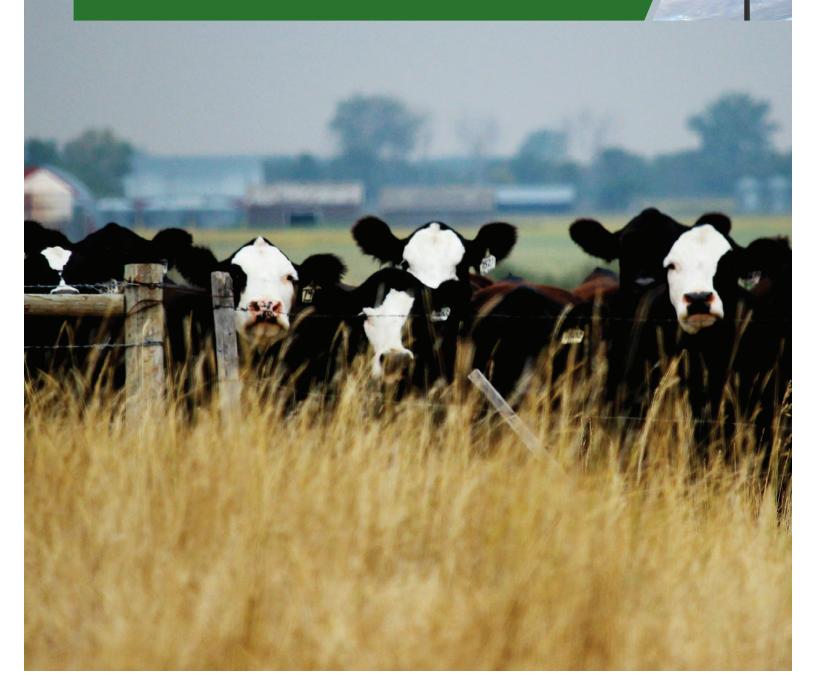
2024 Cost of Production Pasture







Guidelines For Estimating

Improved & Unimproved Pasture Production Costs - 2024

Date: April, 2024

This guide is designed to provide planning information and a format for calculating the costs of improved and unimproved (marginal) grass pasture for the purpose of grazing livestock in Manitoba. General Department recommendations are assumed in using fertilizers and chemical inputs. These figures provide an economic evaluation of pastures and estimated cost per head per day. Costs include operating, investment and depreciation, but do not include management costs, nor do they necessarily represent the average cost of production in Manitoba.

Stocking rates are a critical aspect of any grazing system. This budget takes into account options to consider when calculating the stocking rate or Animal Unit Months (AUM) for your soil type and climatic conditions.

These budgets may be adjusted by putting in your own figures. As a producer, you are encouraged to calculate your own costs of production for your pasture and grazing system. On each farm, costs and yields differ due to soil type, climate and agronomic practices.

This tool is available as an Excel worksheet at:



<u>The Farm Machinery Cost of Production Guide</u> determine machinery costs.

is also available to help

Contact Us

For more information, contact a Farm Management Specialist.

- manitoba.ca/agriculture
- mbfarmbusiness@gov.mb.ca
- 1-844-769-6224

Note: This budget is only a guide and is not intended as an in depth study of the cost of production of this industry. Interpretation and use of this information is the responsibility of the user. If you need help with a budget, contact a Farm Management Specialist.

Pasture Production Cost Summary - 2024

 Improved Pasture
 Unimproved Pasture

 160 acres
 160 acres

 94 head (1.7 ac/hd) @ 1350lbs
 32 head (5 ac/hd) @ 1350lbs

 135 Days on Pasture
 135 Days on Pasture

 Total Animal Unit Months (AUM's)
 529
 180

 Total AUM's - Available Per Acre
 3.31
 1.13

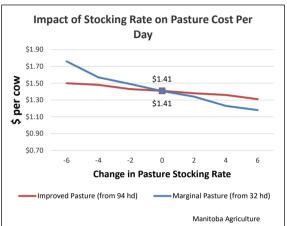
\$1,813/acre = \$290,000 Total Cost (\$72,500 loan @ 8%, 25 years = \$6,792 annual pmt) \$813/acre = \$130,000 Total Cost (\$32,500 loan @ 8%, 25 years = \$3,045 annual pmt)

