# CATTLE PERFORMANCE AND ECONOMIC POTENTIALS OF ALTERNATIVE STOCKER AND FINISHING PROGRAMS FOR FALL-WEANED CALVES

By

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## CHAPTER I

#### INTRODUCTION

In an effort to obtain greater returns to apply against increasing cow maintenance costs, cow-calf producers may elect to retain ownership of their weaned calves through the stocker and possibly feedlot phases of production. If sound economic decisions are to be made, specific questions relative to alternative beef production systems must be addressed. Cattle performance on optional stocker programs and its effect on subsequent feedlot performance are key considerations.

In areas where clean-tilled wheat pasture has traditionally been used to winter fall-weaned calves, grazing costs have been steadily increasing (10 to 15% per year). An alternative stocker program for producers who do not have wheat pasture available to them and do not want to rent wheat pasture would be to retain stocker cattle on bermudagrass pastures and feed bermudagrass hay.

Bermudagrass hay harvested at an early stage of growth (May and June) would be of high quality (McCroskey <u>et al.</u>, 1968), but digestibility and crude protein of bermudagrass declines rapidly with advancing maturity (Wilson <u>et al.</u>, 1977). Feeding high quality bermudagrass provides a means of carrying stocker cattle, while producing substantial gains (Hart <u>et al.</u>, 1976).

When hay quality is low, however, which is often the case, producers often elect to maintain stocker cattle on a lower plane of

nutrition by feeding this hay, with a minimum of additional supplementation. It is generally expected that cattle carried through a prolonged period on a low plane of nutrition (near maintenance levels) will make compensatory gains when placed on a higher level of nutrition. Therefore, weight loses of stockers incurred during the period on the low plane of nutrition would be recovered. However, the extent of the recovery of weight gains and economic losses incurred during the maintenance period should be considered by producers before choosing this production alternative.

Grazing stocker cattle on small grains-interseeded bermudagrass pastures is another alternative. Although winter grazing may be limited, derived benefits would be the extension of an existing stocker program. Forage dry matter production (metric tons/hectare) of rye grass interseeded Coastal bermudagrass pastures was very similar during March and April to that of ryegrass grown on clean-tilled land (Utley <u>et al.</u>, 1976), and attests to the forage production potential of interseeded bermudagrass pastures.

Finishing cattle by feeding grain on pasture is a frequently suggested alternative beef production system (McClaugherty <u>et al.</u>, 1975; Utley and McCormick, 1976; Lowrey <u>et al.</u>, 1976a; Lowrey <u>et al.</u>, 1976b; McCampbell <u>et al.</u>, 1976; Burris <u>et al.</u>, 1976; Spooner and Ray, 1977). However, in many studies where grain has been fed to cattle on grass, the experimental design was such that total feed intake per kg of body weight gain could not be partitioned into forage and grain components. Since the contribution of forage to beef weight gains was not taken into account, feed efficiencies (kg feed per kg gain) were not accurately determined.

## CHAPTER II

## **REVIEW OF LITERATURE**

Forage Quality and Performance of Steers on Forage Programs

### Small Grains

Wyatt (1977) reported that small grains forage provides an excellent source of nutrients for cattle, and usually contains 25 to 30% crude protein and 65 to 75% TDN on a dry matter basis. Under dry land conditions, forage yields of 2240 to 5600 kg of dry matter per hectare are common with production potentials of 224 to 560 kg of beef per hectare.

Gains of cattle on small grains forage are usually excellent. Boomer (1972) reported average daily gains of steers of 1 kg per day with continuous grazing during a 4 year study. Elder (1967) and Horn <u>et al</u>. (1974) reported average daily gains of steers on wheat pasture ranging from .59 to .75 kg. Daily gains of 1.11 kg per head per day for steers grazing oat pasture stocked at 2.5 head per hectare were reported by Gulbransen (1976).

