

NEWS

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UNIVERSITY OF CALIFORNIA
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11-2-72

NITROGEN FERTILIZER BOOSTS BEEF YIELDS

SANTA BARBARA--Tests by University of California Farm Advisor Lin Maxwell have proved the value of nitrogen in increasing beef production in Santa Barbara County.

Maxwell, a cattle expert and county director of Agricultural Extension, said his studies showed cattlemen can net as high as one extra pound of beef from each pound of actual nitrogen applied to open grassland. Said Maxwell:

"One of the most important practices needed in Santa Barbara County range beef production is proper range fertilization. Thousands of acres of grassland need nitrogen, and some need phosphorus.

"Nitrogen is almost universally deficient, and in our tests we have obtained 50 to 100 percent more forage by applying 50 to 75 pounds of actual nitrogen per acre."

The University of California farm advisor said the study showed that Santa Barbara County cattlemen, faced with rising taxes and unable to expand because of land scarcity, can reduce production costs through proper range fertilization.

Maxwell's experiments were done on the Sisquoc Ranch near Santa Maria, in cooperation with William Caldera, ranch manager. They divided a 100-acre area approximately in half. One section received $7\frac{1}{2}$ tons of ammonia fertilizer applied by air. The other section received no fertilizer.

Cows in the unfertilized area gained 2,800 pounds over a 102-day period; calves in the same field gained 2,680. By contrast, cows in the fertilized field gained 4,440 pounds, and calves gained 4,675. The extra weight gained was due to the extra forage growing in the fertilized areas.

Maxwell figured that the gross "take"--in terms of meat sold--was \$34.80 per fertilized acre, compared to \$18.40 per unfertilized acre, not including the gains on the cows.

(more)

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"The actual cost of the nitrogen applied was 13.8 cents a pound," he said. "A pound of beef FOB the ranch is worth 25 to 40 cents, depending on class and quality.

"Therefore, a cattleman may net as much as 26 cents profit from each pound of nitrogen he applies."

Cooperating in the study were Dr. Bill Martin, U.C. Davis cattle and range expert in AES (now deceased); Lester J. Berry, AES agronomy specialist, Davis; and Pete Jameson, manager of Farm Supply, San Luis Obispo. Valley Nitrogen, Fresno, provided the fertilizer without charge.

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FERTILIZER STUDY - SANTA BARBARA COUNTY

(rainfall less than 12 inches)

Control Pasture 58.8 acres:

Fertilized Field 54 acres:

	<u>12-31 to 2-18</u>		<u>2-18 to 4-13</u>		<u>12-31 to 2-18</u>		<u>2-18 to 4-13</u>	
	Cows	Calves	Cows	Calves	Cows	Calves	Cows	Calves
Days	48	48	54	54	48	48	54	54
No. Hd.	11	11	15	15	15	15	29	29
In Wt.	8065	1570	11,890	3085	12,050	2065	25,250	5695
Ave. Wt.	731	143	793	206	803	136	871	196
Out Wt.	8785	2530	13,950	4805	13,370	3365	28,370	9050
Total Gain	740	960	2060	1720	1320	1320	3120	3355
Ave. Gain	67	87	137	115	88	88	108	116
Ave. Wt.	799	230	930	320	891	224	978	312
Ave. Gain 102 days	1.40	1.81	2.53	2.12	1.83	1.83	2.00	2.15
Total Gain		2300	2800	2680			4440	4675
Ave. Gain			187	179			153	161
Ave. Daily Gain			1.83	1.75			1.50	1.58
Lbs. Meat per Acre			48	46			82	87
				48				82
Total Lbs.				94				169

15,000 lbs. of Ammonium Sulfate - 7.5 tons, \$38.00 per ton,
 applied November 24, 1970 by air, \$285.00
 Application Cost 150.00

Total Cost \$435.00

\$8.00 per acre

Cattle prices FOB Santa Ynez Yard - Young Cows \$23.00 CWT, Calves \$40.00

CONTROL - 58.8 Acres

Tag No.	COWS					Tag No.	CALVES				
	12-31-70 In Wt.	2-18 Wt.	48 Days Gain 11 Hd.	4-13 Wt.	54-Day Gain		12-31-70 In Wt.	2-18 Out Wt.	48-Days Gain	4-13 Wt. Close	54-Day Gain
37	635	710	75	820	110	47	115	180	65	340	160
36	775	880	105	1060	180	38	185	275	90	390	115
42	680	750	70	840	90	44	200	310	110	455	145
41	640	720	80	820	100	49	160	265	105	380	115
30	705	770	65	910	140	50	95	165	70	265	100
33	735	810	75	950	140	40	105	195	90	280	85
26	830	910	80	1000	90	39	140	220	80	310	90
35	830	880	50	1030	150	46	160	245	85	375	130
27	665	710	45	840	130	45	145	225	80	355	130
32	795	795	00	910	115	44	80	160	80	290	130
29	755	850	95	1000	150	48	185	290	105	420	130
* 21		650		760	110	22		110		200	90
6		865		1050	185	23		185		220	35
24		770		950	180	25		115		275	160
70		820		1010	190	71		145		250	105
Total											
15	8045	11,890	740	13,950	2060	15	1570	3085	960	4805	1720
Ave.	731	793	67	930	137		143	206	87	320	115

* Pure Bred

FERTILIZED
Applied 11-24-70

54 Acres

Tag. No.	COWS					Tag. No.	CALVES				
	12-31 In Wt.	2-18 Wt.	Gain 48 days	Out Wt.	4-13 Gain 54 days		12-31 In Wt.	2-18 Out Wt.	Gain	4-13 Wt. Close	Gain
57	790	850	60	960	110	68	130	220	90	300	80
59	735	850	115	950	100	75	115	185	70	310	125
58	795	820	25	950	130	60	200	310	110	430	120
53	845	980	135	1050	70	65	145	240	95	340	100
66	1000	1050	50	1200	150	69	120	230	110	350	120
56	730	770	40	800	30	74	160	240	80	380	140
52	890	1000	110	1130	130	73	120	185	65	255	70
54	870	960	90	1090	130	71	230	310	80	440	130
55	890	1020	130	1120	100	67	160	240	80	380	140
21	670	700	30	830	130	64	120	225	105	350	125
20	710	840	130	930	90	63	100	160	60	275	115
19	790	850	60	960	110	22	85	200	115	320	120
70	775	900	125	1020	120	72	125	250	125	330	80
61	855	980	125	1060	80	62	140	200	60	330	130
25	705	800	95	900	100	51	95	170	75	280	110
9		950		1120	170	23		95		185	90
24		810		990	180	25		170		210	40
50		905		955	50	49		85		180	95
21		770		920	150	22		105		240	135
64		760		900	140	25		110		200	90
66		910		1080	170	69		140		280	140
70		970		1080	110	71		220		350	130
72		750		750	000	73		250		405	155
73		810		900	90	74		220		320	100
61		905		1000	95	62		255		400	145
49		930		1050	120	17		140		260	120
48		870		900	30	18		120		290	170
9		770		850	80	23		150		270	120
+63		770		925	155	+50		270		390	120
Total	12,050	25,250	1320	28,370	3120		2045	5695	1320	9050	3355
Ave.	803	871	88	978	108		136	196	88	312	116

Blue Tags
Pure Bred
9
24
50
21
64
66
70
72
73
61
49
48
9
+63
29

Blue Tags
Pure Bred
23
25
49
22
25
69
71
73
74
62
17
18
23
+50