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FESCUE PASTURES, UNDER DIFFERENT MANAGEMENT SYSTEMS, AND ORCHARDGRASS-CLOVER FOR YEARLING SLAUGHTER STEER PRODUCTION

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Summary and Conclusions

Grazing trials were conducted during 3 years, 1959-62, to compare the beef production on fescue pastures under three systems of management, and to compare these fescue treatments with an orchardgrass-ladino clover pasture.

Treatments were: 1) Fescue clipped 4-6 inches when needed to remove seed heads; 2) Fescue clipped to 2-4 inches when grass averaged 6-8 inches in height; 3) Fescue topseeded with 20 pounds of lespedeza per acre; and 4) Orchardgrass managed as in 1).

Pastures were stocked with steer calves about November 1 each year, and they were grazed constantly until about September 1 the following year. Steers were then removed and finished to USDA Good grade in dry-lot.

The major results may be summarized as follows:

1. Winter daily gains were slightly higher on the fescue treatments than on orchardgrass, but differences were not significant ($P>.05$). Fescue sods held up very well in winter while the orchardgrass was grazed very closely and possibly suffered damage. Steers on all treatments consumed hay in nearly equal amounts.

2. In only 1 year did close-clipping of fescue (treatments 2 and 3) increase steer daily gains. That year clovers thrived in the close-clipped pastures. Close-clipped treatments provided slightly less carrying capacity than the regularly-clipped treatment.

3. Lespedeza was successfully established by lightly disking the sod and then broadcasting the seed. Gains were increased during the mid-summer months, but were not significantly greater for the entire grazing season. Considerable lespedeza remained in the pastures when the cattle were removed for feeding, and the pastures could have been grazed longer.

4. Summer daily gains of cattle on the orchardgrass-ladino clover treatment were significantly greater ($P<.05$) than those of cattle on the three fescue treatments. Also, carrying capacity was higher and steers averaged one-third grade higher.

5. The fescue sods remained very dense during the experiment, while the orchardgrass thinned out over a 7-year period.

6. All cattle performed well in the feedlot during the 100 days required for the cattle to reach the USDA Good grade. However, the orchardgrass steers averaged 12 days less in the feedlot than the fescue steers, and returned more dollars per head for the entire experimental period.

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Fescue Pastures, Under Different Management Systems, and Orchardgrass-Clover for Yearling Slaughter Steer Production

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Many steer-grazing experiments conducted in Tennessee over a period of years have shown that it is difficult, if not impossible, to maintain desirable quantities of ladino clover in tall fescue pastures. Also straight fescue pastures seem to be of relatively low palatability and nutritive value, and produce significantly lower daily gains than orchardgrass-ladino clover pastures on similar soils.

Fescue is a popular grass with some beef producers in the state. It is adaptable to a wide range of growing conditions, stands up well under winter grazing, produces some winter forage, and persists over a number of years even under adverse conditions. Due to the wide distribution of fescue pastures in the state, work to find ways to improve them is needed.

An experiment was conducted at the Middle Tennessee Experiment Station for 3 years, 1959-62, to evaluate fescue pastures managed in various ways, and to compare these with orchardgrass-clover pastures.

Experimental Procedure

Pastures

Pasture plots that had previously been used in a 4-year grazing experiment were used in this work. Three plots contained orchardgrass and ladino clover and nine plots consisted of tall fescue and ladino clover mixtures. Each plot was 3 acres in size. There were three replicates of each treatment which were as follows:

1. Fescue-ladino clover. Clipped to a level of 4 to 6 inches when needed to remove seed heads.

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2. Fescue-ladino clover. Clipped to a level of 2 to 4 inches when grass was considered to average 6 to 8 inches in height or when needed to remove seed heads.
3. Fescue-ladino clover, overseeded with lespedeza. Managed same as 2.
4. Orchardgrass-ladino clover. Managed same as 1.

The pastures in each treatment were evaluated shortly before the beginning of this test, and were estimated to have the following average composition:

Estimated Composition

Tmt.	Fescue (F)	Orchardgrass (Og)	Clover (cl.)	Other
		Percent		
1	82	6	12	0
2	77	9	14	0
3	91	6	3	0
4	0	61	32	7

The soils included in each pasture are given in the next table. Maury slit loam, the predominant soil, is a deep, productive, well-drained soil of the uplands. Armour and Huntington soils are deep, well-drained soils that have medium texture throughout and are on bottoms and colluvial areas. All of these soils are medium to high in phosphate according to chemical soil tests.

