

Ranch Practicum 2023 – Meadow Hay Summary

Yield (tons/acre)

	June 28	October regrowth	Total
Fertilized	2.03	1.60	3.63
Control – no fertilizer	1.41	1.55	2.96
	August 1		
Fertilized	3.14	0.67	3.81
Control – no fertilizer	2.38	0.62	3.00

Ranch Practicum 2023 – Meadow Hay Summary
Meadow Hay Quality - %

	June 28				October regrowth		
	CP	ADF	TDN		CP	ADF	TDN
Fertilized	8.3	47.2	48.7		9.4	42.0	56.4
Control – no fertilizer	6.7	43.2	53.3		9.1	41.9	55.9
	August 1				October regrowth		
	CP	ADF	TDN		CP	ADF	TDN
Fertilized	6.6	37.3	60.3		14.6	39.6	58.6
Control – no fertilizer	5.7	36.1	59.6		14.5	39.6	59.0

Meadow / Hayland

Harvest Date and Fertilization Summary Points:

- **June harvest**
 - Higher quality
 - Less yield
 - More regrowth
- **July harvest**
 - Lower quality
 - More yield
 - Less regrowth
- **Total production (June or July harvest + regrowth) similar (to slight increase for July harvest)**
- **Fertilization increased yield 0.6 – 0.8 tons/ac**
- **Average increase: 0.76 tons/ac**
- **Spring fertilization affects 1st harvest yield**
- **Fertilizer effect on quality variable**

Profit or **loss** (per ton) from subirrigated meadow fertilizer application based on a range of fertilizer costs and hay values

Fertilizer cost (\$/acre)	Hay value (\$/ton)										
	\$60	\$65	\$70	\$75	\$80	\$85	\$90	\$95	\$100	\$105	\$110
\$40	5.60	9.40	13.20	17.00	20.80	24.60	28.40	32.20	36.00	39.80	43.60
\$45	0.60	4.40	8.20	12.00	15.80	19.60	23.40	27.20	31.00	34.80	38.60
\$50	-4.40	-0.60	3.20	7.00	10.80	14.60	18.40	22.20	26.00	29.80	33.60
\$55	-9.40	-5.60	-1.80	2.00	5.80	9.60	13.40	17.20	21.00	24.80	28.60
\$60	-14.40	-10.60	-6.80	-3.00	0.80	4.60	8.40	12.20	16.00	19.80	23.60
\$65	-19.40	-15.60	-11.80	-8.00	-4.20	-0.40	3.40	7.20	11.00	14.80	18.60
\$70	-24.40	-20.60	-16.80	-13.00	-9.20	-5.40	-1.60	2.20	6.00	9.80	13.60
\$75	-29.40	-25.60	-21.80	-18.00	-14.20	-10.40	-6.60	-2.80	1.00	4.80	8.60
\$80	-34.40	-31.60	-26.80	-23.00	-19.20	-15.40	-11.60	-7.80	-4.00	-0.20	3.60
\$85	-39.40	-35.60	-31.80	-28.00	-24.20	-20.40	-16.60	-12.80	-9.00	-5.20	-1.40
\$90	-44.40	-40.60	-36.80	-33.00	-29.20	-25.40	-21.60	-17.80	-14.00	-10.20	-6.40

Based on an average yield increase of 0.76 tons/acre using fertilizer with 80 lb N, 22 lb P, and 20 lb S per acre. \$3.80 increase for every \$5/ton increase in hay value.

Profit or **loss** (per ton) from subirrigated meadow fertilizer application based on a range of fertilizer costs and hay values

Fertilizer cost (\$/acre)	Hay Value (\$/ton)										
	\$100	\$110	\$120	\$130	\$140	\$150	\$160	\$170	\$180	\$190	\$200
\$40	\$36.00	\$39.80	\$43.60	\$47.40	\$51.20	\$55.00	\$58.80	\$62.60	\$66.40	\$70.20	\$74.00
\$45	\$31.00	\$34.80	\$38.60	\$42.40	\$46.20	\$50.00	\$53.80	\$57.60	\$61.40	\$65.20	\$69.00
\$50	\$26.00	\$29.80	\$33.60	\$37.40	\$41.20	\$45.00	\$48.80	\$52.60	\$56.40	\$60.20	\$64.00
\$55	\$21.00	\$24.80	\$28.60	\$32.40	\$36.20	\$40.00	\$43.80	\$47.60	\$51.40	\$55.20	\$59.00
\$60	\$16.00	\$19.80	\$23.60	\$27.40	\$31.20	\$35.00	\$38.80	\$42.60	\$46.40	\$50.20	\$54.00
\$65	\$11.00	\$14.80	\$18.60	\$22.40	\$26.20	\$30.00	\$33.80	\$37.60	\$41.40	\$45.20	\$49.00
\$70	\$6.00	\$9.80	\$13.60	\$17.40	\$21.20	\$25.00	\$28.80	\$32.60	\$36.40	\$40.20	\$44.00
\$75	\$1.00	\$4.80	\$8.60	\$12.40	\$16.20	\$20.00	\$23.80	\$27.60	\$31.40	\$35.20	\$39.00
\$80	-\$4.00	-\$0.20	\$3.60	\$7.40	\$11.20	\$15.00	\$18.80	\$22.60	\$26.40	\$30.20	\$34.00
\$85	-\$9.00	-\$5.20	-\$1.40	\$2.40	\$6.20	\$10.00	\$13.80	\$17.60	\$21.40	\$25.20	\$29.00
\$90	-\$14.00	-\$10.20	-\$6.40	-\$2.60	\$1.20	\$5.00	\$8.80	\$12.60	\$16.40	\$20.20	\$24.00

Based on an average yield increase of 0.76 tons/acre using fertilizer with 80 lb N, 22 lb P, and 20 lb S per acre. \$3.80 increase for every \$5/ton increase in hay value.