



CALCULATING STOCKING RATES

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THE ART AND SCIENCE OF GRASS MANAGEMENT

FORAGE GROWTH WILL DICTATE LIVESTOCK MANAGEMENT

ROTATION = REST = REGROWTH

DEVELOPMENT OF A PRODUCTIVE, STABLE & SUSTAINABLE GRAZING SYSTEM

COWPOKES®

By Ace Reid



**"Look there, 40 years building' up a herd that can
live on what I feed 'em!"**

ONLY 3 VARIABLES

- ACRES: # of Acres and/or # of Forage Production/Acre
- LIVESTOCK: # of Animals and/or Weight of Animals
- TIME: Grazing Season (Months) – Grazing Period (Days)

GRAZING SEASON FORAGE SUPPLY

- Estimating Forage Production Training – Forage Clipping Procedure.
- Remember to subtract the 1000# Residual for plant regrowth and soil conservation when clipping to the ground.
- OR
- Clip all forage “above” the 4” Residual for plant regrowth and soil conservation.
- ~~5000 #/Ac (Page 40, Grazing Systems Planning Guide)~~

ESTIMATING FORAGE PRODUCTION TRAINING

- How many pounds of dry matter are there per acre?

- Total Dry Weight - Bag Weight = Net Dry Weight

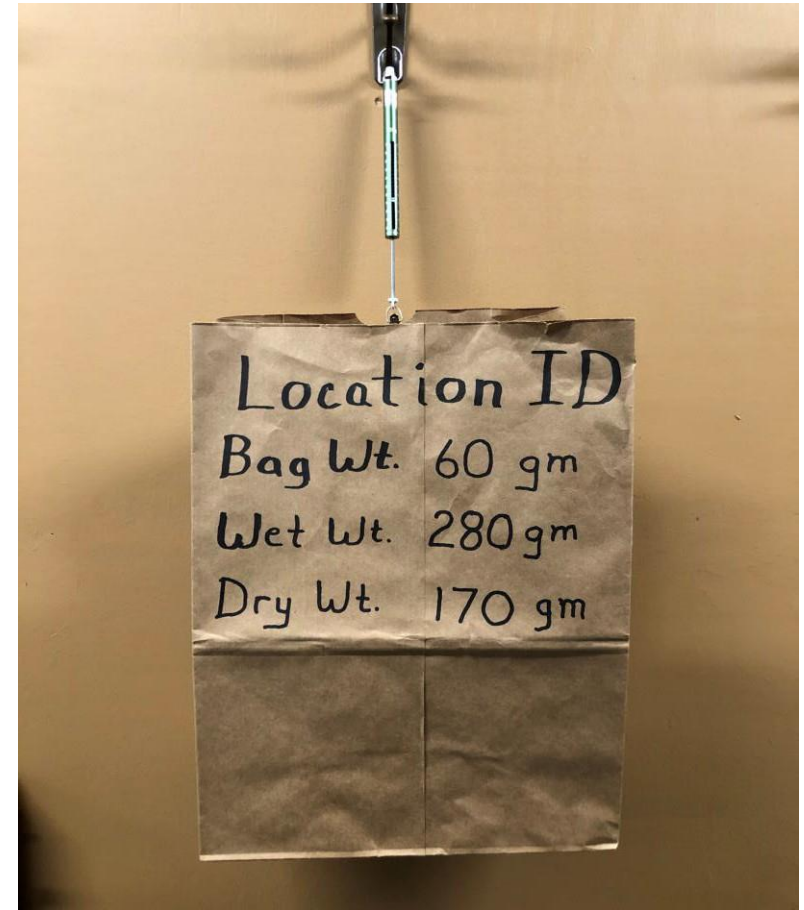
$$170 \text{ gm} - 60 \text{ gm} = 110 \text{ gm}$$

- Net Dry Weight x Conversion Factor (50 or 100) =
Total Pounds/Acre

$$110 \text{ gm} \times 50 = 5,500$$

$$5,500 \text{ Total \# DM/Acre} - 1,000\# =$$

$$4,500\#/Acre \text{ Useable Forage}$$



GRAZING SEASON

- GRAZING SEASON for most perennial grass systems is from May through October or November (5 to 6 Months).
- GRAZING SEASON is not the same as the GROWING SEASON (May 1 to October 1).
- GRAZING SEASON can be extended by utilizing Annual Forage Crops, Cover Crops and/or gleaning of crop residue.
- Most livestock operations will feed stored forage for a minimum of 4 months (January – April).

