



USDA Yearbook of Agriculture - 1922

“.....the cheapest of all feed is pasture because it furnishes a balanced ration at low cost and the cow does her own harvesting...

.....In comparatively few cases is the fullest possible use made of pasture.”



Continuous vs Rotational Grazing

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Grazing Management

Continuous Grazing

- Diet selection
 - Improved performance
 - Increased utilization of desired areas, plants, plant parts
 - Low grazing uniformity
 - Same pasture can be both “overgrazed” and “underutilized”

Rotational Grazing

- Reduced diet selection
 - Lower or variable diet quality
 - Desired plants are utilized first but get a break
 - Increased grazing distribution
 - Sacrifice areas around water sources
 - Lower performance?



Improved Grazing and Production Management

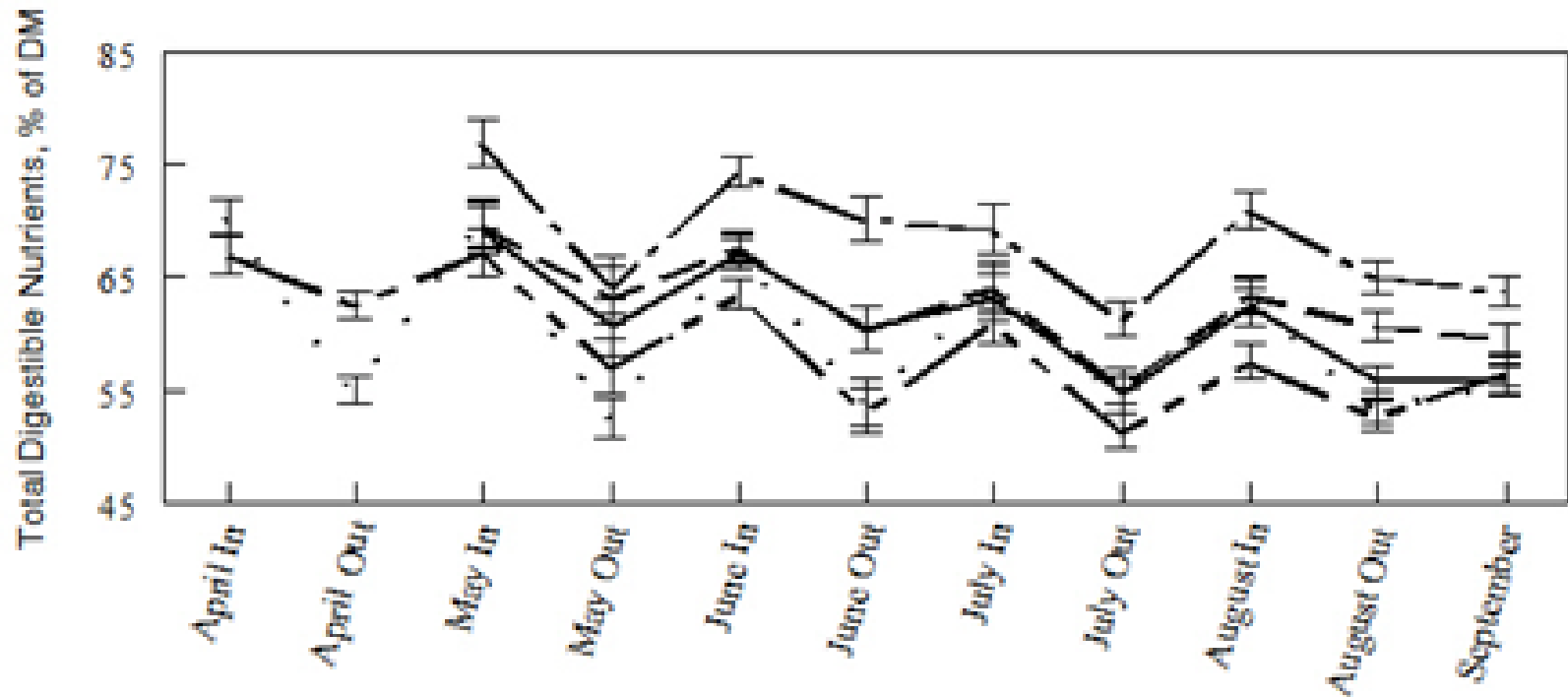
A photograph of a herd of brown cows grazing in a lush green field. A white fence line runs across the middle ground, and rolling hills are visible in the background under a clear sky.