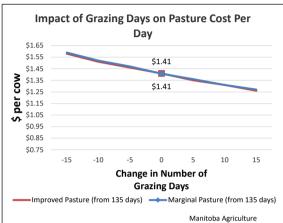
		Season	Daily		Season	Daily	
A. Operating Costs	\$/Acre	\$/head	\$/head	\$/Acre	\$/head	\$/head	Your Cost
Land Development	\$17.75	\$30.08	\$0.22	\$0.00	\$0.00	\$0.00	
Fertilizer - Annual	\$20.34	\$34.47	\$0.26	\$0.00	\$0.00	\$0.00	
Herbicide	\$1.00	\$1.69	\$0.01	\$1.00	\$5.00	\$0.04	
Fence Maintenance	\$2.46	\$4.17	\$0.03	\$1.86	\$9.29	\$0.07	
Facilities Maintenance	\$0.50	\$0.85	\$0.01	\$0.50	\$2.50	\$0.02	
Pasture Days Insurance	\$3.89	\$6.62	\$0.05	\$1.34	\$6.70	\$0.05	
Land Taxes	\$10.00	\$16.95	\$0.13	\$5.00	\$25.00	\$0.19	
<u>Miscellaneous</u>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Sub-total Operating Cost	\$55.93	\$94.83	\$0.71	\$9.70	\$48.49	\$0.36	
Interest on Operating	\$2.52	\$4.27	\$0.03	<u>\$0.44</u>	\$2.18	\$0.02	
Total Operating Costs	\$58.45	\$99.07	\$0.74	\$10.13	\$50.67	\$0.38	
B. Fixed Costs							
2.0 Investment							
2.01 Land	\$42.45	\$71.95	\$0.53	\$19.03	\$95.14	\$0.70	
2.02 Facilities	\$2.16	\$3.66	\$0.03	\$1.79	\$8.93	\$0.07	
3.0 Depreciation							
3.01 Facilities	\$8.65	\$14.66	\$0.11	<u>\$7.15</u>	\$35.74	\$0.26	
Total Fixed Costs	\$53.26	\$90.27	\$0.67	\$27.96	\$139.81	\$1.03	
Total Operating and Fixed	\$111.71	\$189.34	\$1.41	\$38.10	\$190.48	\$1.41	
C. Labour	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Total Cost of Production	\$111.71	\$189.34	\$1.41	\$38.10	\$190.48	\$1.41	

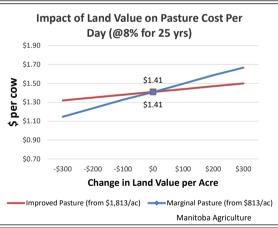
	Cost Analysis	6
	Improved Pasture	Unimproved Pasture
Total Annual Cost	\$17,874	\$6,095
Pasture Cost / Head / Day	\$1.41	\$1.41
Pasture Investment per Head	\$3,085	\$4,063
Pasture Cost / AUM	\$33.79	\$33.86
Pasture Investment per AUM	\$548	\$722

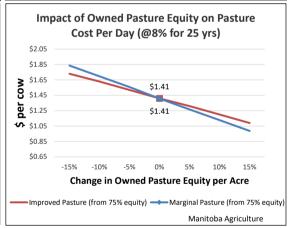
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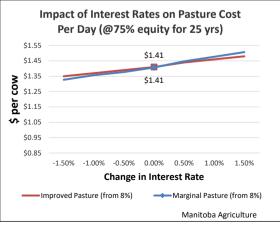
	lmp	roved Pas	ture	Unim	proved Pa	sture
			Changed			Changed
		Amount	Cost / Day	•	Amount	Cost / Day
		Added	\$/head		<u>Added</u>	\$/head
Change in Stocking Rate	(from 94 hd)	2	\$1.38	(from 32 hd)	2	\$1.34
Change in Grazing Days	(from 135 days)	5	\$1.35	(from 135 days)	5	\$1.36
Change in Land Value	(from \$1,813)	\$100	\$1.44	(from \$813)	\$100	\$1.50
Percent Change in Owned Lar Equity	nd (from 75%)	-5%	\$1.52	(from 75%)	-5%	\$1.56
Change in Interest Rate	(from 8%)	0.50%	\$1.44	(from 8%)	0.50%	\$1.45