GRAZING PERIOD FORAGE SUPPLY

- Estimating Forage Production Training – Forage Clipping Procedure.
- Remember to subtract the 1000# Residual for plant regrowth and soil conservation when clipping to the ground.
- OR
- Clip all forage “above” the 4” Residual for plant regrowth and soil conservation.
- ~~250 #/Ac Inch (Page 15, Grazing Systems Planning Guide)~~

ESTIMATING FORAGE PRODUCTION TRAINING

- How many pounds of dry matter are there per acre?
- Utilize same procedure as Grazing “Season”
- You will have less #/Acre for the Grazing “Period”
 - Total Dry Weight - Bag Weight = Net Dry Weight
 - Net Dry Weight x Conversion Factor (50 or 100) = Total Pounds/Acre

GRAZING PERIOD

- GRAZING PERIOD is the amount of time livestock are given to graze an individual paddock or pasture.
- GRAZING PERIOD for Pastureland can range from Hours to Days.
- GRAZING PERIOD for Rangeland will usually range from Days to Weeks.

- GRAZING PERIOD in combination with NUMBER OF PADDOCKS should figure out to give the forage an average of 30 DAYS OF REST before being grazed again.
- REST PERIOD is more important than the grazing period. REST PERIOD can range from 2 weeks in the spring to 6 weeks in the fall.
- OPTIMUM GRAZING PERIOD is the amount of time that livestock can be in an area before they start regrazing plants that were just grazed.
- Cattle = 5 – 7 Days
- Sheep = 2 -3 Days

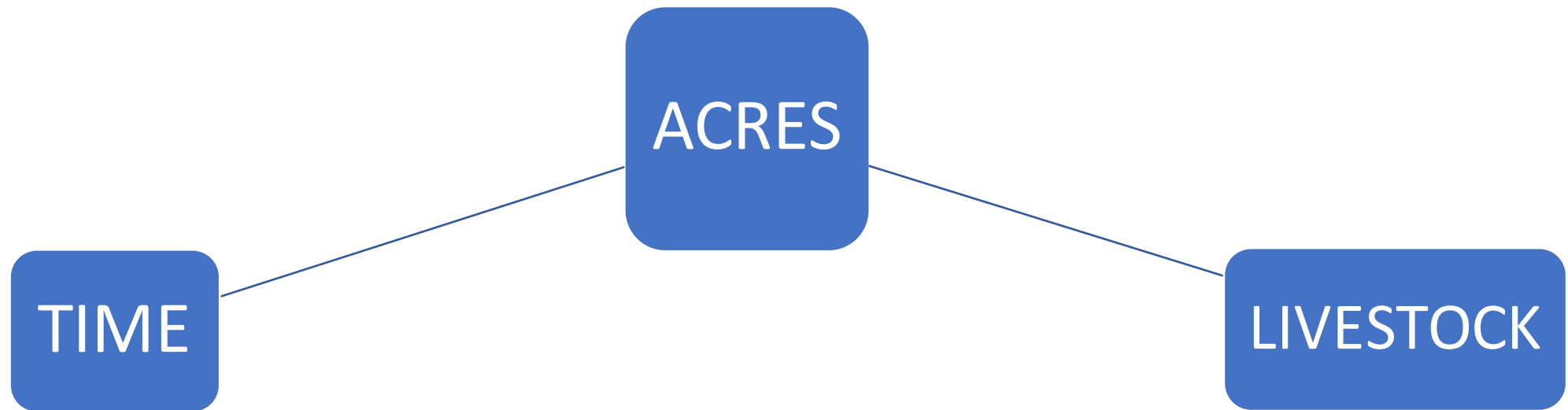
FORAGE DEMAND

- Herbivores will *consume* 2-4% of their body weight depending on species, age class, production phase or environment.
- On average 0.5% of forage will be *lost* to trampling, defecation, decomposition, wildlife and insects.
- A 1.0% *buffer* is used to account for unforeseen environmental or managerial changes.
- $2.5\% + 0.5\% + 1.0\% = \mathbf{4.0\%}$
- $4.0\% \times \underline{\quad} \text{lb Animal} \times \underline{\quad} \text{\# Of Animals} = \underline{\quad} \text{lbs/Day Of Air Dry Forage For The Herd}$

LIVESTOCK WEIGHT

- Ask the producer what his livestock weigh. Ask what his last cull animals weighed when he sold them.
- Misjudging animal weight will throw the calculations off just as much as misjudging forage production.
- When in doubt, estimate high. Better to be long on forage at the end of the grazing season than long on livestock.