## Harvested Hay

Average daily gains of steers fed various types of hay are shown in Table 1. In studies comparing different types of roughages fed to

Туре	Form fed <sup>a</sup>	Daily gain, kg	References
<u>Alfalfa</u>	P/Gd-dehy <sup>b</sup> P/Gd-hay <sup>b</sup> Pellet <sup>c</sup> Ground-dehy.	1.06 1.01 .88 .71 .59 .19	Dinius <u>et al</u> ., 1978 Dinius <u>et al</u> ., 1978 Dinius <u>et al</u> ., 1975 Dinius <u>et al</u> ., 1975 Baird <u>et al</u> ., 1958 Baird <u>et al</u> ., 1958
<u>Bermudagrass</u>	Pellet Pellet Greenchop Pellet Pellet	.69 .87 .37 .67 .80 .91 .24 .33 .12	Utley <u>et al.</u> , 1978 Utley <u>et al</u> ., 1978 Hart <u>et al</u> ., 1976 Hart <u>et al</u> ., 1976 Hart <u>et al</u> ., 1976 Beaty <u>et al</u> ., 1969 McCormick <u>et al</u> ., 1967 Baird <u>et al</u> ., 1958 Baird <u>et al</u> ., 1958
Other Bahiagrass Orchardgrass Clover-timothy Alfalfa-brome Bahiagrass Bahiagrass Timothy-fescue Ryegrass Lespedeza Peanut hay Soybean hay Oat hay Lespedeza Lespedeza	Pellet Ground <sup>C</sup> Pellet Pellet Chopped-dry	.79 .56 .92 .56 .50 .84 .59 .88 .13 .37 .34 .52 .15 .15	Utley <u>et al.</u> , 1978 Dinius <u>et al.</u> , 1978 Dinius <u>et al.</u> , 1975 El Serafy <u>et al.</u> , 1975 El Serafy <u>et al.</u> , 1967 Beaty <u>et al.</u> , 1969 Forbes and Irwin, 1968 Kay <u>et al.</u> , 1971 Baird <u>et al.</u> , 1958 Baird <u>et al.</u> , 1958

TABLE 1. DAILY GAINS OF STEERS FED HARVESTED HAY

<sup>a</sup>Dry-cured hay, unless otherwise specified.

 $^{b}$ P/Gd = Pelleted and/or ground; Daily gain reflects mean of pelleted and ground dehy or hay fed treatments.

<sup>C</sup>Sun-cured processed hay.

steers, alfalfa hay has generally produced the best overall average daily gains. In studies conducted by Dinius <u>et al</u>. (1978) chopped and pelleted dehydrated alfalfa and hay produced steer average daily gains of 1.06 and 1.01 kg, respectively, whereas average daily gains of only .56 kg were obtained with ground orchardgrass. Baird <u>et al</u>. (1958) reported average daily gains of .59, .13, .33, .37, .34 and .52 kg for stockers fed alfalfa, Sericea lespedeza, Coastal bermudagrass, peanut, soybean and oat hays, respectively. In a similar study Baird <u>et al</u>. (1958) obtained average daily gains of .19, .15, .12 and .15 kg from stockers fed alfalfa, Kobe lespedeza, Coastal bermudagrass and Sericea lespedeza, respectively.

Dinius <u>et al</u>. (1975), however, obtained superior steer performance from a roughage source other than alfalfa. Average daily gains of .92, .88 and .71 kg were obtained from steers fed pelleted clover-timothy, pelleted alfalfa hay and ground dehydrated alfalfa hay, respectively.

Another roughage which shows potential as a feed for stocker cattle is bermudagrass hay. Although bermudagrass loses quality rather rapidly with advancing maturity, crude protein levels above 12% and digestibilities around 60% can be expected with proper management. Using the chemical composition data of McCroskey <u>et al</u>. (1968) for Midland bermudagrass, the "index of availability" of VanSoest and Moore (1965), and the regression equation (Auburn University; Forage Testing Program) to estimate the TDN and digestible protein content of May and June harvested bermudagrass, average daily gains of approximately .68 kg for 200 kg calves fed high-quality bermudagrass hay appear possible.

Utley <u>et al</u>. (1978) harvested Coastal bermudagrass , Coastcross-1 bermudagrass and Pensacola bahiagrass at 4- and 8-week intervals.

<u>In vitro</u> dry matter digestibilities and crude protein concentrations averaged 61.34% and 16.68% at the 4-week interval and 52.78% and 12.4% at the 8-week harvest interval, respectively. Steer average daily gains (Table 1) for the Coastal bermudagrass, Coastcross-1 bermudagrass and bahiagrass were .69, .87 and .79 kg, respectively. All forage, however, was dehydrated and pelleted, thereby possibly enhancing intake.