Kind of Soils and Percentage in Each Treatment

Soil	Treatment			
	1	2	3	4
	Percent			
Maury silt loam, 4% to 12% slopes, eroded	65	57	61	62
Maury silty clay loam, 5% to 12% slopes, severely eroded	21	24	18	21
Armour silt loam, 2% to 5% slopes, eroded	7	9	4	10
Huntington silt loam	7	10	17	7

Animals

Angus and Hereford weanling steer calves were used as experimental grazing animals. These calves were obtained from experi-

ment station herds and local feeder calf sales. Efforts were made to obtain calves that were similar in weight, type, and condition. Two test steers were assigned to each plot.

Grazing

Grazing was begun on all pastures about November 1 each year, and the test cattle remained on the pastures until about September 1 of the following year. The winter grazing phase included the period from the start of the test, or about November 1, until enough forage grew in the spring to support the cattle without supplemental feeding, which was usually about April 1. The summer period ended when the cattle were transferred to dry-lot for finishing—usually about September 1.

During the spring and summer seasons the grazing intensity was controlled by the "put and take system," where extra animals were put on or removed from the pastures as needed. An attempt was made to graze the pastures so that most of the forage would be utilized but not to the extent that a shortage of forage might possibly occur during periods of drouth.

Fertilization and Seeding

Soil samples were obtained each year and used as a basis for fertilizing the pastures. In the spring of 1961, 300 pounds per acre of 0-20-20 analysis fertilizer was applied to all pastures, and in 1962, 100 pounds per acre of muriate of potash was applied.

In February, 1960, 20 pounds of lespedeza (mixture of common, Kobe, and Korean) was broadcast on the three fescue plots receiving treatment 3, and the dense fescue sod was loosened by moderate disking. No lespedeza seed was required in 1961 due to a heavy seed crop the previous fall; 10 pounds per acre of Korean lespedeza was applied in the spring of 1962. Also, in the spring of 1961, 15 pounds per acre of orchardgrass was applied to the pastures in treatment 4, and 2 pounds per acre of ladino clover was seeded in all fescue pastures.

Observations

The pastures were visually evaluated at 4-week intervals during the winter and at 2-week intervals during the spring and summer. These evaluations included observations on the estimated percentage and average height of the various species in each pasture, the stage of growth, condition, and color. An over-all grade based

on these factors was assigned to each pasture. Also, decisions concerning clipping and changes in animal numbers were made when the pastures were evaluated.

The test steers were weighed on 2 consecutive days initially and at the end of the test, and at 28-day intervals during the test. They were graded initially, at the end of the winter, and at the end of the summer phases; also the cattle were appraised for slaughter value by cattle buyers at the end of each phase.

Feeding

During the winter phase when pasture forage was in short supply, the cattle received fair- to poor-quality mixed grass-alfalfa hay, *ad lib*. During the winter of 1960-61, it was necessary to remove the cattle from the pastures on January 28 in order that the water troughs could be replaced. All steers were kept together on a small pasture lot and fed a ration of corn and cob meal and cottonseed meal until March 16.

All cattle were placed in dry-lot at the end of the summer phase and fed a finishing ration of corn, grain sorghum, hay, and cottonseed meal until they were considered to grade U. S. Good to Low Choice. They were then sold to a meat packing company where carcass information was obtained.

Table 1. Summary of winter period—3-year average

	Treatments			
	1 F + cl.	2 F + cl. Close clip	3 F + cl. + Lesp.	4 Og + cl.
No. of animals per year	6	6	6	6
Av. Wt. and gain/head, lb.				
Initial wt.	497	499	498	504
Final wt.	571	580	575	562
Total gain (Av. 155 days)	74	81	77	58
Daily gain[a]	.48	.52	.50	.37
Av. animal grades[b]				
Initial type	10.1	10.5	10.3	10.4
Initial condition	8.4	8.3	8.5	8.2
Final condition	5.4	5.7	5.6	5.5
Initial value/cwt.	$26.50	$26.50	$26.50	$26.50
Hay required/head, lb.[c]	1067	1070	1078	1066

[a] Differences in daily gain were not significant (P>.05).

[b] 5.0 = High Utility; 8.0 = High Standard; 10.0 = Av. Good.

[c] In addition to hay, each steer received an average of 125 lb. corn and cob meal and 28 lb. cottonseed meal during 1961.