- “Continuous grazing leads to poor utilization of forage, fertilizer, and land.”
 - Estimated utilization of forage is 30 - 35%.
- “Rotational or controlled grazing improves utilization of forage.”
 - Improves efficiency of fertilizer and land.
 - Estimated utilization of forage is 50 - 75%.

Paddocks and Grazing Efficiency

Paddocks	Grazing-D	Rest	Utilization
Continuous	-	0	30%
4	7	21	40%
8	3	21	50%
12	2	22	65%
24+	1	23	75%

Diet Selection



Water Resources



Requirements for Forage Growth

- To produce feed for livestock, forages need:
 - Sunlight, water, nutrients, and time
- Forage top growth is a reflection of root growth
- Short grazing heights create drought stress
- Overgrazed plants respond slowly and capture little runoff



Root Depth and Grazing Frequency



- Root development mirrors top growth.
- With repeated grazing roots get more shallow.
- Decrease ability to reach water.
 - Reduce competitiveness with deeper rooted weeds.
- Reduced surface residue
 - Increases soil surface temperature
 - Impedes water infiltration
 - Leads to stand losses during drought

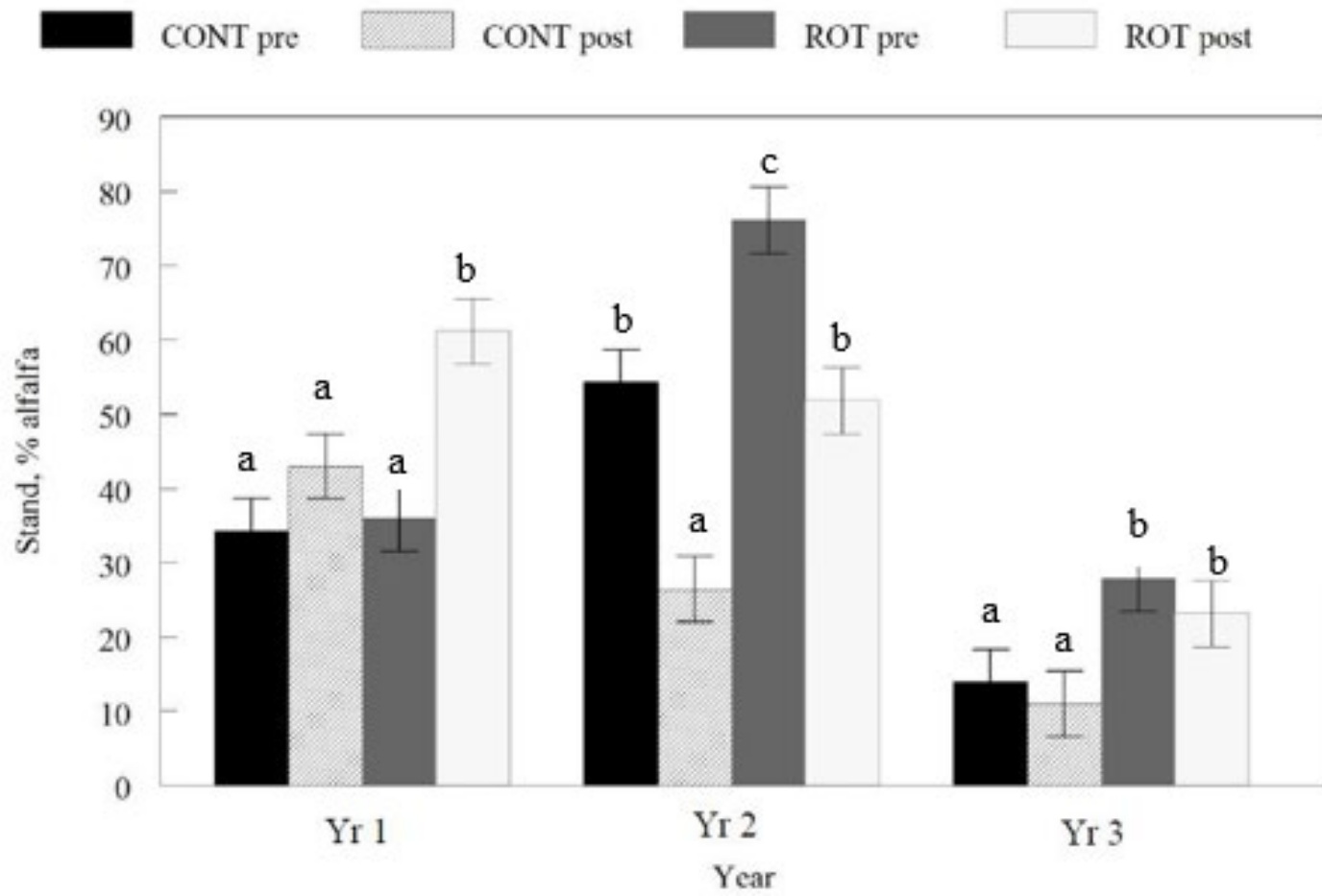
Picture courtesy D. Hancock, UGA



What are implications of stand losses?



Alfalfa Stand Counts for Pre and Post Grazing



Rotational Grazing Research

- Research plan developed to answer...
 - How BMP's can be fit together to reach year-round forage grazing goal.
 - Rotational grazing
 - Stockpiling bermudagrass
 - Interseeding cool-season annual grasses
 - How cow stocking rate will impact the 300-day grazing goal
 - What will be the effects on economics of cow-calf enterprise?



Protocol

- continuous grazing at moderate stocking rate
 - 2 acres per cow
- pastures were split into 6-paddock rotation
 - Moderate stocking rate vs High stocking rate (1 acre per cow)
 - Stacked management
 - August – stockpiled bermudagrass
 - November – interseeded cool season annuals
 - June – All pastures fertilized for bermudagrass production.



