

TABLE 1. Acreage Summary, Union County,
Projected 2017

BUDGET AREA.....DRY CIMARRON AREA, UNION COUNTY			
FARM SIZE..... 80 ACRES			
IRRIGATION TYPE.....FLOOD			
NUMBER OF CROPS.....2...			
		WATER USE	
ACREAGE SUMMARY:	LAND USE (ACRES)	AC.IN. PER AC.	TOTAL AC.IN.
ALFALFA ESTABLISHMENT	4	4.5	18
ALFALFA	40	24	960
NATIVE GRASS	40	18	720
TOTAL	84		1,698
ACRE FEET PER ACRE OF WATER RIGHTS			1.68

TABLE 2. Basic cost information for Dry Cimarron area, Union County,
Projected 2017

Item			
Labor Wage Rate:			
Equipment operators		\$/hour	\$8.55
General & Irrigators		\$/hour	\$7.50
Purchased Inputs:			
Seed:			
Alfalfa		\$/pound	\$3.05
Natural gas		\$/MCF	\$4.00
Diesel fuel		\$/gallon	\$2.35
Gasoline		\$/gallon	\$2.10
Electricity		cents/KwHr	7.94
LP Gas		\$/gallon	\$2.60
Baling Wire		\$/pound	\$1.32
Employee Liability Insurance		\$/ \$1,000 wages	\$20.00
Employee Benefits		percent/wages	18.00%
Labor Downtime		percent	25.00%
Financial Rates:			
Operating Capital Interest Rate		percent	5.50%
Land Interest Rate		percent	5.00%
Equipment Interest Rate		percent	5.50%
Real Interest Rate		percent	3.00%
Land Taxes		\$27.00 /acre (full value)	\$0.20
Personal Property Tax Rate	-NR - R	\$/ \$1,000 (Assessed Value)	\$22.53 \$18.53
Supervision Factors			
Field Crop-Irrigation		\$/labor hour	\$1.00
Field Crop-Equipment & General		\$/labor hour	\$0.50
Management Rate		percent	7.00%

TABLE 3. Overhead cost information for the Dry Cimarron area,
Projected 2017

Item			
Electricity (Domestic & Shop)		\$121.00 per month	\$1,452
Telephone		\$96.80 per month	\$1,162
Accounting & Legal			\$545
Misc. Supplies & Hand Tools			\$895
Pickup and Auto			
miles	12,463	@ \$0.500 per mile	\$6,232
Insurance			
- general liability (non-employee)			\$1,162
- fire/theft			\$756
Property Taxes			
- other than land & machinery			\$6,010
Building repairs and maintenance			\$575
Dues, fees, publications			\$290
Farmstead Equipment			\$91
Total			\$19,169
Total per planted acre			\$239.61

TABLE 4. Pumping costs and data for irrigation wells, Dry Cimarron area, Union County, February 2017

INPUT DATA table with columns: DEPTH CHARACTERISTICS, STAFF, DRAW DOWN, TOTAL HEAD, CASING. Rows include: GALLONS PER MINUTE (GPM), WORK HOURS/POWER, EFFICIENCY FACTOR, FUEL COST PER UNIT, FUEL PUMPING COSTS, and DIESEL WELL costs.

TABLE 5. Equipment summary for an 80 acre pasture feedlot on irrigated farm, Dry Cimarron area, Union County, February 2017

EQUIPMENT table with columns: EQUIPMENT, ANNUAL HOURS OF USE, NUMBER, TOTAL VALUE, FUEL OIL CONSUMPTION, REPAIR COSTS, FUEL OIL COST PER GALLON, DEPRECIATION, TAXES, TOTAL PER YEAR.

EQUIPMENT LIST

Table with columns: ITEM, NEW VALUE, USED VALUE, YEARS, EQUIP. COST, MAX. LUBRICANT, FUEL LIME, ACCUM. COST, INTEREST AGE, POSTAGE.

USAGE LIST

Table with columns: ALFALFA EST., NATIVE GRASS, GROSS PER ACRE, PERCENTAGE.

INTEREST PROXATION

Table with columns: ALFALFA, NATIVE GRASS, PERCENTAGE.

ALFALFA ESTABLISHMENT

Table with columns: MACHINE, UNIT, POWER, OVER, RATE, TOTAL, CUSTOM.

ALFALFA HAY

Table with columns: MACHINE, UNIT, POWER, OVER, RATE, TOTAL, CUSTOM.

NATIVE GRASS HAY

Table with columns: MACHINE, UNIT, POWER, OVER, RATE, TOTAL, CUSTOM.

