



# Forage-Budgeting Guidelines

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Livestock producers are generally well aware of how much money is required to operate their business from year to year. The cost of incidentals necessary for running the operation have been carefully considered, and money has been allocated for each item. Typically, there may even be a small surplus to handle unforeseen circumstances. This process of allocating money is known as budgeting.

However, the same close attention that is given to the allocation of money should also be given to the allocation of forage resources. The development of a forage-budgeting plan requires a careful and reasonable estimate of both the production capability of the pasture and the forage requirements of the grazing livestock. The plan should also identify any seasonal deficiency or excess in forage availability.

The forage-budgeting process is built around a good recordkeeping system and begins with an accurate estimate of forage production. When an estimate of total forage production is related to the forage demand by grazing livestock, producers can make stocking rate decisions that more accurately reflect the production potential of their pastures.

Without a forage-budgeting plan, livestock producers are more likely to overstock or understock their pastures. Overstocking results in a decrease in desirable forage species, an increase in weed species, reduced animal performance, and ultimately, a reduction in the carrying capacity of the ranch. Understocking results in wasted forage and a reduced profit potential for the operation.

This fact sheet is designed to simplify forage budgeting. Included are estimates of (a) animal dry matter consumption (Table 1), and forage yields (Table 2), (b) a worksheet for estimating forage requirements (Table 3), and (c) forage growing and potential grazing seasons (Table 4).

Be aware that this forage-budgeting guideline does have limitations. It does not consider the variation in production capability between different pastures, the management level of the producer, the harvest efficiency of the livestock, nor the differences in grazing preferences between livestock species. Your OSU Extension Agriculture Educator and the resource people who they rely on can help you make reasonable site-specific estimates and provide other assistance as needed.

**Table 1. Estimated daily forage dry matter (DM) requirement.**

Animal type	DM requirement (lbs)
<b>Cattle</b>	
Calves	
300 lbs.....	9
400 lbs.....	12
500 lbs.....	15
600 lbs.....	18
Cows.....	26
Bulls.....	32
<b>Horses</b> .....	32
<b>Sheep</b> .....	5
<b>Goats</b> .....	4
<b>White-tailed deer</b> .....	4

**Table 2. Estimated annual forage dry matter production (tons/acre).\***

Forage Species	Nitrogen Rate (lbs. per acre)				
	0	50	100	150	200
Bermudagrass	1.0	1.8	2.8	3.4	3.9
Old World bluestem	1.0	1.9	2.7	3.3	3.7
Sorghum/sudangrass	1.5	2.5	3.5	4.3	5.0
Tall fescue	0.8	1.7	2.4	3.0	3.5
Weeping lovegrass	1.0	2.0	2.9	3.6	4.0
<b>Small grains/ryegrass</b>					
Clean-tilled	1.0	1.5	2.1	2.5	3.0
Sod-seeded	0.8	1.2	2.0		
<b>Legumes</b>					
Arrowleaf clover	2-3				
Hairy vetch	1-1.5				
Korean lespedeza	1-1.5				
Red clover	2-3				
Rose clover	2-2.5				
Subterranean clover	1.5-2				
White (ladino) clover	2-2.5				

\*Production may be limited by lack of precipitation.

**Table 3. Worksheet for estimating livestock forage requirement and forage production potential.**

Time covered by the forage budget plan: From \_\_\_\_\_ to \_\_\_\_\_.

**I. LIVESTOCK FORAGE REQUIREMENT**

Livestock description	Months	Total days	Dry matter consumption:		lbs per animal	Number of animals	Total lbs of forage required/2000	Tons of forage required
			X	(lbs per day)				
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
_____	JFMAMJJASOND	_____	X	_____	_____	_____	_____ / 2000 = _____	_____
<b>TOTAL FORAGE REQUIREMENT</b>							_____ / 2000 = _____	_____

II. FORAGE PRODUCTION

Pasture identification	Forage type	Pasture size (acres)	X	Usable production per acre (lbs/acre)	=	Projected forage production (lbs/acre)	Fertilizer requirement per acre			Seed required per acre	NOTES: Examples: Time to fertilize or remove livestock, cost projections, etc.
							N	P	K		
1. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
2. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
3. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
4. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
5. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
6. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
7. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
8. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
9. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
10. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
11. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
12. _____	_____	_____	X	_____	=	_____	_____	_____	_____	_____	_____
TOTAL FORAGE PRODUCTION						=					

TOTAL FORAGE REQUIREMENT \_\_\_\_\_  
 - TOTAL FORAGE PRODUCTION \_\_\_\_\_  
 = FORAGE SURPLUS OR DEFICIENCY \_\_\_\_\_

For assistance in designing your grazing plan, see your nearest OSU Cooperative Extension Office.

**Table 4.**

FORAGE TYPE	Potential Grazing ■ Growing Season □ Planting Month •											
	J	F	M	A	M	J	J	A	S	O	N	D
<b>Warm-Season Grasses</b>												
1. Bermudagrass			•	•	■	■	■	■	■	■	■	■
2. Old World Bluestem	■	■		•	■	■	■	■	■	■	■	■
3. Lovegrass			•	■	■	■	■	■	■	■	■	■
4. Sorghum/Sudangrass Pearl Millet (Summer Harvested)				•	■	■	■	■	■	■	■	■
5. Forage Sorghum (Winter Grazed)	■	■					•	■	■	■	■	■
<b>Cool-Season Grasses</b>												
6. Fescue, Wheatgrass, Orchardgrass	■	■	■	■	■	■	■	■	■	■	■	■
7. Clean-Tilled Small Grains	■	■	■	■	■	■	■	■	■	■	■	■
8. Sodseeded Small Grains			■	■	■	■	■	■	■	■	■	■
9. Ryegrass			■	■	■	■	■	■	■	■	■	■
<b>Legumes</b>												
10. Red or White Clover	■	•	■	■	■	■	■	■	■	■	■	■
11. Arrowleaf Clover			■	■	■	■	■	■	■	■	■	■
12. Hairy Vetch			■	■	■	■	■	■	■	■	■	■
13. Subterranean Clover			■	■	■	■	■	■	■	■	■	■
14. Korean Lespedeza			•	■	■	■	■	■	■	■	■	■
15. Rose Clover			■	■	■	■	■	■	■	■	■	■

1. Dry standing bermudagrass should be used by January 1.
2. Suited for well-drained soils; hard to establish on sandy soils.
3. Requires strict rotational grazing management; suited to sandy soil.
4. Potential nitrate accumulators; harvest in the "boot" growth stage.
5. Used to winter cows from hard freeze until March 1.
6. Adapted to eastern 1/3 of Oklahoma.
7. Allow 8 to 12 inches of forage to accumulate before grazing.
8. Not dependable for fall grazing.
9. Use with small grains to extend spring grazing.
10. Cool-season perennial; potential summer grazing with adequate rainfall.
11. Cool-season annual; late maturing, high percentage of hard seed.
12. Cool-season annual; adapted to much of Oklahoma.
13. Cool-season annual; dependable reseeder even under heavy grazing.
14. Summer annual; high quality but limited production.
15. Cool-season annual; adapted to drier sites.

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