Protocol

	Continuous	Moderate SR Rotation	High SR Rotation
Cows per pasture	6	6	12
Stocking Rate, AC/cow	2	2	1
Fertilizer for summer	Yes	No	No
Rotational grazing	No	Yes	Yes
Stockpiled bermuda	No	Yes	Yes
Interseeded CSA grasses	No	Yes	Yes

Cow Performance

Item	Continuous	MR	HR
Cow BW, lbs			
November	1195	1221	1145*
May	1125	1178	1155
July	1198	1220	1212
October	1203	1226	1152*
Cow BCS, 1-9 scale			
November	6.1	6.1	5.9
Calving	5.9	6.0	5.9
May	5.9	6.0	5.9
July	5.9	6.1	6.1
October	6.0	6.0	5.9
Pregnancy Rate	90.2%		

Calf Performance

Item	Continuous	MR	HR
Calf BW, lbs			
Birth	92	90	89
May	245	234	235
July	385	372	368
Weaning	523*	502	485
WW/acre	262	251	485



Hay Feeding

Item	Continuous	MR	HR
Start	November 11	February 1	September 7 March 4
End	February 26	February 14	October 14 March 13
Days	106	14	37
Bales	25	5	15
Pounds/cow	3395	642	980
Cost per cow	\$125	\$24	\$36



Hay Harvest

Item	Continuous	MR	HR
Acres	-	4	2
Bales	-	17	5
Bale/ac	-	4.3	2.5
Value, \$ per pasture	-	600	176
Cost, \$ per pasture	-	343	100
Net, \$ per pasture	-	257	76

Competition, Time, & Rest

- Maintain stocking rates with low to moderate grazing intensity.
 - Leave surface residue to increase water infiltration when it does rain.
 - Improve root health...speed recovery from grazing
- Weed control
 - Reduce competition
- Fertilize appropriately
 - Improved water use efficiency of forage plants













Southern Agriculturist - 1918

“.....The farmer who has plenty of grassis the one who will allow it to get a start in the spring and early summer. The stock work on the reserves thru’ the hot weather. Then in the fall, with cooler weather andrains, pastures again grow vigorously and, if not overstocked, they get another reserve that makes some pasture all winter.....

.....Some farmerskeep their stock on pasture all year except when snow is on the ground. This is practiced through the states of the central South.....”



Questions?