Data were analyzed by analysis of variance, and differences between all possible combinations of treatments were tested by Duncan's Multiple Range Test.

Results and Discussion

Winter Phase

Results for the winter period of about 155 days duration are shown in Table 1. Daily gains were 0.48-, 0.52-, and 0.50-pound per head for the fescue treatments and 0.37-pound for the orchardgrass-clover treatment. Differences were not statistically significant ($P>.05$). These gains were lower than is desirable for wintering steer calves. Generally it is felt that winter gains should be in the range of 0.75-pound per day for calves going on pasture in the spring.

Probably a higher quality hay should be fed than was used in this test, along with a small amount of protein supplement during severe weather conditions in order to maintain gains at a higher level.

A good growth of herbage was available when the calves went on pasture in the fall. During the winter the fescue pastures retained a dense cover of grass, but it appeared very tough and unpalatable and the cattle seemed to eat very little of it. The orchardgrass-clover pastures were grazed very short by about January 1, and even though the steers remained on the pastures, they depended mostly on hay for the remainder of the winter period.

There were no differences between treatments in the amount of hay consumed per steer. Hay was fed for an average of 85 days during the winter period, with the calves consuming about 2.3 pounds of hay per day per hundred pounds of body weight.

Summer Phase

During the summer grazing period, daily gains were significantly higher ($P<.05$) on the orchardgrass-clover treatment than on any of the fescue treatments (Table 2). Gains were not significantly different among the fescue treatments, although the pastures containing lespedeza produced daily gains that were .14- and .13-pound per day higher than the other two fescue pasture treatments.

A significant difference between years for daily gain existed due to the higher performance of steers on the close-clipped and lespedeza-overseeded fescue pastures (treatments 2 and 3) during

Table 2. Summary of summer period—3-year average

	Treatments			
	1 F + cl.	2 F + cl. Close clip	3 F + cl. + Lesp.	4 Og + cl.
No. of animals (per year)	6	6	6	6
Av. wt. and gain/head, lb.				
Initial wt.	571	580	575	562
Final wt.	742	752	769	828
Total gain (Av. 161 days)	171	172	194	266
Daily gain	1.06[a]	1.07[a]	1.20[a]	1.65[b]
Productivity of pastures				
Grazing days/acre	155[ab]	145[ab]	132[a]	170[b]
Estimated beef gain/acre	164	155	158	280
Carrying capacity, acres per steer	1.0	1.11	1.25	0.91

[a,b] Means with same superscript do not differ significantly.

the summer of 1961. This was an excellent season for ladino clover, and the management imposed on these pastures apparently permitted good growth of clover. The fescue pastures receiving "normal" clipping (treatment 1) did not have an increase of clover this year.

The orchardgrass-clover in treatment 1 produced significantly more ($P<.05$) grazing days per acre than the fescue-lespedeza of treatment 3 (170 vs. 132 days). It was necessary to graze the fescue-lespedeza pastures lightly during May and June to allow the lespedeza to become established. There were no other significant differences in grazing days per acre.

Carrying capacity was very low on all treatments in 1962 as the result of a severe drouth during the month of May, normally a time when very heavy grazing pressure can be applied to pastures. This drouth also killed much of the clover and lespedeza in the pastures, which nullified much of the advantage that might have been obtained from close clipping and overseeding with lespedeza. Surprisingly, the daily gains were equally as good during this year on the orchardgrass-clover treatment as in previous years when there was much more clover.

Winter and Summer Phases Combined

Animal gains for the entire pasture phase were not impressive, due to the very low winter gain. Daily gains for the fescue plots

were 0.78-, 0.80-, and 0.85-pound per day for treatments 1, 2, and 3, respectively (Table 3). There were no significant differences among

Table 3. Summary of winter and summer period—3-year average

	Treatments			
	1 F + cl.	2 F + cl. Close clip	3 F + cl. + Lesp.	4 Og + cl.
No. of animals per year	6	6	6	6
Av. wt. and gain/head, lb.				
Initial wt.	497	499	498	504
Final wt.	742	752	769	828
Total gain (Av. 316 days)	245	253	271	324
Daily gain	0.78[a]	0.80[a]	0.86[a]	1.05[b]
Av. animal grades[1] and appraisals:				
Initial feeder grade	10.1	10.5	10.3	10.4
Initial feeder value/cwt.	$26.50	$26.50	$26.67	$26.54
Final slaughter grade	6.9[a]	6.7[a]	7.1[a]	8.1[b]
Final slaughter value/cwt.	$20.86	$20.43	$20.44	$21.55
Final feeder value/cwt.	$24.00	$24.00	$24.00	$24.00
Productivity of Pastures:				
Grazing days per acre	248	238	225	264
Estimated beef gain/acre (including winter hay)	209	203	204	315
Carrying capacity, acres per steer	1.27	1.33	1.40	1.20