Dollar Coverage per Animal Unit for each AU day

MASC Pasture Days Insurance Factsheet

MASC Pasture Days Insurance Calculator

Pasture Days Insurance Cost & Analysis

\$2.25

Coverage

Total Acres

Historic grazing period or Individual 10-year average
Coverage Level of of Normal AU days

Date livestock placed on pasture
Historical grazing period end date (134 days)

134 days or
90%

May 21 (coverage would last until September 19, or 121 days)

October 2

Premium Rate 4.70%
Premium share (producer) 40%

 Improved Pasture
 Unimproved Pasture

 160 acres
 160 acres

Animal Inventory

| Number of Head | Unit (AU) | Head | Unit (AU) |
| 1 Bull, bred cow or cow/calf pair = 1.3 A.U. | 94 | 122 | 32 | 42

Coverage Calculation

Animal Unit Days	16,348 (122 AU x 134 days)	5,628 (42 AU x 134 days)
Pasture Guarantee Days	14,713 (16,348 x 90% or 121 days)	5,065 (5,628 x 90% or 121 days)
Estimated Dollar Coverage	\$33,104.70 (14,713 x \$2.25)	\$11,396.70 (5,065 x \$2.25)
Est. Avg. Coverage (\$/head/season)	\$352.18 (\$33,105 ÷ 94 head)	\$356.15 (\$11,397 ÷ 32 head)
Est. Avg. Coverage (\$/head/day)	\$2.63 (\$352.18 ÷ 134 days)	\$2.66 (\$356.15 ÷ 134 days)

Premium Calculation

Premium = Expected number of Grazing Days x Animal Units x coverage Level x Insurable Value x Premium Rate %

 Premium
 \$1,555.92 (134 x 122 X 90% x \$2.25 x 4.7%)
 \$535.64 (134 x 42 X 90% x \$2.25 x 4.7

 Est. Premium: Producer Share (1.88%)
 \$622.37 (\$1,555.92 x 40%)
 \$214.26 (\$535.64 x 40%)

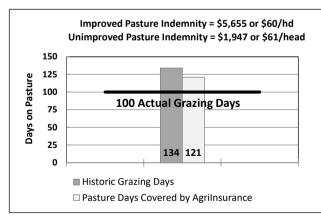
 Est. Premium (\$/Acre)
 \$3.89 (\$622.37 ÷ 160)
 \$1.34 (\$214.26 ÷ 160)

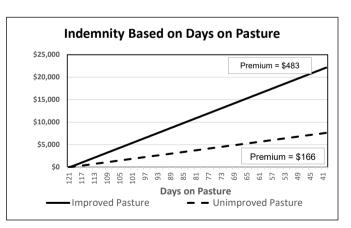
 Est. Premium (\$/head/season)
 \$6.62 (\$622.37 ÷ 94)
 \$6.70 (\$214.26 ÷ 32)

 Est. Premium (\$/head/day)
 \$0.0494 (\$6.62 ÷ 134)
 \$0.0500 (\$6.7 ÷ 134)

Indemnity Calculation

Date livestock removed from pasture (enter M/DD) August 29 **100** days Livestock removed from pasture after (21 days of pasture coverage) Actual Animal Unit Days 12,200 (122 AU x 100 days) **4,200** (42 AU x 100 days) Pasture Shortfall **2,513** (14,713 - 12,200) 865 (5,065 - 4,200) **Estimated Indemnity** \$5,654.70 (2,513 AU Days x \$2.25) \$1,946.70 (865 AU Days x \$2.25) Est. Indemnity (\$/Acre) **\$35.34** (\$5,655 ÷ 160 acres) **\$12.17** (\$1,947 ÷ 160 acres) Est. Indemnity (\$/head/season) **\$60.16** (\$5,655 ÷ 94 head) **\$60.83** (\$1,947 ÷ 32 head) Est. Indemnity (\$/head/day) \$2.86 (\$60.16 ÷ 21 days) \$2.90 (\$60.83 ÷ 21 days)