In studies conducted by Hart <u>et al.</u> (1976) Coastal bermudagrass was fed to steers as greenchop, cured hay and pellets. Average daily gains were .37, .67 and .80 kg, respectively. Beaty <u>et al.</u> (1969) reported average daily gains of .91 and .84 kg of steers fed pelleted Coastal bermudagrass and Pensacola bahiagrass, respectively. However, in studies conducted by McCormick <u>et al.</u> (1967) average daily gains were greater (.50 vs .24 kg) for steers fed Pensacola bahiagrass.

Baird <u>et al</u>. (1958) also found bermudagrass hay inferior to most other hays as a roughage for growing stocker steers (Table 1). However, the quality of hay as effected by stage of maturity at harvest may have greatly influenced average daily gains.

Other harvested hays that have produced excellent steer gains as reported by El Serafy <u>et al</u>. (1974), Forbes and Irwin (1968) and Kay <u>et al</u>. (1971) are shown in Table 1.

#### Overseeded Bermudagrass Pastures

Seeding annual forages into perennial sod provides an opportunity to extend the normal grazing season as well as increase forage and livestock production. In studies conducted by McMurphy and Tucker (1974), steers began grazing rye and wheat overseeded into bermudagrass in February. Harris et al. (1972) obtained 40 to 50 more grazing days and 560 kg extra beef gain per hectare by overseeding vetch or rye into Coastal bermudagrass.

Steer gains per hectare were nearly doubled and the grazing season was extended 3 months in studies conducted by Hoveland <u>et al</u>. (1978) in which Coastal bermudagrass was overseeded with rye and clover.

Utley <u>et al</u>. (1976) compared gains of steers grazed on cool-season annual forage (ryegrass and oats) on prepared seedbeds or overseeded into bermudagrass pastures. Gains were .07 kg per day greater (1.12 <u>versus</u> 1.05) for steers grazed on the overseeded pastures. However, twice as much total steer gain and nearly twice as much forage was produced per hectare on prepared seedbeds during the period from December to April. Utley <u>et al</u>. (1977) concluded that overseeding pastures in October reduced the grazing season 30 to 45 days when compared to prepared seedbed pastures, which are normally seeded earlier. L. I. Croy (personal communication) stated that, in order to obtain adequate winter stands of small grains overseeded in bermudagrass pastures, seeding must be done at later dates to avoid bermudagrass competition for nutrients. For this reason fall and winter grazing of overseeded bermudagrass has generally been very limited to date.

#### Bermudagrass Pastures

Good stocker gains are obtainable from bermudagrass pastures. Production data for stocker cattle grazed on Coastal bermudagrass at the North Louisiana Hill Farm Experiment Station from 1971 to 1976 show ranges in average daily gain, stocking rate and total gain per hectare of .26 to .88 kg, 3.5 to 12.4 head per hectare and 233 to 990 kg per hectare, respectively. The overall average daily gain was .79 kg. Oliver (1973) obtained average daily gains of .68 kg from stocker

steers during a 148-day period beginning in April.

Utley (1976) reported average daily steer gains of .64 and .72 kg and total gain per hectare of 553 and 598 kg from Coastal and Coastcross-1 bermudagrass pastures, respectively.

Although forage quality and forage intake decline during the later part of the bermudagrass growing season (Telford <u>et al.</u>, 1974; Wilson <u>et al.</u>, 1977), with intensive management some of these problems may be overcome. In a six-year study conducted by Oliver (1978), Coastal bermudagrass pastures were stocked with yearlings and spring-weaned calves at rates of 3.5 to 12.4 head per hectare. Increased levels of fertility were required with increasing stocking rates. Total gains of yearlings and spring-weaned calves increased with increasing stocking rates, in a linear fashion from 430 to 991 kg per hectare and 233 to 834 kg per hectare, respectively.

For proper bermudagrass pasture utilization in stocker programs, it is recommended to begin grazing when forage is 2 to 3 inches tall, use a stocking rate of 7.4 to 12.4 head per hectare and remove any surplus matured forage (Oliver et al., 1978).

## Carcass Compositional Changes

## in Stocker Cattle

Guenther <u>et al</u>. (1965) found that lean to fat ratios declined with steer maturity, and that steers fed on different planes of nutrition to the same weights tended to produce similar total gains of fat and lean.