[a,b] Means with same superscript not significantly different (P>.05).
[1] Standard = 7.0; Good = 10.0.

them. Steers on orchardgrass-clover treatment averaged 1.05 pounds gain per day, which was significantly higher than gains of the fescue steers.

Apparently the very low winter gains did not adversely affect the performance of the cattle during the spring and summer, and in fact, may have contributed some to their good performance, as is evidenced by the very good summer gains made by the orchardgrass-clover cattle. As might be expected due to the difference in daily gain, the orchardgrass-clover cattle graded about one-third of a grade higher on a slaughter basis than the fescue cattle, which resulted in a corresponding advantage in slaughter value.

The estimated beef produced per acre was considerably higher on the orchardgrass-clover treatment than on the fescue treatments. Total beef production was about the same on the three

fescue treatments regardless of the management imposed on them.

As was previously mentioned, in only 1 year was there a distinct advantage of close-clipping or overseeding fescue with lespedeza. This was in 1961, which was an excellent pasture season that greatly favored clover growth. This indicates that it may be possible to improve the quality of fescue pastures by these means if weather conditions are favorable.

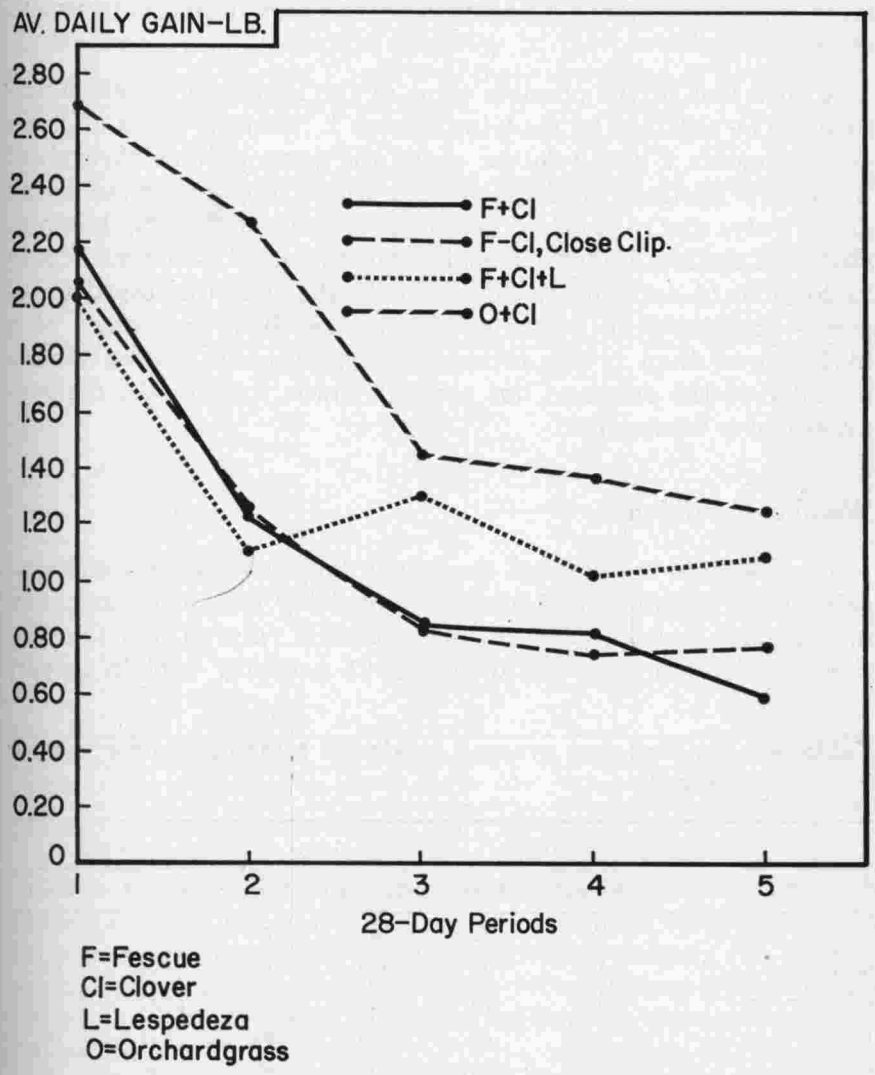

Figure. 1. Average daily gains at 28-day intervals during summer grazing season, beginning about March 27.

