

Pasture Forage Needs Calculator

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Step 1. Daily forage needs of the grazing heifers

500 heifers x 850 lbs. per head = 425,000 lbs. x 2.50% intake = 10,625 lbs DM needed

Step 2. Determine forage required, adjusted for utilization rate (see Pasture Utilization table)

10,625 lbs DMI / 70% utilization rate = 15,179 lbs. forage DM needed daily

Step 3. Determine lbs. dry matter per acre (see Forage Availability table)

300 lbs DM per inch per acre x 12 inches = 3,600 lbs. DM per acre

Codes
x = multiply
/ = divide
+ = add

Step 4. Determine acres needed daily

15,179 lbs. DM needed daily / 3,600 lbs. DM per acre = 4.22 acres or
183,661 square feet

Step 5. Determine paddock size

4.22 acres per day x 4 days on paddock = 16.87 acres per paddock

Step 6. Determine number of paddocks

30 day rest period+ 4 days on paddock / 4 days on paddock= 8.5 paddocks

Step 7. Total acres required for a specific number of grazing animals

8.5 paddocks x 16.87 acres per paddock= 143 acres needed

Pasture Utilization and Availability Tables

Pasture Utilization Table	Utilization Rate	Utilization Rate
	(full season)	(spring growth)
Continuous grazing (1 paddock)	30-35%	30-35%
>14 days (2-4 paddocks)	35-40%	40-50%
6-8 days (3-7 paddocks)	45-55%	50-55%
2-3 days (6-15 paddocks)	55-60%	55-60%
Daily (25-35 paddocks)	60-70%	55-60%
Twice daily (45-60 paddocks)	70-75%	55-60%

Notes: For 4 paddocks or fewer, utilization rates can be higher in spring than during the rest of the season because of rapid forage growth. For 5 or more paddocks, utilization should be lower in spring than during the rest of the season to keep the rapidly growing forage from getting too mature.

During rapid growth: 20 days may provide adequate rest

During summer growth: 40+ days may be needed to provide rest

Season long rest interval: 30-35 days often used for planning

Forage Availability Table	Fair	Good	Excellent
Smooth brome + legumes	150-250	250-350	350-450
Orchardgrass + alfalfa	100-200	200-300	300-400
Mixed pasture	150-250	250-350	350-450
Bluegrass + white clover	150-250	300-400	450-550
Tall fescue + legumes	200-300	300-400	400-500
Tall fescue + nitrogen	250-350	350-450	450-550

Source: Pasture Management Guide: Iowa State University Extension, 1998. To order call (515) 294-5247