September 17

Breakeven Analysis

Est. Breakeven removal date from pasture (119 days) (Removal Date Est. Indemnity = Est. Producer Premium)

AUM Analysis

Total Animal Unit Months (AUM's)	546	186
Total AUM's - Available Per Acre	3.41	1.16

Land Base

Pasture Total Cost per Head

Pasture Input				
Improved Pasture	Unimprove	d Pasture		
160 acres	160	acres		
\$1,813 \$290,000	\$813	\$130,000		

Land Dase		improved i	astare	Cillingiove	u i astaic
Total Acres		160	acres	160	acres
Market Value (excludi	ng fence, water, facilities)	\$1,813	\$290,000	\$813	\$130,000
		Carrying Ca	apacity	Carrying C	apacity
Number of head pas	stured/season	94	head	32	head
Number of head pas	stured/acre	0.59	Hd/acre	0.20	Hd/acre
Number of pasture a	acres/head	1.7	Acre/head	5.0	Acre/head
Estimated average	weight on pasture	1350	lbs/head	1350	lbs/head
Metabolic Animal Ur	nit Value	1.25		1.25	
Grazing period	Days	135	days	135	days
	Months	4.5	months	4.5	months
AUM Analysis					
Total Animal Unit Mo	onths (AUM's)	529		180	
Total AUM's - Availa	ble Per Acre	3.31		1.13	
Pasture Investment	per AUM	\$548		\$722	
Total Pasture Cost F	Per AUM	\$33.79		\$33.86	
Pasture Efficency	<u>Analysis</u>				
Pounds liveweight p	er acre	797		270	
Total pounds on pas		127,440		43,200	

Land Development & Forage Establishment - Rental & Custom

\$1.41 /day

\$1.41 /day

	Impro	oved Pastui	·e	Unim	proved Pas	sture
		Number			Number of	
Custom Work	Cost/Ac	of Passes	Total/Ac	Cost/Ac	Passes	Total/Ac
Land Breaking & Tillage	\$20.00	3	\$60.00	\$0.00	0	\$0.00
Land Clearing	\$0.00	0	\$0.00	\$0.00	0	\$0.00
Harrowing	\$12.00	2	\$24.00	\$0.00	0	\$0.00
Seeding	\$28.00	1	\$28.00	\$0.00	0	\$0.00
Other - Misc.	\$0.00	0	\$0.00	\$0.00	0	\$0.00
			\$112.00			\$0.00
Number of Productive Years (Annual Cost Amortization)		10	years	10 y	/ears	

Land Development & Forage Establishment - Seed & Treatment

	Seeding Rate per Acre	Price <u>per Unit</u>	Cost per Acre
Improved Pasture			
Forage seed	10 lb	\$4.25 /lb	\$42.50
Oat greenfeed (nurse crop)	1.25 bu	\$9.00 /bu	\$11.25
Unimproved Pasture	0 lb	\$0.00 /lb	\$0.00

		Fertilizer		
	Bulk Price	Actual Nutrient	Nitrogen	Sulphur
Fertilizer Type	<u>\$/tonne</u>	<u>\$/Ib</u>	<u>Usage</u>	<u>Usage</u>
Nitrogen: (urea) 46-0-0	\$825	\$0.814	100%	-
Nitrogen: (NH3) 82-0-0	\$1,300	\$0.719	0%	-
Nitrogen: (liquid) 28-0-0	\$500	\$0.810	0%	-
Phosphorus: 11-52-0	\$1,075	\$0.766	-	-
Potash: 0-0-60	\$625	\$0.473	-	-
Sulphur: 20.5-0-0-24	\$600	\$0.439	-	100%
MES S15: 13-33-0-15	\$1.000	\$0.635	_	0%