The grazing season imposed on these pastures may not have given the fescue-lespedeza pastures a test of their total beef-producing capabilities, since the cattle were removed for finishing when the lespedeza was at its peak. Possibly these steers should have remained on this type treatment for about 6 weeks longer and then been fed for a later market. The other pastures had reached a low state of quality and production by September and steer gains were accordingly low, so it was then desirable to remove the cattle.

A good idea of the possible value of the lespedeza in fescue pasture can be obtained by studying Figure 1. Monthly gains of steers on treatments 1 and 2 follow about the same pattern throughout the entire summer, and reach very unsatisfactory levels during June, July, and August. Treatment 3 with lespedeza, however, showed a definite improvement in gain in period 3—or about May 22 to June 19—which corresponds with the time the lespedeza becomes prominent in pastures. Gains are then maintained at a higher level than in the other fescue treatments during the remainder of the summer, but are still lower than in the orchardgrass-clover treatment.

Weather Conditions

Table 4 gives the average maximum daily temperature and total rainfall for each of the 5 months comprising the spring and summer grazing season. The uniform monthly rainfall and the relatively cooler temperatures during 1961 probably explain in part

Table 4. Rainfall and average maximum temperature for summer months

	1960		1961		1962	
	Rainfall	Temp.	Rainfall	Temp.	Rainfall	Temp.
	In.	F.	In.	F.	In.	F.
April	1.67	73	4.27	66	5.36	63
May	2.80	78	4.76	74	1.13	88
June	9.99	85	5.42	83	4.16	85
July	7.02	88	6.05	88	5.40	96
August	4.04	92	1.06	86	1.02	93

the good season for clover during this year. Also, the weather conditions during May, 1962, should be noted. The low rainfall and hot temperatures resulted in a loss of much of the legumes and a poor grazing season in general.

Species Composition of Pastures

Generally, legumes are considered very important in pastures for best production of beef. As can be seen in Table 5, in no year was there an appreciable amount of clover in the pastures comprising treatment 1, and in only 1 year was there estimated to be over 10% clover in the other fescue treatments.

Table 5. Average estimated species composition of pastures for 3 summers

		Pasture composition				
		Fescue	O. Grass	Clover	Lespedeza	Weeds
				Percent		
Tmt. 1	1960	92	2	6	—	—
	1961	93	—	7	—	—
	1962	92	—	8	—	—
Tmt. 2	1960	87	3	10	—	—
	1961	82	—	18	—	—
	1962	91	—	9	—	—
Tmt. 3[a]	1960	85	1	6	8	—
	1961	75	—	12	13	—
	1962	89	—	8	3	—
Tmt. 4	1960	—	57	37	—	6
	1961	—	64	33	—	3
	1962	—	86	12	—	2

[a] This estimate of composition is an average for the entire summer season. However, the growing season for lespedeza was included in only about the last half of the season. At the last estimate of the season, the average composition of lespedeza was 32%, 29% and 13% for 1960, 1961, and 1962, respectively.

On the other hand, there was considerable clover in the orchardgrass treatment the first 2 years, but it dropped considerably the third year. Contrary to what might be expected, the highest average daily gains obtained on the orchardgrass treatment occurred in 1962, or when the clover population was at its lowest (Appendix 2).

Lespedeza did not become prominent in treatment 3 until about midway during the grazing season, so the season estimate for

fescue-lespedeza treatment 3 given in the table is not really representative of the amount of lespedeza present during its peak. The method employed here for establishing lespedeza in the fescue sod—broadcasting and disking—was very satisfactory. The low percentage of lespedeza present in 1962 was due to a drouth shortly after the seed had germinated. The orchardgrass sods were beginning to thin and contained quite a few weeds after a period of 7 years, while the fescue sods remained very dense. It appears that the practice of grazing the orchardgrass-clover pastures during the entire winter contributes to this condition.

