Summary

Several methods for estimating the in vitro dry matter digestibility (IVDMD) and the indigestible neutral detergent fiber (INDF) of nine grasses and eleven tropical forage legumes were compared in CIAT's Pasture Quality and Nutrition Laboratory. Specifically, the need to apply or not apply correction factors (CF) in the determination of these parameters to compare results within the RIEPT was determined.

The methods used to determine the IVDMD were: Alexander and McGowan;Tilley and Terry modified by Moore; Van Soest; Texas A & M; and Pepsin-cellulase. To determine the INDF, the Texas A & M and modified Moore methods were compared, with and without ruminal bacterial change at 72 hours of fermentation. The comparison between methods was made by linear regression analysis ($Y = a + bX$). A 't' test was used to determine if the intercept of the regression was different from 0 or if the slope of the regression was different from 1.

The results of the IVDMD in grasses and legumes with the Alexander and McGowan method were similar to those obtained with the modified Moore method ($a = 0$, $b = 1$; $P < 0.05$). The results in IVDMD using the Van Soest method and the modified Moore method were highly correlated ($R^2 = 0.95$) with estimates, being proportional but not identical ($a \neq 0$, $b \neq 1$; $P < 0.05$); therefore, a CF is required to compare estimates of IVDMD. Similar results were found when comparing results of IVDMD using the Texas A & M and modified Moore methods. In the comparison of estimates of IVDMD using the Pepsin-cellulase and modified Moore methods, it was found that with grasses and legumes the intercept was equal to 0 and the slope equal to 1 ($P < 0.05$). The methods are therefore considered to give identical estimates of IVDMD.

The modified Moore method without ruminal bacterial change underestimated the INDF in the grasses but not in legumes included in the test, which did not occur with the Texas A & M method using an enriched medium. This indicates that in order to determine the INDF of tropical grasses with the modified in vitro Moore method, it is necessary to change ruminal inoculum after 72 hours of fermentation.