Amount of Actual Pounds of Elements Applied Per Acre

	<u>Nitrogen</u>		<u>Phosphorus</u>		Po	<u>Potash</u>		<u>Sulphur</u>	
	<u>lbs</u>	\$/acre	<u>lbs</u>	\$/acre	<u>lbs</u>	\$/acre	<u>lbs</u>	\$/acre	\$/acre
Improved Pasture	· 	<u></u>	· 		·	·			
Perennial Pasture Production	50	\$40.68	0	\$0.00	0	\$0.00	0	\$0.00	\$40.68
Establishment (nurse crop)	50	\$21.65	50	\$46.89	30	\$14.17	15	\$17.01	\$99.72
Unimproved Pasture	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00

 Improved Pasture acres fertilized annually
 80 acres

 Unimproved Pasture acres fertilized annually
 0 acres

 Custom Application - Fertilizer
 \$10.00 /acre

Chemicals					
	u	n (e)	111	of: I	S

	Weed Control <u>\$/acre</u>	Spot Spray <u>\$/acre</u>	Insect Control <u>\$/acre</u>	Total Cost <u>\$/acre</u>
Improved Pasture				
Annual Production	\$0.00	\$1.00	\$0.00	\$1.00
Establishment (nurse crop)	\$14.00	\$0.00	\$0.00	\$14.00
Unimproved Pasture	\$0.00	\$1.00	\$0.00	\$1.00

Custom Application - Herbicide \$8.00 /acre

Operating Costs

Maintenance & Repairs (total cost/year)

Fence Maintenance (% of investment cost)

2.00 %
Facilities Maintenance (% of investment cost)

1.00 %

	Improved Pastur	re	Unimproved Past	sture	
	\$/Acre	Total	\$/Acre	Total	
Maintenance & Repairs (total cost/year)	-				
Fence Maintenance	\$2.46	\$393.54	\$1.86	\$297.42	
Maintenance & Repairs	\$0.50	\$80.00	\$0.50	\$80.00	
Land Taxes	\$10.00	\$/acre	\$5.00	\$/acre	
Miscellaneous	\$0.00	\$/acre	\$0.00	\$/acre	
Interest on Operating	9.00	%			

	Labour Costs		
	Improved Pasture	Unmproved Pasture	
Total hours/season	0.0	0.0	
Rate per hour	\$27.00	\$27.00	

Land Development & Forage Establishment - Greenfeed Production

	Yield <u>per Acre</u>	Price <u>per Unit</u>	Value <u>per Acre</u>
Improved Pasture			
Oat greenfeed (nurse crop)	1.50 ton/acre	\$0.040 /lb	\$120.00 (establishment year only)

	Pas	ture Land C	osts		
Imp	proved Pastu	ıre	Unim	proved Pas	ture
	160	acres		160	acres
	\$/Acre	Total	_	\$/Acre	Total
Market Value (excluding fence, water, facilities)	\$1,813	\$290,000	_	\$813	\$130,000
Owned Land Equity	75%			75%	
Land Financed	25%			25%	
Land Opportunity Cost (Investment Rate)	0.00%			0.00%	
Land cost					
Finance Rate & Term 8.000%	25	Years	8.000%	25	Years
Principle & Interest Cost	\$42.45	\$6,792		\$19.03	\$3,045
Owned Land Opportunity Cost	\$0.00	<u>\$0</u>		\$0.00	<u>\$0</u>
Total Cost	\$42.45	\$6,792		\$19.03	\$3,045
Pasture Total Cost per Head	\$1.41	/day		\$1.41	'day
Pasture Investment per Head on Pasture	\$3,085	acre/		\$4,063	acre