Table 6. Summary of dry-lot feeding period—3 year average

	Treatment			
	1	2	3	4
Days on feed	107	107	107	95
Av. wt. and gain/head, lb.				
Initial wt.	742	752	769	828
Final wt.	1025	1023	1022	1055
Total gain	283	271	253	227
Daily gain[a]	2.64	2.53	2.36	2.39
Av. daily ration				
Grain[b]	14.9	15.1	14.3	14.1
Cottonseed meal	2.0	2.0	1.9	1.9
Alfalfa-grass hay	6.0	6.5	6.0	6.1
Feed cost/head[c]	$50.07	$51.32	$48.35	$42.70
Feed cost/cwt. gain	$17.70	$18.93	$19.11	$18.81
Animal grades and values				
Initial slaughter value/cwt.	$20.86	$20.43	$20.44	$21.55
Initial feeder value/cwt.	$24.00	$24.00	$24.00	$24.00
Final slaughter value/cwt.	$24.58	$24.67	$24.69	$24.83
Initial slaughter grade	6.9	6.7	7.1	8.1
Final slaughter grade	10.1	9.7	9.9	10.8
Federal carcass grade	9.9	10.0	10.5	10.5

[a] Differences in daily gain are not significant ($P>.05$).
[b] Includes corn and/or milo in different amounts between years.
[c] Feed costs were calculated by the following ingredient cost: grain, 2¢/lb.; cottonseed meal, 4¢/lb.; hay, 1.5¢/lb.

Feedlot Period

A dry-lot grain feeding period of about 100 days was required to get the cattle up to a USDA carcass grade of average Good. Daily gains ranged from 2.36 to 2.64 pounds per head. These data are presented in Table 6.

Financial Statement

Costs and returns per steer for the different treatments are shown in Table 7. No charges for labor or land are included. Costs include establishment and maintenance of pastures, winter feed, cattle purchase, and dry-lot feed. The steers provided a positive return for both phases of the test, but except for the orchardgrass steers, the feedlot phase was more profitable than the pasture phase. The orchardgrass cattle were more profitable over-all due to their greater total gain and lower feedlot costs.

Table 7. Financial Statement. Average of 3 years (1959-1962)

	Treatment			
	1	2	3	4
	Dollars			
Pasture Phase:				
Initial cost:				
Per cwt.	26.50	26.50	26.67	26.54
Per steer	131.70	132.23	131.97	133.56
Winter hay cost per steer	17.16	17.21	17.33	17.15
Pasture cost per steer[a]	15.74	17.69	23.19	15.77
Total cost per steer	164.60	167.13	172.49	166.48
Final slaughter value per cwt.	20.86	20.43	20.44	21.55
Final feeder value per cwt.	24.00	24.00	24.00	24.00
Return per head above cost:				
As feeder steers	13.48	13.35	12.07	32.24
As slaughter steers	—9.82	—13.50	—15.31	11.95
Feedlot Phase:				
Feeder value per steer	178.08	180.48	184.56	198.72
Feed cost per steer	50.07	51.32	48.35	42.70
Final value per steer	251.94	252.37	252.33	261.96
Return per steer, above initial feeder cost and feed cost	23.79	20.57	19.42	20.54
Returns per steer for entire program	37.27	33.92	31.49	52.78

[a] Based on cost of establishment prorated over 7 years, plus maintenance, and calculated with carrying capacity based on test and extra steers.

Appendix 1. Summary of individual winter periods

	Treatment and year											
	1 Fescue + Clover			2 F + Cl. —Close Clip			3 F + Cl. + Lesp.			4 Orch. + Cl.		
	'59-'60	'60-'61	'61-'62	'59-'60	'60-'61	'61-'62	'59-'60	'60-'61	'61-'62	'59-'60	'60-'61	'61-'62
Av. wt. and gain/head, lb.												
Initial wt.	494	494	504	496	492	504	502	494	503	499	493	520
Final wt.	593	560	560	569	581	590	579	586	560	567	557	562
Total gain	99	66	56	73	89	86	77	92	57	68	64	42
Daily gain	.64	.45	.35	.47	.61	.53	.49	.63	.35	.44	.44	.26
Av. animal grades[a]												
Initial type	8.9	10.8	10.5	10.2	10.8	10.5	9.6	10.7	10.5	9.9	11.0	10.3
Initial condition	7.6	9.3	8.3	8.0	9.2	8.3	7.5	9.2	8.3	7.3	9.3	8.0
Final condition	4.7	5.2	6.3	4.5	5.5	6.8	4.8	5.5	6.7	4.3	5.5	6.7
Hay consumed/head, lb.[b]	1139	317	1109	1140	322	1105	1155	321	1118	1125	321	1126

[a] 5.0 = High Utility; 8.0 = High Standard; 10.0 = Av. Good.

