Winter Wheat Grazing

Department of Agricultural Economics — *www.agmanager.info*

K-STATE Research and Extension

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Kevin C. Dhuyvetter
Agricultural Economist
Farm Management

Michael Langemeier
Agricultural Economist

Troy J. Dumler
Agricultural Economist

Kansas is known as the wheat state because of its grain production. However, wheat is an excellent grazing crop, so producers may want to look at income from forage as well as the grain. Depending on weather and market conditions, producers can consider three basic wheat grain and forage strategies: harvest the wheat as grain only, as forage and grain, or as forage only (graze out). Other guides included in the crops section of the K-State Farm Management Guide series examine wheat as a grain crop only. This guide examines the grazing alternatives. Many Kansas producers view wheat grazing as an opportunity for additional revenue that presents itself periodically in certain locations in Kansas, depending on planting and growing conditions.

If the objective of the wheat crop is to harvest both forage and grain, cattle must be removed before the wheat reaches the jointing stage to minimize grain yield losses. Grazing typically begins in mid-October to mid-November, depending on planting date and moisture. Cattle are supplemented through the winter when the wheat is dormant or snow covered. Under proper management research shows little or no effect on yields with properly managed spring grazing. Additional fertilizer will be required after spring grazing to achieve desired yields. Be aware that grain yields can be reduced significantly by excessive stocking rates, or by leaving the cattle on too long in the spring. Table 1 identifies the assumptions used in our "Winter Wheat Grazing" example budget projection.

Alternatively, producers may want to harvest at least a portion of their wheat solely as a forage (graze-out) crop. Again, grazing typically begins in October or November, and the cattle are supplemented when the wheat is dormant or snow covered. Unlike in the previous scenario, grazing continues into the spring as late as mid-May to early June. The stocking rate needs to be increased in the spring relative to that of fall and winter to assure uniform grazing and forage utilization. Producers typically consolidate cattle from winter wheat grazing onto fewer acres for wheat graze-out. Table 2 reveals the assumptions used in our "Winter Wheat Graze-Out" example budget projection.

Under either scenario, cattle that are grazing wheat should be implanted. During lush growth, cattle are susceptible to bloat, so management of this risk is important. Including an ionophore with supplemental feed or by other means can improve daily gains and reduce bloat. There are a number of alternative arrangements for wheat pasture leasing: 1) dollar per hundredweight per month; 2) dollar per pound of gain; 3) dollar per head per day; or 4) dollar per acre. Some leases may dictate the amount and type of supplemental feed to be provided. Producers who graze their own cattle on their own wheat should consider the lease charge as an opportunity cost of their forage, as they could lease it to someone else.

Cost-Return Budgets

The example budgets included in this guide estimate costs and returns for both steer and heifer wheat grazing programs. There is an example budget included for a "Winter Wheat Grazing" program, assuming that the wheat will also be harvested for grain, as well as an example budget for a "Winter Wheat Graze-Out" program assuming the wheat is only harvested as a forage. Projected 2012 input and output prices are used for illustrative purposes. Where available, Kansas Farm Management Association enterprise reports are used as a basis for estimating other operating costs. Producers should use their own prices and costs, and adjust production factors to match their individual situations when using the budget. Break-even prices are particularly sensitive to changes in average daily gain, pasture rental charge, and feeder cost. Because of this sensitivity, it is important to analyze the feasibility of alternative programs at the beginning of each grazing season.

Production Level

Costs per unit and net returns in livestock production are highly dependent on animal performance. The following budgets include two different production level assumptions. Production levels vary for a number of reasons including livestock quality or genetics, weather, input levels, and management. The two production levels included in these estimated budgets primarily reflect production variability due to weather and management. Budgeting at multiple production levels can help producers examine the financial risk of a livestock enterprise that is directly related to production risk.

These wheat grazing budgets include columns for two alternative performance levels for both steer and heifer grazing systems. In each case, performance is assumed to be above or below long term averages due to differences in average daily gain. The values assumed in the "Winter Wheat Grazing" budget projection are included in Table 1. Similarly, the values assumed in the "Winter Wheat Graze-Out" budget projection are included in Table 2.