ANNUAL REPAIR COSTS AS A PERCENT OF NEW VALUE

Table with columns: Hours of Use, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Based on unpublished data of D. R. Hunt, Department of Agricultural Engineering, University of Illinois.

Based on Agricultural Machinery Maintenance, Agricultural Engineers Yearbook, 1953.

- 1 Tractors
2 Baler, combine, forage harrow, windrower, pickup
3 Cart, box, disk, moldboard plow, chisel, field cultivator, row cultivator, laser plane
4 Harrow, vacuum, float, rib, disk, drag, roller, water lance, feed spreader
5 Disc rack, finger implement, rotary mower, disk chopper, feed wagon, farm truck
6 Disk, disk harrow
7 Bale of engine, motor, sprayer
8 Planter, tillage, seeding equipment, mounted systems
9 Fertilizer distributing equipment

TABLE 6. Alfalfa establishment, flood-irrigated, budgeted per acre costs and returns for an 80 acre part-time farm, Dry Cimarron area, Union County,
 Projected 2017
 Planting dates: August 15 - September 15

ITEM	PRICE	QUANTITY	PURCHASED INPUTS					TOTAL
PURCHASED INPUTS								
SEED	\$3.05	18 LBS	\$54.90					\$54.90
CANAL WATER		5 AC. IN.						
SUBTOTAL			\$54.90					\$54.90
PREHARVEST OPERATIONS								
	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
CHISEL	40 HP	0.20 HR		\$1.71	\$1.76	\$0.22	\$0.60	\$4.28
DISC	40 HP	0.17 HR		\$1.45	\$1.49	\$0.18	\$0.51	\$3.64
DRILL	40 HP	0.25 HR		\$2.14	\$2.20	\$0.27	\$0.75	\$5.35
DITCH MAINTENANCE		0.50 HR		\$4.28				\$4.28
IRRIGATE (1X)		0.75 HR		\$5.63				\$5.63
SUBTOTAL		1.87 HR		\$15.20	\$5.45	\$0.67	\$1.86	\$23.18
OVERHEAD EXPENSES								
DOWNTIME		0.16 HR		\$1.33				\$1.33
EMPLOYEE BENEFITS				\$2.74				\$2.74
INSURANCE			\$0.30					\$0.30
SUPERVISION AND MANAGEMENT				\$6.53				\$6.53
SUBTOTAL		0.16 HR	\$0.30	\$10.59				\$10.89
TOTAL OPERATING EXPENSES		2.03 HR	\$55.20	\$25.79	\$5.45	\$0.67	\$1.86	\$88.97

TABLE 7. Alfalfa hay, flood-irrigated, budgeted per acre costs and returns for an 80 acre part-time farm, Dry Cimarron area, Union County, Projected 2017
Harvesting dates: May 15 - September 15

ITEM	PRICE	YIELD						TOTAL
GROSS RETURNS								
ALFALFA HAY	\$175.00	6.20 TONS (STACKED)						\$1,085.00
GRAZING	\$15.00	1.00 ACRE						\$15.00
TOTAL							\$1,100.00	
PURCHASED INPUTS								
	PRICE	QUANTITY	PURCHASED INPUTS				FIXED COST	TOTAL
LIVESTOCK FAC & EQUIP ESTABLISHMENT: Principal		10.00 YEARS					\$4.00	\$4.00
: Interest							\$8.90	\$8.90
BALING WIRE	\$1.32	53.13 LBS	\$70.14					\$70.14
CANAL WATER		16.00 AC. IN.	\$5.00					\$5.00
PUMP WATER*		8.00 AC. IN.						
SUBTOTAL			\$75.14				\$15.74	\$90.88
PREHARVEST OPERATIONS								
	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
DITCH MAINTENANCE		0.50 HR		\$4.28				\$4.28
IRRIGATE (8X)		4.00 HR		\$30.00	\$6.64	\$0.00	\$14.38	\$51.02
SUBTOTAL	4.50 HR			\$34.28	\$6.64	\$0.00	\$14.38	\$55.29
HARVEST OPERATIONS								
MOWER (3X)	40 HP	1.11 HR		\$9.49	\$9.76	\$1.60	\$5.42	\$26.27
RAKE (3X)	40 HP	0.36 HR		\$3.08	\$3.16	\$0.54	\$3.58	\$10.37
BALER (3X)	40 HP	0.63 HR		\$5.39	\$5.54	\$0.78	\$8.10	\$19.80
HAUL (3X)	1 TON TRUCK	4.50 HR		\$38.48	\$67.18	\$37.46	\$56.72	\$199.83
SUBTOTAL	6.60 HR			\$56.43	\$85.63	\$40.38	\$73.82	\$256.27
OVERHEAD EXPENSES								
DOWNTIME		1.65 HR		\$14.11				\$14.11
EMPLOYEE BENEFITS				\$16.33				\$16.33
INSURANCE			\$1.81					\$1.81
LAND TAXES							\$0.20	\$0.20
SUPERVISION AND MANAGEMENT				\$84.30				\$84.30
OTHER EXPENSES			\$239.61					\$239.61
SUBTOTAL	1.65 HR		\$241.42	\$114.73			\$0.20	\$356.36
TOTAL OPERATING EXPENSES	12.75 HR		\$316.56	\$205.44	\$92.28	\$40.38	\$104.14	\$758.80
NET OPERATING PROFIT								\$341.20
INTEREST ON OPERATING CAPITAL		(\$49.73 @	5.50%)				\$2.74
INTEREST ON EQUIPMENT INVESTMENT								\$2.15
RETURN TO LAND AND RISK								\$336.31

