

Rumen *in vitro* Neutral Detergent Fiber Digestibility (NDFD) Guidelines

Eastern, Midwestern, and Western US Forages
Revised Nov. 2020; Jacob Karlen & John Goeser, PhD

Feed Type	Traditional* NDFD 30h			Traditional NDFD 48h		
	Goal**	Average	Min	Goal	Average	Min
Alfalfa Hay or Haylage	52.0	46.3	40.7	63.4	56.4	49.5
Mixed Forage	54.2	46.9	39.8	69.6	59.9	50.4
Corn Silage	62.0	56.9	51.9	71.3	65.5	59.7
Grass Hay or Silage	56.9	47.9	39.0	73.9	62.7	51.0
Sorghum, Sudan, or Small Grain Hay or Silage	56.5	47.5	39.9	73.5	62.5	53.5

Feed Type	Standardized* NDFD 24h			Standardized NDFD 30h			Standardized NDFD 48h		
	Goal	Average	Min	Goal	Average	Min	Goal	Average	Min
Alfalfa Hay or Haylage	39.1	32.4	26.1	44.1	37.1	30.3	58.7	51.8	45.1
Mixed Forage	37.2	29.9	22.8	44.6	36.4	27.4	62.8	54.2	45.6
Corn Silage	29.5	23.2	16.9	35.4	28.7	22.2	54.7	48.1	41.7
Grass Hay or Silage	36.5	27.8	19.2	44.7	34.3	23.7	65.2	54.4	43.4
Sorghum, Sudan, or Small Grain Hay or Silage	31.0	21.8	12.7	39.1	28.6	18.8	61.9	51.1	40.3

Feed Type	uNDF 240h, % of DM		
	Goal**	Average	Max
Alfalfa Hay or Haylage	12.8	16.7	20.5
Mixed Forage	12.3	17.2	22.1
Corn Silage	7.1	10	12.8
Grass Hay or Silage	11.3	18.6	26.4
Sorghum, Sudan, or Small Grain Hay or Silage	10.8	17.5	23.5

Note: *Goal and minimum correspond to the 85th and 15th percentiles, guidelines are based upon population statistics from 4 years of data with more than 450,000 samples representing the United States. *Rock River Laboratory implements both traditional (Tilley & Terry, 1963; Goering and Van Soest, 1970) and standardized (Goeser et al., 2009) *in vitro* rumen NDF digestion procedures.

References

- Goeser, JP, P.C. Hoffman, and D.K. Combs. 2009. J Dairy Sci. 92:3842-3848.
- Goering and Van Soest, 1970. Agric Handbook No. 379, pg 12.
- Tilly and Terry, 1963. J Br Grassl Soc 18, 104-111.