ONLY 3 VARIABLES





CALCULATING # OF ACRES

GIVEN

GRAZING SEASON LENGTH & # OF ANIMALS

- 5 Months (Producer Information)
- 35 Cow/Calf Pairs (Producer Information)
- 1300# Cow (Producer Information)
- 450# Calf (Producer Information)
- 5000 #/Ac (Estimating Forage Production Training)

- $1300\# \text{ Cow} + 450\# \text{ Calf} = 1750\# \times 35 \text{ Pairs} = 61,250\# \text{ Total Herd Weight}$
- $61,250\# \times 4.0\% = 2450\#/\text{Day} \times 30 \text{ Days}/\text{Month} \times 5 \text{ Months} = 367,500\# \text{ Of Air Dry Forage Required}$
- $5000\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 4000\#/\text{AC}$

How many acres are needed for this herd for the grazing season?

- $1300\# \text{ Cow} + 450\# \text{ Calf} = 1750\# \times 35 \text{ Pairs} = 61,250\# \text{ Total Herd Weight}$
- $61,250\# \times 4.0\% = 2450\#/\text{Day} \times 30 \text{ Days}/\text{Month} \times 5 \text{ Months} = 367,500\# \text{ Of Air Dry Forage Required}$
- $5000\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 4000\#/\text{AC}$
- $367,500\# \text{ Forage Required} / 4000\#/\text{AC} = 91.8 \text{ ac}$

91.8 AC For 35-1750# Cow/Calf Pairs For A 5 Month Grazing Season

GIVEN

GRAZING PERIOD LENGTH & # OF ANIMALS

- 3 Days (Optimum Recommended To Prevent Regrazing Of Plant Regrowth)
- 35 Cow/Calf Pairs (Producer Information)
- 1300# Cow (Producer Information)
- 450# Calf (Producer Information)
- 1600 #/Ac (Estimating Forage Production Training)

- $1300\# \text{ Cow} + 450\# \text{ Calf} = 1750\# \times 35 \text{ Pairs} = 61,250\# \text{ Total Herd Weight}$
- $61,250\# \times 4.0\% = 2450\#/\text{Day} \times 3 \text{ Days} = 7350\# \text{ Of Air Dry Forage Required}$
- $1600\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 600\#/\text{Ac}$

How many acres are needed for this herd to graze for 3 days?

- $1300\# \text{ Cow} + 450\# \text{ Calf} = 1750\# \times 35 \text{ Pairs} = 61,250\# \text{ Total Herd Weight}$
- $61,250\# \times 4.0\% = 2450\#/\text{Day} \times 3 \text{ Days} = 7350\# \text{ Of Air Dry Forage Required}$
- $1600\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 600\#/\text{Ac}$
- $7350\# \text{ Forage Required} / 600\#/\text{AC} = 12.25 \text{ ac}$

12.25 AC For 35-1750# Cow/Calf Pairs For A 3 Day Grazing Period



CALCULATING # OF ANIMALS

GIVEN

TOTAL ACRES & GRAZING SEASON LENGTH

- 80.0 Acres (Producer Information)
- 6 Months (Producer Information)
- 5000 #/Ac (Estimating Forage Production Training)

- $5000\#/Ac \text{ Air Dry Forage} - 1000\#/Ac \text{ (Residual Forage)} = 4000\#/AC$
- $4000\#/Ac \times 80.0Ac = 320,000\# \text{ Total Air Dry Forage Available For The Grazing Season}$
- $1250\# \text{ Cow (Average)} + 450\# \text{ Calf (Average)} = 1700\#$
- $1700\# \times 4.0\% = 68\#/Day \times 30 \text{ Days/Month} \times 6 \text{ Months} = 12,240\# \text{ Of Air Dry Forage Required}$

How many cow/calf pairs will this system provide forage for during the grazing season?

- $5000\#/Ac \text{ Air Dry Forage} - 1000\#/Ac \text{ (Residual Forage)} = 4000\#/AC$
- $4000\#/Ac \times 80.0Ac = 320,000\#$ Total Air Dry Forage Available For The Grazing Season
- $1250\# \text{ Cow (Average)} + 450\# \text{ Calf (Average)} = 1700\#$
- $1700\# \times 4.0\% = 68\#/Day \times 30 \text{ Days/Month} \times 6 \text{ Months} = 12,240\#$ Of Air Dry Forage Required
- $320,000\# \text{ Forage Available} / 12,240\# \text{ Forage Required} = 26$

