

MARKER CALCULATIONS

Updated September 2013

I. Internal Indicators of Digestibility

A. If the % internal indicator in the feed is 8.0% (DM basis) and the % internal indicator in the feces is 18.0% (DM basis), what is the dry matter digestibility?

$$\% \text{ DMD} = 100 - 100 \frac{(\% \text{ indicator in feed})}{(\% \text{ indicator in feces})}$$

$$\begin{aligned} &= 100 - 100 \frac{(8.0\%)}{(18.0\%)} \\ &= 55.6\% \end{aligned}$$

B. If the cellulose content of the feed is 25.0% and the feces is 35.0%, what would the % cellulose digestibility be?

$$\% \text{ cellulose dig.} = 100 - 100 \frac{(\% \text{ indicator, feed})}{(\text{indicator, feces})} \times \frac{(\% \text{ cellulose, feces})}{(\% \text{ cellulose, feed})}$$

$$\begin{aligned} &= 100 - \frac{100(8.0\%)}{(18.0\%)} \times \frac{(35.0\%)}{(25.0\%)} \\ &= 37.8\% \end{aligned}$$

II. External Indicator of Total Fecal Excretion

A. If 10g of indicator were administered each day to a grazing cow and the concentration of the indicator in the resulting feces was 2.00 g/kg of DM, how much feces was excreted per day?

$$\text{Total fecal excretion} = \frac{\text{Amount of indicator administered}}{\text{Concentration of indicator in feces}}$$

$$= \frac{10.0 \text{ g indicator/day}}{2.0 \text{ g indicator/kg dry feces}}$$

$$= 5.0 \text{ kg dry feces/day}$$

III. Estimation of Total Forage Consumption

A. What is the forage consumption using the data in problems 1 & 2?

$$\text{Forage consumption} = \frac{\text{Total fecal excretion}}{1 - \text{digestibility}}$$

$$= \frac{5.0 \text{ kg dry feces}}{1.0 - 0.556}$$

$$= 11.2 \text{ kg dry forage consumed}$$