Column Headings (Listed in alphabetical order)

$/ton	This is the cost per ton on an as fed basis. You must enter the prices.
BW, (Body weight) lbs or kg	Select a body weight that best represents the animals you are working with.
BW (Body weight) change, lbs or kg	Body weight change is an estimated value that quantifies body weight gain or loss.
Ca, (Calcium)	Calcium requirements range from 0.20% to 0.82% of diet dry matter. Sheep can tolerate up to 2% calcium in the diet, but high levels of calcium can inhibit availability of other macro- and micro-minerals. The amount of Ca found in most forage is adequate. When adequate levels of dietary phosphorous (P) are present ruminants can tolerate a wide Ca:P ratio (up to 7:1). Typically calcium deficiencies are only found in feedlot lambs on high grain diets or where the Ca:P ratio is less than 2:1. Under these situations, wethers and ram lambs can develop urinary calculi. See information on phosphorus.
Cu, (Copper)	Recommended levels of copper range from 7 mg/kg to 11 mg/kg of diet dry matter (DM) when molybdenum (Mo) concentration is below 1 mg/kg of diet DM. Recommended levels range from 14 to 23 mg/kg of diet DM when Mo is concentration is greater than 3 mg/kg. Toxic levels are typically greater than 25 mg/kg diet DM, but can be less under certain situations. Although copper is a required nutrient for sheep, toxicity is typically more of a problem in the U.S. Copper requirements are dependent on dietary and genetic factors. Dietary amounts of copper that are adequate for some breeds are deficient for others; and toxic for others still. Sulfur and molybdenum limit absorption and increase dietary levels needed to meet requirement. On the other hand, molybdenum can help manage toxicity problems in areas of high copper availability.
CP, (crude protein) g or lbs/animal	Crude protein amount per animal per day.
DE, (Digestible energy), Mcal/animal	Digestible energy in Mega calories per animal

	per day.
DM, (Dry matter) %	This is the weight of the feed minus its water content. It is calculated as: (weight after drying/as fed weight) x 100.
DMI, (Dry matter intake) lbs or kg	Dry matter intake values are estimates only. Intake can vary greatly among similar types of animals and across time. Meeting the nutritional needs of any animal is a function of the quantity of food consumed and the quality (or nutrient content) of that food. Level of intake is as important as nutrient content in meeting animal nutrient requirements.
DMI, (Dry matter intake,) %BW	Dry matter intake divided by animal body weight times 100. All measures are in the same units (i.e., lbs DMI and lbs BW, or kg DMI and kg BW).
Fe, (Iron)	Recommended levels range from 30 mg/kg to 50 mg/kg of diet DM. Toxic levels are typically greater than 500 mg/kg of diet DM.
Mg, (Magnesium)	Recommended levels range from 0.12% to 0.18%. Toxicity is uncommon
Mn, (Manganese)	Recommended levels range from 20 mg/kg to 40 mg/kg of diet DM. Toxic levels are typically greater than 1000 mg/kg of diet DM.
ME, (Metabolizable energy), Mcal/animal	Metabolizable energy in Mega calories per animal per day.
Mo, (Molybdenum)	Recommended levels are approximately 0.5 mg/kg of diet DM. Toxic levels are typically greater than 10 mg/kg of diet DM. Under certain conditions low levels of Mo can lead to copper toxicity.
NEm, (Net energy for maintenance) Mcal/animal	Net energy for maintenance in Mega calories per animal per day.
NEg, (Net energy for gain) Mcal/animal	Net energy for gain (or production) in Mega calories per animal per day.
P, (Phosphorus)	Pasture and forage are commonly low in P. However, efficiency of P absorption increases during pregnancy and lactation, so ewes may get by on marginal levels of P. Keep in mind that P requirements more than triple from maintenance to peak lactation and high levels of aluminum and iron increase the need for P. When adequate levels of dietary P are present

	ruminants can tolerate a wide Ca:P ratio (up to 7:1). Sheep can adapt to some degree to deficiencies in P by increasing the efficiency of absorption. See information on calcium.
K, (Potassium)	Recommended levels range from 0.50% to 0.80%. Toxic levels are typically greater than 3% of diet DM
Se, (Selenium) Se	Recommended levels range from 0.1 mg/kg to 0.2 mg/kg of diet DM. Toxic levels are typically greater than 2 mg/kg of diet DM.
Na, (Sodium)	Recommended levels range from 0.09% to 0.18%. Toxic levels are typically greater than 3% of diet DM
S. (Sulfur)	Recommended levels range from 0.14% to 0.26%.
TDN (total digestible nutrients) , kg or lbs/animal	Total digestible nutrients amount per animal per day.
Vitamin E	1 mg of alpha tocopherol = 1.5 to 2 IU of vitamin E. Adding 2 IU of vitamin E per kg of ewe BW for 3 weeks prior to lambing has been shown to decrease lamb mortality, but results vary with severity of environmental stress.
Vitamin A	l mg of beta-carotene = approximately 400 to 600 IU vitamin A. Forages provide carotene in large amounts, but tend to be seasonal in availability. Alfalfa is very high in vitamin A. The liver can store large amounts of vitamin A. Typically vitamin A deficiency is only a problem after a long drought or when old hay is fed. Lambs on high grain diets in confinement may need supplemental vitamin A.
Zn, (Zinc)	Recommended levels range from 20 mg/kg to 33 mg/kg of diet DM. Toxic levels are typically greater than 750 mg/kg of diet DM. NRC recommended levels for zinc are probably low especially under conditions of stress and immune challenge. Toxic levels are uncommon.