

These conditions may be intensified under situations where there is a combination of limited dietary K and heat stress.

### The Proof Is in the Balance

Experience in east Texas has shown that for enhanced milk production during heat stress periods of the year, bermudagrass K content should be 2.0 percent or higher on a dry weight basis. Remember, the K content of bermudagrass on many dairy and beef operations is often lower than 1.3 percent.

**Table 1** shows an estimation of K intake and output of a 1,500 lb lactating dairy cow under heat stress (over 85° F) conditions assuming an average concentrate

intake of 30 lb/day and a forage intake of 20 lb/day, minus the K loss in milk, sweat, urine and feces.

### Summary

Under certain environmental conditions such as heat stress and physiological conditions such as lactation, cattle nutritional requirements for K may vary dramatically. Researchers have noted that K requirements for dairy and beef cattle are higher under these conditions than previously reported. One way to off-set high K loss during heat stress is to provide forages higher in K (i.e., bermudagrass with 2 percent K). That requires adequate amounts of K fertilization. Adequate K in forage will help dairy and beef cattle tolerate heat and stave off declining milk production. ■

**Table 1. Estimated daily K balance for a 1,500 lb lactating dairy cow.**

Estimated daily K balance (based on 1.3 percent K forage)						
K Intake, lb		K Output, lb				K Balance
Concentrate	Forage	Milk	Sweat	Urine	Feces	(±)
0.15	0.26	0.10	0.10	0.30	0.05	-0.14

  

Estimated daily K balance (based on 2 percent K forage)						
K Intake, lb		K Output, lb				K Balance
Concentrate	Forage	Milk	Sweat	Urine	Feces	(±)
0.15	0.40	0.10	0.10	0.30	0.05	0.0

## Proceedings of North Central Extension-Industry Soil Fertility Conference Available

**PROCEEDINGS** of the 23rd North Central Extension-Industry Soil Fertility Conference, October 27-28, 1993 in St. Louis, MO are available through the Potash & Phosphate Institute (PPI). This Conference annually brings together researchers, Extension personnel, consultants, fertilizer dealers and ag industry representatives to be updated on the latest developments in soil fertility research and education. Reports from North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Kentucky, Michigan, Indiana, Ohio and Ontario are included along with special invited topics. Some specific items of interest in the ninth volume of this publication include: variable-rate fertilizer application; update and economics; regionalizing nutrient recommendations; field scale fertility recommendations and spatial variability; the state-of-the-art of starters; residue management effects on fertilizer use efficiency and other interesting topics.

To order a copy of this publication contact PPI, 2805 Claflin Road, Suite 200, Manhattan, KS 66502. Copies are \$15 each. Copies of earlier editions of this Conference proceedings are also available on request, \$15 per copy. ■