COST-RETURN PROJECTION — WINTER WHEAT GRAZING

	Steers		Heifers		
	Level 1	**Level 2**	**Level 1**	**Level 2**	**Your Farm**
RETURNS PER HEAD					
1. Market animal: (See Table 1)	$ 1,052.08	$ 1,008.39	$ 931.73	$ 885.70	
2. Less cost of animal: (See Table 1)	760.86	760.86	658.67	658.67	
3. Less death loss	21.04	20.17	18.63	17.71	
4. Other income					
A. GROSS RETURNS PER HEAD	$ 270.18	$ 227.36	$ 254.43	$ 209.32	
COSTS PER HEAD					
5. Pasture	$ 118.80	$ 97.20	$ 108.00	$ 86.40	
6. Harvested forage	15.73	15.73	15.73	15.73	
7. Grain	26.02	26.02	26.02	26.02	
8. Supplement, mineral, and salt	9.05	9.05	9.05	9.05	
9. Other feed					
10. Labor	6.08	6.08	6.08	6.08	
11. Veterinary, drugs, supplies	11.50	11.50	11.50	11.50	
12. Marketing costs	10.00	10.00	10.00	10.00	
13. Hauling/Yardage					
14. Utilities, fuel, and oil	10.92	10.92	10.92	10.92	
15. Facilities and equipment repairs	8.00	8.00	8.00	8.00	
16. Professional fees (legal, accounting, etc.)	2.00	2.00	2.00	2.00	
17. Miscellaneous	5.00	5.00	5.00	5.00	
18. Depreciation on facilities and equipment	5.09	5.09	5.09	5.09	
19. Interest on facilities and equipment	2.71	2.71	2.71	2.71	
20. Insurance and taxes on facilities and equipment	0.18	0.18	0.18	0.18	
B. SUBTOTAL	$ 231.08	$ 209.48	$ 220.28	$ 198.68	
21. Interest on feeder and ½ Operating Costs	18.54	18.31	16.24	16.01	
C. TOTAL COSTS PER HEAD	$ 249.62	$ 227.79	$ 236.52	$ 214.69	
D. RETURNS OVER TOTAL COSTS (A – C)	$ 20.56	$ -0.42	$ 17.92	$ -5.36	
22. Hundredweight produced	2.50	2.03	2.27	1.80	
23. Feed cost per hundredweight	67.91	73.02	70.05	76.36	
E. BREAK-EVEN PRICE, $/cwt	$ 144.41	$ 151.47	$ 137.36	$ 144.44	
F. ASSET TURNOVER (A ÷ INVESTMENT)[1]	33.66%	28.33%	36.33%	29.89%	
G. NET RETURN ON INVESTMENT ((D + 19 + 21) ÷ INVESTMENT)[1]	5.21%	2.57%	5.26%	1.91%	

[1] *Investment equals total value of feeder calf, facilities (fence), and equipment*

Table 1. *Factors Used for Winter Wheat Grazing Cost-Return Budget*

	Steers		Heifers	
	Level 1	Level 2	Level 1	Level 2
Days on pasture	120	120	120	120
Average daily gain	2.20	1.80	2.00	1.60
Purchase weight	450	450	425	425
Purchase price	$169.08	$169.08	$154.98	$154.98
Sale weight, $/cwt	714	666	665	617
Sale price, $/cwt	$147.35	$151.41	$140.11	$143.55
Feed				
Pasture, months @ $0.45/lb of gain	264	216	240	192
Grain sorghum, lbs/day @ $6.07/bu	2.00	2.00	2.00	2.00
Prairie hay, lbs/day @ $89.89/ton	2.92	2.92	2.92	2.92
Mineral and salt @ $603/ton	0.25	0.25	0.25	0.25
Other feed, lbs/day @$0/ton	0.00	0.00	0.00	0.00
Labor, hours @ $13.50/hr	0.45	0.45	0.45	0.45

	Investment ($/head)	Useful life (years)	Salvage value, (%)	Interest rate, (%)	Insurance rate, (%)	Tax rate (%)
Facilities (fence)	$5.11	10	0%	6.50%	0.25%	1.50%
Equipment	$36.65	8	0%	6.50%	0.25%	0.00%