[b] In addition to hay, in 1960-61, all cattle were fed 83 lb. corn and cob meal and 19 lb. cottonseed meal per head.

Appendix 2. Summary of individual summer periods

	Treatment and year											
	1 Fescue + Clover			2 F + Cl. —Close Clip			3 F + Cl. + Lesp.			4 Orch. + Cl.		
	1960	1961	1962	1960	1961	1962	1960	1961	1962	1960	1961	1962
Av. wt. and gain per head, lb.												
Final wt.	745	750	732	716	801	738	781	818	709	822	829	834
Total gain	152	190	172	147	220	148	203	232	149	255	272	272
Daily gain	0.95	1.13	1.12	0.91	1.31	0.97	1.26	1.38	0.97	1.59	1.62	1.78
Final condition grade[a]	6.3	7.0	7.3	6.3	7.0	6.9	6.7	7.2	7.4	7.7	8.3	8.2
Pasture productivity												
Grazing days per acre	173	180	111	156	174	104	127	157	111	171	219	121
Estimated beef gain per acre	188	201	124	163	228	100	161	221	109	297	359	216

[a] 7.0 = Av. Standard; 8.0 = High Standard.

Appendix 3. Summary of both grazing periods, individual years

	Treatment and year											
	1 Fescue + Clover			2 F + Cl. —Close Clip			3 F + Cl. + Lesp.			4 Orch. + Cl.		
	'59-'60	'60-'61	'61-'62	'59-'60	'60-'61	'61-'62	'59-'60	'60-'61	'61-'62	'59-'60	'60-'61	'61-'62
Av. wt. and gain per head, lb.												
Initial wt.	494	494	504	496	492	504	502	494	503	499	493	520
Final wt.	745	750	732	716	801	738	781	818	709	822	829	834
Total gain	251	256	228	220	309	234	279	324	206	323	336	314
Daily gain	.79	.81	.73	.69	.98	.75	.88	1.03	.66	1.02	1.07	1.00
Av. animal grades[a]												
Initial type	8.9	10.8	10.5	10.2	10.8	10.5	9.6	10.7	10.5	9.9	11.0	10.3
Initial condition	7.6	9.3	8.3	8.0	9.2	8.3	7.5	9.2	8.3	7.3	9.3	8.0
Final condition	6.3	7.0	7.3	6.3	7.0	6.9	6.7	7.2	7.4	7.7	8.3	8.2

[a] 5.0 = High Utility; 8.0 = High Standard; 10.0 = Av. Good.

Appendix 4. Summary of individual dry-lot feeding periods

	Previous pasture treatment and year											
	1 Fescue + Clover			2 F + Cl. —Close Clip			3 F + Cl. + Lesp.			4 Orch. + Cl.		
	1960	1961	1962	1960	1961	1962	1960	1961	1962	1960	1961	1962
Days on feed		112	84		112	84		112	84		112	50
Av. wt. and gain per head, lb.												
Final wt.	1109	1004	962	1045	1078	945	1074	1089	904	1177	1038	950
Total gain	364	254	230	319	283	207	302	271	195	333	209	115
Daily gain	2.94	2.27	2.74	2.57	2.53	2.47	2.44	2.42	2.32	2.69	1.87	2.30
Final slaughter grade[a]	9.4	11.0	10.5	8.6	10.4	10.5	8.7	10.7	10.5	10.0	11.3	10.9
U. S. D. A. carcass grade[a]	9.3	10.7	10.0	8.8	11.4	10.0	10.2	11.2	10.0	9.4	12.2	10.0
Feed cost per head	57.69	52.82	45.93	58.09	59.51	43.14	55.92	53.25	42.14	55.92	52.39	24.77
Feed cost per cwt. gain	15.84	20.80	19.97	18.21	21.03	20.84	18.51	19.65	21.61	16.79	25.07	21.54
Final value per cwt.	24.00	23.25	27.00	24.00	23.50	27.00	24.00	23.58	27.00	24.00	24.00	27.00
Return per head above steer cost and feed cost	68.78	16.89	27.56	58.40	24.48	27.51	61.56	30.37	24.69	60.54	14.35	23.23

[a] 9.0 = Low Good; 12.0 = Low Choice.

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