26-1700# Cow/Calf Pairs For A 6 Month Grazing Season

GIVEN

PADDOCK ACRES & GRAZING PERIOD LENGTH

- 8.0 Acres (Producer Information)
- 7 Days (Maximum Recommended To Prevent Regrazing Of Plant Regrowth)
- 2250 #/Ac (Estimating Forage Production Training)

- $2250\#/Ac \text{ Air Dry Forage} - 1000\#/Ac \text{ (Residual Forage)} = 1250\#/Ac$
- $1250\#/Ac \times 8.0Ac = 10,000\# \text{ Total Air Dry Forage Available}$
- $1250\# \text{ Cow (Average)} + 450\# \text{ Calf (Average)} = 1700\#$
- $1700\# \times 4.0\% = 68\#/Day \times 7 \text{ Days} = 476\# \text{ Of Air Dry Forage Required}$

How many cow/calf pairs will this system provide forage for during the 7 day grazing period?

- $2250\#/Ac \text{ Air Dry Forage} - 1000\#/Ac \text{ (Residual Forage)} = 1250\#/Ac$
- $1250\#/Ac \times 8.0Ac = 10,000\# \text{ Total Air Dry Forage Available}$
- $1250\# \text{ Cow (Average)} + 450\# \text{ Calf (Average)} = 1700\#$
- $1700\# \times 4.0\% = 68\#/Day \times 7 \text{ Days} = 476\# \text{ Of Air Dry Forage Required}$
- $10,000\# \text{ Forage Available} / 476\# \text{ Forage Required} = 21$

21-1700# Cow/Calf Pairs For A 7 Day Grazing Period



CALCULATING GRAZING TIME

GRAZING SEASON LENGTH

GIVEN: # OF ANIMALS & TOTAL ACRES

- 65.0 Acres (Producer Information)
- 35 Cow/Calf Pairs (Producer Information)
- 1250# Cow (Producer Information)
- 450# Calf (Producer Information)
- 4500 #/Ac (Estimating Forage Production Training)

- $1250\# \text{ Cow} + 450\# \text{ Calf} = 1700\# \times 35 \text{ Pairs} = 59,500\# \times 4.0\% = 2380\#/\text{Day}$
Of Air Dry Forage Required
- $4500\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 3500\#/\text{AC} \times 65.0$
 $\text{Ac} = 227,500\# \text{ Of Air Dry Forage}$

What is the grazing season based on the forage available for this herd?

- $1250\# \text{ Cow} + 450\# \text{ Calf} = 1700\# \times 35 \text{ Pairs} = 59,500\# \times 4.0\% = 2380\#/\text{Day}$
Of Air Dry Forage Required
- $4500\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 3500\#/\text{AC} \times 65.0$
Ac = $227,500\#$ Of Air Dry Forage
- $227,500\# \text{ Forage Available} / 2380\#/\text{Day Foage Required} = 95.5$

95.5 Days Of Grazing Available For 35-1700# Cow/Calf Pairs

GRAZING PERIOD LENGTH

GIVEN: # OF ANIMALS & PADDOCK ACRES

- 6.5 Acres (Producer Information)
- 35 Cow/Calf Pairs (Producer Information)
- 1250# Cow (Producer Information)
- 450# Calf (Producer Information)
- 2250 #/Ac (Estimating Forage Production Training)

- $1250\# \text{ Cow} + 450\# \text{ Calf} = 1700\# \times 35 \text{ Pairs} = 59,500\# \times 4.0\% = 2380\#/\text{Day Of Air Dry Forage Required}$
- $2250\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 1250\#/\text{Ac}$
- $1250\#/\text{Ac} \times 6.5\text{Ac} = 8125\# \text{ Total Air Dry Forage Available}$

What is the grazing period based on the forage available for this herd?

- $1250\# \text{ Cow} + 450\# \text{ Calf} = 1700\# \times 35 \text{ Pairs} = 59,500\# \times 4.0\% = 2380\#/\text{Day Of Air Dry Forage Required}$
- $2250\#/\text{Ac Air Dry Forage} - 1000\#/\text{Ac (Residual Forage)} = 1250\#/\text{Ac}$
- $1250\#/\text{Ac} \times 6.5\text{Ac} = 8125\# \text{ Total Air Dry Forage Available}$
- $8125\# \text{ Forage Available} / 2380\#/\text{Day Forage Required} = 3.4$

3.4 Days Of Grazing Available For 35-1700# Cow/Calf Pairs

COW POKES®

By Ace Reid

<http://www.cowpokes.com>



"If them ole boys would over graze their place like us, they wouldn't have to be fightin' grass fires all the time!"

