and was very high in the short grass samples in February. This research indicates that Zn may be marginally deficient in Kansas native range forages.

A NAHMS beef survey of forages collected in Kansas indicates that most forage samples are marginal to deficient in zinc and a fairly high proportion of the forage samples contain an adequate amount of manganese. Copper levels varied from marginal to adequate, which is compounded by the high iron content (above 350-400ppm) and the relatively high levels of molybdenum (above 1 ppm) in many forage samples. Iron and molybdenum are antagonists that can reduce the availability of copper.

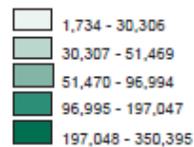
Cattle and Calves Inventory in Kansas, by County, 2007



Source: Institute for Policy & Social Research; data from U.S. Department of Agriculture, 2007 Census of Agriculture.

State: 6,663,163

Number of Cattle and Calves



Cattle with trace mineral deficiencies often show no clinical signs until they are severely deficient, but a chronic deficiency inhibits performance and decrease production.

Clinical signs of copper deficiency include:

- Immune suppression – disease breakouts and failure to respond to vaccination
- Rough, red dull hair coat
- Anemia

Clinical signs of selenium deficiency include:

- Muscle degeneration (white muscle disease)
- Reproductive failure
- Immune suppression

Clinical signs of manganese deficiency include:

- Bone abnormalities
- Reduced growth rate
- Reduced fertility

Clinical signs of zinc deficiency include:

- Compromised hoof integrity
- Bull reproductive failure
- Anorexia and weight loss esp. in calves

Where does Multimin fit in?

- Multimin provides zinc, manganese, copper and selenium in a readily available form as an injection.
- Multimin rapidly increases trace mineral status of animals.
- Multimin rapidly increases liver storage of trace minerals following injection.
- Multimin bypasses antagonists in feed, forage, distillers grain and drinking water that can reduce the absorption of these critical trace minerals.

Reference :

Arthington J.D., Corah L.R., Utter S.D. Effect of stage of growth and sampling procedure on the trace mineral content of Kansas native grass.

Corah L. Understanding basic mineral and vitamin nutrition