		Oth	Costs				
	Imp	roved Past	ure	Unimproved Pasture			
		Useful	Salvage		Useful	Salvage	
Other Capital Costs	<u>Value</u>	Life Yrs	Value %	<u>Value</u>	Life Yrs	Value %	
Water Development	\$8,000	20	0	\$8,000	20	0	
Handling facilities	\$0	20	0	\$0	20	0	
Fence Cost	<u>\$19,677</u>	<u>20</u>	<u>0</u>	<u>\$14,871</u>	<u>20</u>	<u>0</u>	
Total Other Capital Costs	\$27,677	20	0	\$22,871	20	0	
Investment interest rate		2.50	%				
	-	\$/Acre	Total	-	\$/Acre	Total	
Other Capital Investment Cost @ 2	2.5%	\$2.16	\$345.96	_	\$1.79	\$285.89	
Other Capital Depreciation Cost		\$8.65	\$1,383.84		\$7.15	\$1,143.54	

		Number of miles of Fence Required		Per Mile of	Improved	Un- Improved	
	Improved Pasture	Unimproved Pasture	Materials	Labour	Equipment	Pasture Total Cost	Pasture Total Cost
Barbed Wire (4 strand)	2.00	2.00	\$5,147	\$1,118	\$1,170	\$14,871	\$14,871
Electric Wire (4 strand)	0.00	0.00	\$2,510	\$500	\$490	\$0	\$0
Electric Wire (2 strand)	0.00	0.00	\$1,993	\$412	\$435	\$0	\$0
Electric Wire (1 strand)	2.00	0.00	\$1,625	\$370	\$408	\$4,806	\$0
Page Wire (w/optional top wire)	0.00	0.00	\$9,259	\$2,344	\$2,320	\$0	<u>\$0</u>
					Total	\$19,6 77	\$14,871
For more information on fence costs, Manitoba	a Livestock Fence Co	st Calculator					

Other Assumptions

Land Development Costs:

Includes: (eg. (\$112.00 custom land preparation + \$42.50 grass seed + \$11.25 oat nurse crop seed + \$99.72 est. fertilizer + \$10.00 custom fertilizer applic. + \$14.00 est. herbicide + \$8.00 custom herbicide applic. - \$120.00 greenfeed forage value) / 10 productive years = \$17.75 cost per acre annually)

Fence Maintenace Costs:

Assumes 2% of fence value for annual maintenance & repair.

(eg. (\$19,677 total fence cost x 2% annual repair cost) / 160 pasture acres = \$2.46 cost per acre)

Facilities Maintenace Costs:

Assumes 1% of other capital costs for annual maintenance & repair.

(eg. (\$8,000 total facilites cost x 1% annual repair cost) / 160 pasture acres = \$0.50 cost per acre)

Miscellaneous Costs:

Includes overhead expenses: hydro, telephone, accounting, supplies and insurance, etc.

Land Taxes:

The average for the province was based on land tax assessment and mill rates of a sample of municipalities with pasture less provincial tax rebate.

Interest On Operating:

Interest charges on operating costs are calculated at 9% for six months.

Land Cost:

Based on approximate average pasture values. Budget assumed improved pasture 25% financed at 8% for 25 years, plus 0% land equity opportunity cost and unimproved pasture 25% financed at 8% for 25 years, plus 0% land equity opportunity cost. Budget can be used to estimate cashflow by removing investment cost.

Land P&I Costs:

Improved Pasture (based on \$72,500 Mortgage) = \$6,792 payment per year) / 160 acres = \$42.45/acre Unimproved Pasture (based on \$32,500 Mortgage) = \$3,045 payment per year) / 160 acres = \$19.03/acre Land Investment Costs:

Improved Pasture = (Total Inv. x Owned Equity %) x Inv. Rate % (eg. $((\$1,813 \times 75\%) \times 0\%) = \$0.00/acre$ Unimproved Pasture = (Total Inv. x Owned Equity %) x Inv. Rate % (eg. $((\$813 \times 75\%) \times 0\%) = \$0.00/acre$

Other Capital Investment Cost:

Investment Cost = Original Cost + Salvage Value x Investment Rate

2

Other Capital Investment Costs:

Improved Pasture: (((\$27,677 + \$0.00) / 2) x 2.5% investment rate) / 160 acres = \$2.16 cost per acre Unimproved Pasture: (((\$22,871 + \$0.00) / 2) x 2.5% investment rate) / 160 acres = \$1.79 cost per acre

Other Capital Depreciation Cost:

