

Abstract

Grazing cattle in the tropics and especially in Uasin Gishu district depend on a variety of plant species for their mineral supply. One area of concern is that the grazing cattle may be experiencing mineral imbalances due to lack of proper mineral mapping of the region to ascertain the levels of imbalance. A study conducted in the Uasin Gishu region revealed severe deficiencies of mainly Cu (3.30 ± 0.90) and Zn (6.70 ± 0.40) in soils, the elements Na (1.00 ± 0.39), K (11.80 ± 5.00), Ca (0.57 ± 0.19), Mg (1.35 ± 0.72), P (6.34 ± 3.22), Fe (56.00 ± 0.53), Cu (5.32 ± 2.84), Zn (19.50 ± 8.20) in pasture species and the elements Fe (2.43 ± 1.53), Mn (0.26 ± 0.14), Cu (0.60 ± 0.17), Mg (0.02 ± 0.01) in animal blood. The study recommends immediate mineral supplementation schemes to grazing cattle in the region and encouragement of certain pasture species in the region. A study was conducted to assess the physical properties of gum Arabic obtained from two *Acacia Senegal* varieties (var. *Senegal* and *Mar.kerensis*), in Marigat division, Baringo district. Gum Arabic samples from the experimental sites at Solit, Kapkun, Kimorok and Maoi were collected, dried and analysed to establish their physical characteristics. Moisture content in gum Arabic obtained from variety *kerensis* in Kimorok and Maoi (17.5 ± 1.00 and $15.4 \pm 0.50\%$) were significantly higher ($P < 0.05$) than those of variety *Senegal* in Solit and Kapkun (15.0 ± 0.50 and $14.9 \pm 1.80\%$), while internal energy (33.4 and 33.76%) were not significantly different ($P > 0.05$) from those of variety *Senegal* found in Kapkun and Solit (33.0 and 32.96%), respectively. Ash content in gum Arabic from variety *Senegal* in Solit and Kapkun (2.94 and 3.16%) was higher ($P < 0.05$) than those of variety *kerensis* found in Kimorok and Maoi (2.88 and 2.72%). In Kapkun, volatile matter in gum Arabic from variety *Senegal* (64.2%) was higher ($P < 0.05$) than the quantities of variety *kerensis* found in Kimorok, Solit and Maoi (63.8, 63.7 and 63.6%), respectively. Moisture content in gum Arabic from variety *Senegal* in Solit and Kapkun (15.0 ± 0.40 and $14.9 \pm 1.80\%$) fell within international specifications (13 to 15%), while variety *kerensis* in Kimorok and Maoi (17.5 and 15.4%) fell outside the specifications. Moisture, ash and volatile matter contents in gum arabic from A. *Senegal* variety *Senegal* were 14.9, 3.16 and 64.24%, while A. *Senegal* variety *kerensis* had 15.2, 2.88 and 63.8%, respectively. Moisture content in gum Arabic from A. *Senegal* variety *Senegal* fell within international specifications while A. *Senegal* variety *kerensis* fell outside the specifications. Ash, volatile matter and internal energy contents in gum Arabic from A. *Senegal* variety *kerensis* and variety *Senegal* fell within the specifications. The gum arabic from A. *Senegal* variety *Senegal* in Solit and Kapkun was of better quality than that of A. *Senegal* variety *kerensis* in Kimorok and Maoi.