* Pump water costs are shown under irrigation in the preharvest operations section.

BUDGET SUMMARY

GROSS RETURN		\$1,100.00	
VARIABLE OPERATING EXPENSES	\$449.22		
RETURN OVER VARIABLE EXPENSES		\$650.78	(GROSS MARGIN)
FIXED EXPENSES	\$104.14		
NET FARM INCOME		\$546.64	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$205.44		
NET OPERATING PROFIT		\$341.20	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$4.89		
RETURN TO LAND AND RISK		\$336.31	

TABLE 8. Native grass hay, flood-irrigated, budgeted per acre costs and returns for an 80 acre part-time farm, Dry Cimarron area, Union County,
 Projected 2017
 Harvesting dates: July 20 - September 15

ITEM	PRICE	YIELD						TOTAL	
GROSS RETURNS									
HAY	\$175.00	1.50 TONS (STACKED)						\$262.50	
GRAZING	\$13.00	1.00 ACRE						\$13.00	
TOTAL								\$275.50	
PURCHASED INPUTS									
	PRICE	QUANTITY	PURCHASED INPUTS				FIXED COST	TOTAL	
LIVESTOCK FAC & EQUIP							\$4.00	\$4.00	
BALING WIRE	\$1.32	13 LBS	\$16.97					\$16.97	
CANAL WATER		12 AC. IN.	\$5.00					\$5.00	
PUMP WATER*		6 AC. IN.							
SUBTOTAL			\$21.97				\$4.00	\$25.97	
PREHARVEST OPERATIONS									
	POWER UNIT	ACCOMPLISHMENT RATE	PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL	
DITCH MAINTENANCE		0.50 HR		\$4.28				\$4.28	
IRRIGATE (5X)		2.50 HR		\$21.38	\$4.98	\$0.00	\$10.78	\$37.14	
SUBTOTAL			3.00 HR	\$25.65	\$4.98	\$0.00	\$10.78	\$41.41	
HARVEST OPERATIONS									
MOWER (2X)	40 HP	0.74 HR		\$6.33	\$6.50	\$1.07	\$3.62	\$17.51	
RAKE (2X)	40 HP	0.24 HR		\$2.05	\$2.11	\$0.36	\$2.39	\$6.91	
BALER, 1-TON (2X)	40 HP	0.42 HR		\$3.59	\$3.69	\$0.52	\$5.40	\$13.20	
HAUL (2X)	TRUCK	1.60 HR		\$13.68	\$23.89	\$13.32	\$20.17	\$71.05	
SUBTOTAL			3.00 HR	\$0.00	\$25.65	\$36.19	\$15.27	\$31.57	\$108.67
OVERHEAD EXPENSES									
DOWNTIME		0.75 HR		\$6.41				\$6.41	
EMPLOYEE BENEFITS				\$9.23				\$9.23	
INSURANCE			\$1.03					\$1.03	
LAND TAXES							\$0.20	\$0.20	
SUPERVISION AND MANAGEMENT				\$20.79				\$20.79	
OTHER EXPENSES			\$239.61					\$239.61	
SUBTOTAL			0.75 HR	\$240.64	\$36.43		\$0.20	\$277.27	
TOTAL OPERATING EXPENSES			3.75 HR	\$262.60	\$87.73	\$41.17	\$15.27	\$453.33	
NET OPERATING PROFIT								(\$177.83)	
INTEREST ON OPERATING CAPITAL		(\$16.52 @ 5.50%)						\$0.91	
INTEREST ON EQUIPMENT INVESTMENT								\$21.11	
RETURN TO LAND AND RISK								(\$199.84)	

* Pump water costs are shown under irrigation in the preharvest operations section.