Depreciation Cost = Original Cost - Salvage Value

Useful Life

Other Capital Depreciation Costs:

Improved Pasture: ((\$27,677 - \$0.00) / 20 years useful life) / 160 pasture acres = \$8.65 cost per acre Unimproved Pasture: ((\$22,871 - \$0.00) / 20 years useful life) / 160 pasture acres = \$7.15 cost per acre

Grazing Formulas:

Total Animal Animal Month's (AUM's) = 94 head x 1.25 Metabolic Animal Unit Value x 4.5 months = 529

Total AUM's - Available Per Acre = 529 Total AUM's / 160 acres = 3.31

Total Pasture Cost Per AUM = \$17873.71 cost per acre / 529 AUM = \$33.79

April, 2024

Contact Us

For more information, contact a Farm Management Specialist.

- · manitoba.ca/agriculture
- mbfarmbusiness@gov.mb.ca
- 1-844-769-6224

Calculating Pasture Capacity - Number of Head Pastured

		Example	Your Farm
1.	Animal Unit Month Available per acre* (see table; soil group 3 veg assoc. 11)	3.3	
2.	Animal Unit Equivalents** (Average weight of animals^.75 ÷ 1000 ^.75lbs)	1.25	
3.	AUM's available per acre for I month (1 ÷ 2)	2.65	
4.	Grazing period in months	4.5	
5.	AUM's available per acre for total period (3 ÷ 4)	0.59	
6.	Total Acres in Pasture	160	
7.	Carrying Capacity of Pasture (# of Head) (5 x 6)	94	

^{*} One Animal Unit Month (AUM) is defined as a 1000 lb beef cow, with or without a nursing calf, with a daily requirement of 26 lbs dry matter forage. Therefore 1 AUM is equal to 780 lbs of dry matter forage.

A more accurate estimate of daily or monthly forage demand of livestock on a grazing system can be reached by using the metabolic weight of the livestock rather than the live weight of the animals. It has been found that metabolic weight accounts for significant variation in dry matter intake among animals of different size (NRC 1996). Metabolic weight is the live weight to the 0.75 power. Beef cattle animal unit equivalents can be determined for animals of different sizes by calculating their metabolic weight as a percentage of the metabolic weight of a 1000 pound cow.

			(AUM) Available per Acre			Carr (base 1350 lb	roved Pas ying Capa d on 160 a animals days	acity acres, for 135	Carı (base 1350 li	proved Parying Cap ed on 160 o animals days	acity acres, for 135
	M 4 . 4	ŀ		oil Group			oil Group			Soil Group	
	Vegetative Associations	ŀ	Light 2	Medium 3	Heavy 4	Light 2	Medium 3	Heavy 4	Light 2	Medium 3	Heavy 4
	Woodland	1	0.2	0.4	0.5	-	-	-	5	11	14
	Open woodland	2	0.4	0.6	0.8	_	-	-	11	17	22
Bush	Harvested woodland	3	0.6	0.8	0.9	-	-	-	17	23	26
	Boreal forest	4	0.0	0.0	0.0	-	-	-	0	0	0
	Upland grass	5	0.8	1.2	1.0	-	-	-	22	34	28
Meadow	Transitional grassland	6	1.2	1.2	1.4	-	-	-	34	34	39
	Lowland meadow	7	1.6	1.8	1.8	-	-	-	45	51	51
	Hay regrowth	8	0.5	0.8	1.0	14	22	28	-	-	-
Impressed	Poor tame forage	9	1.4	1.4	1.6	39	39	45	-	-	-
Improved	Fair tame forage	10	2.0	2.8	3.0	56	79	85	-	-	-
	Good tame forage	11	3.5	4.0	5.0	99	113	142	-	-	-
	Annual crop land	12	0.0	3.0	3.0	0	85	85	-	-	-
Annual	Crop stubble	13	0.0	0.5	0.5	0	14	14	-	-	-
	Fall seeded cereal	14	0.0	1.6	1.6	0	45	45	-	-	-

Estimated Carrying Capacity: Pick the soil group and vegetative association (from the table above) that most closely represents your land.

Contact us

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