Interest rate on operating costs and purchased cattle	6.5%

COST-RETURN PROJECTION — WINTER WHEAT GRAZE-OUT

	Steers		Heifers		
	Level 1	**Level 2**	**Level 1**	**Level 2**	**Your Farm**
RETURNS PER HEAD					
1. Market animal: (See Table 2)	$ 1,208.93	$ 1,138.55	$ 1,064.30	$ 1,002.48	
2. Less cost of animal: (See Table 2)	760.86	760.86	658.67	658.67	
3. Less death loss	24.18	22.77	21.29	20.05	
4. Other income					
A. GROSS RETURNS PER HEAD	$ 423.90	$ 354.92	$ 384.35	$ 323.76	
COSTS PER HEAD					
5. Pasture	$ 155.52	$ 146.88	$ 145.20	$ 136.56	
6. Harvested forage	15.73	15.73	15.73	15.73	
7. Grain	39.03	39.03	39.03	39.03	
8. Supplement, mineral, and salt	13.57	13.57	13.57	13.57	
9. Other feed					
10. Labor	8.10	8.10	8.10	8.10	
11. Veterinary, drugs, and supplies	15.00	15.00	15.00	15.00	
12. Marketing costs	10.00	10.00	10.00	10.00	
13. Hauling/Yardage					
14. Utilities, fuel, and oil	16.38	16.38	16.38	16.38	
15. Facilities and equipment repairs	9.00	9.00	9.00	9.00	
16. Professional fees (legal, accounting, etc.)	2.00	2.00	2.00	2.00	
17. Miscellaneous	6.00	6.00	6.00	6.00	
18. Depreciation on facilities and equipment	5.09	5.09	5.09	5.09	
19. Interest on facilities and equipment	2.71	2.71	2.71	2.71	
20. Insurance and taxes on facilities and equipment	0.18	0.18	0.18	0.18	
B. SUBTOTAL	$ 298.32	$ 289.68	$ 288.00	$ 279.36	
21. Interest on feeder and ½ Operating Costs	28.89	28.75	25.44	25.31	
C. TOTAL COSTS PER HEAD	$ 327.20	$ 318.42	$ 313.44	$ 304.66	
D. RETURNS OVER TOTAL COSTS (A – C)	$ 96.70	$ 36.50	$ 70.91	$ 19.10	
22. Hundredweight produced	3.79	3.09	3.44	2.74	
23. Feed cost per hundredweight	59.05	69.75	62.02	74.85	
E. BREAK-EVEN PRICE, $/cwt	$ 131.24	$ 142.29	$ 126.36	$ 137.87	
F. ASSET TURNOVER (A ÷ INVESTMENT)[1]	52.81%	44.22%	54.87%	46.22%	
G. NET RETURN ON INVESTMENT ((D + 19 + 21) ÷ INVESTMENT)[1]	15.98%	8.47%	14.14%	6.73%	

[1] *Investment equals total value of feeder calf, facilities (fence), and equipment*

Table 2. *Factors Used for Winter Wheat Grazing (Graze-out) Cost-Return Budget*

	Steers		Heifers	
	Level 1	Level 2	Level 1	Level 2
Days on pasture	180	180	180	180
Average daily gain	2.20	1.80	2.00	1.60
Purchase weight	450	450	425	425
Purchase price	$169.08	$169.08	$154.98	$154.98
Sale weight, $/cwt	846	774	785	713
Sale price, $/cwt	$142.90	$147.10	$135.58	$140.60
Feed				
Pasture, months @ $4.00/cwt/mo.	6.00	6.00	6.00	6.00
Grain sorghum, lbs/day @ $6.07/bu	2.00	2.00	2.00	2.00
Prairie hay, lbs/day @ $89.89/ton	1.94	1.94	1.94	1.94
Mineral and salt @ $603/ton	0.25	0.25	0.25	0.25
Other feed, lbs/day $0/ton	0.00	0.00	0.00	0.00
Labor, hours @ $13.50/hr	0.60	0.60	0.60	0.60

	Investment ($/head)	Useful life (years)	Salvage value, (%)	Interest rate, (%)	Insurance rate, (%)	Tax rate (%)
Facilities (fence)	$5.11	10	0%	6.50%	0.25%	1.50%
Equipment	$36.65	8	0%	6.50%	0.25%	0.00%
Interest rate on operating costs and purchased cattle						6.5%

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-1009 January 2012