

Abstract

This study evaluated the accuracy of a once daily dose of ytterbium (Yb)-labeled forage as a marker to estimate fecal output of cattle grazing at the National Range Research Station, Kiboko, Kenya. Ytterbium-labeled forage was administered daily to 15 zebu steers for 10 consecutive days for each of 3 trials. During the last 5 days of each trial, fecal grab samples were collected at 6-h intervals. During this same 5-day period, total fecal output was collected from 9 of the steers. Ytterbium estimates of fecal output were 114%, 104%, and 144% of actual fecal output for March, April, and July trials, respectively. Dry matter and organic matter intake estimates between Yb and total collection procedures differed ($P < .05$) in the July trial, but not the March and April trials. Compared with total fecal collection, Yb overestimated organic matter intake by 20, 2, and 40%, respectively for March, April and July trials. Based on our results, daily dosing of Yb-labeled forage will provide reasonable estimates of fecal output when relative estimates of intake between range management treatments are needed.