BUDGET SUMMARY

GROSS RETURN		\$275.50	
VARIABLE OPERATING EXPENSES	\$319.04		
RETURN OVER VARIABLE EXPENSES		(\$43.54)	(GROSS MARGIN)
FIXED EXPENSES	\$46.55		
NET FARM INCOME		(\$90.10)	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	\$87.73		
NET OPERATING PROFIT		(\$177.83)	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	\$22.02		
RETURN TO LAND AND RISK		(\$199.84)	

TABLE 9. Summary of per acre costs and returns for an 80 acre part-time farm, Dry Cimarron area, Union County, Projected 2017

	ALFALFA ESTABLISHMENT	ALFALFA HAY	NATIVE GRASS HAY
		TONS	TONS
PRIMARY YIELD		6.20	1.50
PRIMARY PRICE		\$175.00	\$175.00
GOVERNMENT PAYMENTS		\$0.00	\$0.00
SECOND INCOME		\$15.00	\$13.00
GROSS RETURN		\$1,100.00	\$275.50
CASH OPERATING EXPENSES			
SEED	\$54.90		
FERTILIZER			
CHEMICALS			
CROP INSURANCE			
OTHER PURCHASED INPUTS		\$70.14	\$16.97
CANAL WATER		\$5.00	\$5.00
FUEL, OIL & LUBRICANTS-EQUIPMENT	\$5.45	\$85.63	\$36.19
FUEL-IRRIGATION		\$6.64	\$4.98
REPAIRS	\$0.67	\$40.38	\$15.27
CUSTOM CHARGES			
LAND TAXES		\$0.20	\$0.20
OTHER EXPENSES	\$0.30	\$241.42	\$240.64
TOTAL CASH EXPENSES	\$61.32	\$449.42	\$319.25
RETURN OVER CASH EXPENSES	(\$61.32)	\$650.58	(\$43.75)
FIXED EXPENSES	\$1.86	\$103.94	\$46.35
TOTAL EXPENSES	\$63.18	\$553.36	\$365.60
NET FARM INCOME	(\$63.18)	\$546.64	(\$90.10)
LABOR AND MANAGEMENT COSTS	\$25.79	\$205.44	\$87.73
NET OPERATING PROFIT	(\$88.97)	\$341.20	(\$177.83)
CAPITAL COSTS			
INTEREST ON OPERATING CAPITAL		\$2.74	\$0.91
INTEREST ON EQUIPMENT INVESTMENT		\$2.15	\$21.11
TOTAL CAPITAL COSTS	\$0.00	\$4.89	\$22.02
RETURN TO LAND AND RISK	(\$88.97)	\$336.31	(\$199.84)

TABLE 10. Whole farm summary, Union County,
Projected 2017

GROSS RETURNS		
ALFALFA HAY	40 ACRES	
CROP		\$43,400
GRAZING		\$600
NATIVE GRASS HAY	40 ACRES	
CROP		\$10,500
GRAZING		\$520
GROSS RETURN		\$55,020
CASH OPERATING EXPENSES		
SEED		\$220
FERTILIZER		\$0
CHEMICALS		\$0
CROP INSURANCE		\$0
OTHER PURCHASED INPUTS		\$3,484
CANAL WATER		\$400
FUEL, OIL & LUBRICANTS-EQUIPMENT		\$4,895
FUEL-IRRIGATION		\$465
REPAIRS		\$2,229
CUSTOM CHARGES		\$0
LAND TAXES		\$16
OTHER EXPENSES		\$19,284
TOTAL CASH EXPENSES		\$30,992
RETURN OVER CASH EXPENSES		\$24,028
FIXED EXPENSES		\$5,663
TOTAL EXPENSES		\$36,655
NET FARM INCOME		\$18,365
LABOR AND MANAGEMENT COSTS		\$11,830
NET OPERATING PROFIT		\$6,535
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL		\$146
INTEREST ON EQUIPMENT INVESTMENT		\$930
TOTAL CAPITAL COSTS		\$1,076
RETURN TO LAND AND RISK		\$5,459

LAND VALUE	RETURN TO RISK*	RETURN ON INVESTMENT**
\$200 /ACRE	\$4,979	11.88%
\$350 /ACRE	\$4,619	9.75%
\$500 /ACRE	\$4,259	8.27%

* RETURN TO LAND AND RISK MINUS (INTEREST RATE TIMES LAND VALUE TIMES ACREAGE)

** NET OPERATING PROFIT DIVIDED BY (MACHINERY AND EQUIPMENT VALUE PLUS LAND VALUE)