

GRAZIERS MATH WORKSHEET

STEP 1: Clip all vertical forage and collect armor.

Weight _____ grams (g)	Weight _____ grams (g)
Weight _____ grams (g)	Weight _____ grams (g)
Weight _____ grams (g)	Weight _____ grams (g)
Weight _____ grams (g)	Weight _____ grams (g)
Weight _____ grams (g)	Weight _____ grams (g)
Avg weight _____ grams (g)	

STEP 2: Calculate Forage Availability

Average weight _____ grams (g) X 100 (small 0.96 ft²) or X 50 (large 1.92 ft²) =

Total production _____ lbs/ac X Dry Matter _____ % = **Available Forage** c
(Air dry your samples or from chart below)

PERCENTAGE OF AIR-DRY MATTER IN HARVESTED PLANT MATERIAL AT VARIOUS STAGES OF GROWTH

(Exhibit 4-2 NRPH, 9/97)

GRASSES	Vegetative Stage; growth start to boot stage	Head Out; boot stage to flowering	Hard Seed: seed ripe, leaf tips dry	Mature: leaves dry, stems partly dry	Plants Dry: summer dormancy or dormancy
Cool Season					
Wheatgrasses, Needlegrasses, Bluegrasses, Perennial bromes, Prairie junegrass	35%	45%	60%	85%	95%
Warm Season					
Tall Grasses Big bluestem, Indiangrass, Switchgrass	30%	45%	60%	85%	95%
Mid Grasses Sideoats grama, Little bluestem	40%	55%	65%	90%	95%
Short Grasses Blue grama, Buffalograss, three- awn	45%	60%	80%	90%	95%

Forbs	Vegetative Stage; initial growth to flower	Flowering Stage to Seed Maturity;	Seed Dissemination; seed ripe, leaf tips dry	Late Vegetative; seed drop, leaves dry, stems drying	Plants Dead or Dormant;
Succulent					
Onion, Cow parsnip, Lilies, Violets, Dandelion	15%	35%	60%	90%	100%
Leafy					
Lupine, Purple coneflower, Globemallow, Vetches, Sageworts	20%	40%	60%	90%	100%
Fibrous Leaves or Mat					
Phlox, Pussytoes	30%	50%	75%	90%	100%

STEP 3: Calculate USABLE FORAGE

Total Forage Available _____ lbs/ac - Amount Leaving _____ lbs/ac = Useable forage lbs/ac
(you decide)

STEP 4: Calculate Daily Forage Demand per Animal

Wt. of Animal _____ lbs X % 2.6%^A Body Weight = Forage Demand Per Animal _____ lbs/day
Lbs/day Needed Per Animal _____ X Number of Animals _____ = Total Forage Needed Lbs/day

^A **Note:** Forage consumption by percent body weight is variable, dependent upon animal species and class as well as forage present. Evaluate on-site conditions and actual consumption rates to match your grazing animals and resource base.

STEP 5: Calculate AREA NEEDED

Total Forage Needed _____ lbs/day ÷ Usable Forage _____ lbs/ac = Acres needed/day

Acres needed/day _____ X 43,560 = Square Feet needed _____

Paddock for 24 hour
= _____ ft x _____ ft

OPTIONS: Calculating CARRYING CAPACITY/HERD SIZE/STOCK DENSITY for a pasture or ranch

Acres needed/day _____ X _____ desired days = Acres needed
(you decide)

OR
Total Acres in Pasture _____ - Ungrazeable Acres _____ = Acres Available (actual)

Acres Available _____ X Useable forage _____ lbs/ac = Total Useable Forage lbs

Total Useable Forage _____ ÷ Lbs/day Needed Per Animal _____ ÷ _____ desired days =
(you decide) **Total animals allowed**

OR to calculate how many days a pasture can hold a herd

Total Useable Forage _____ ÷ Total Forage needed per animal/day _____ =
(from step 4, lbs needed per animal) **Grazing Days in Pasture**