In studies conducted by Lofgreen <u>et al</u>. (1963), heifers fed alfalfa hay at maintenance, intermediate and <u>ad libitum</u> levels displayed changes in percent empty body fat and protein of .3 and 0.0, 2.9 and -0.1, and 6.8 and -0.3, respectively. The maintenance group showed an empty body and protein loss of 5.9 and 1.1 kg, respectively, while fat content was increased by .05 kg. In this study the specific gravity technique was used to estimate empty body fat and protein which ranged from 10.9 to 17.7% and 18.9 to 19.2%, respectively.

Hull <u>et al</u>. (1969), also using the specific gravity technique, predicted a range in percent carcass fat and protein of 19.3 to 22.6 and 16.8 to 17.6, respectively for steers grazing at varying frequencies on irrigated orchardgrass, ryegrass, and clover pastures. They reported that the amount of protein gain per day was related to protein intake since carcass protein content decreased with decreasing protein intake. However, regression analysis was not conducted to further examine the relationship. They further reported that differences in body fat gain due to treatment were not as great as differences in body protein gain. They speculated that this may have been due to some of the fat gain being broken down to meet other body requirements when protein intake is inadequate.

In contrast, the loss of protein while gaining fat which was reported by Lofgreen <u>et al</u>. (1963) for cattle receiving a maintenance ration, was also reported by Hull et al. (1969).

Although the aforementioned speculation and observations may be real, the specific gravity technique may be incapable of accurately determining carcass composition in the type of cattle used in these studies. In the study reported by Hull <u>et al</u>. (1969) the average empty body weight of the initial slaughter group was approximately 250 kg which is well below the average empty body weight of steers used by Garrett and Hinman (1969) of 325 + 57.0 kg to derive the body composition

equations used by Hull et al. (1969).

In the study reported by Lofgreen <u>et al</u>. (1963), in which the empty body composition of steers was around 10% fat, specific gravity techniques may have also failed to accurately predict carcass composition. It should be noted that in the study by Garrett and Hinman (1969) it was found that the percent fat in the empty body was similar to the percent fat in the carcass.

Garrett and Hinman (1969) and Gil <u>et al</u>. (1970) indicated that specific gravity is less accurate than physical separation in estimating composition in carcasses containing less than 12% fat. In studies conducted by Kelly <u>et al</u>. (1968) specific gravities were determined on the edible portion (lean plus fat) of carcasses. They obtained the highest correlations between density and composition when steer carcasses contained over 40% fat, but found when fat made up less than 20% of the carcass specific gravity was not high correlated to composition. At this level of fat composition the correlation coefficients for fat and protein were -.20 and .16 (P>.05), respectively.

## Compensatory Gain

Compensatory gain has been defined by Wilson and Osburn (1960) as the ability of an animal, previously restricted in growth, to resume growth at a rate greater than that normal for animals of the same age. Peacock <u>et al</u>. (1964) and Nichols and Lesperance (1975) reported greater than normal spring and summer daily gains from cattle gaining less than .35 kg per day during the previous winter.

Lake <u>et al</u>. (1974b) and Coleman <u>et al</u>. (1976), on the other hand, reported that no compensatory gain was seen in cattle previously gaining

greater than .38 kg per day. Although daily gains of .38 kg may be too great to develop cattle which will exhibit compensatory gains, the exact daily gain under which compensatory gain potential is developed in cattle is not clear. According to Wilson and Osbourn (1960) compensatory gain depends on several factors. Among these are the degree or severity and duration of undernutrition, the stage of development of the body at the commencement of undernutrition, and the pattern of re-alimentation.

Cattle exhibiting compensatory gain will display greater than normal feed intakes during re-alimentation (Meyer and Clawson, 1964; Meyer <u>et al.</u>, 1965; Fox <u>et al.</u>, 1972). Upon refeeding, they fail to attain the same final weight as contemporary cattle fed normally (Fox <u>et al.</u>, 1972; Horton and Holmes, 1978). Animals exhibiting compensatory growth deposit more protein and less fat during the early period of re-alimentation, but deposit relatively more fat during the latter part of the feeding period (Meyer <u>et al.</u>, 1965; Fox <u>et al.</u>, 1972; Dockerty <u>et al.</u>, 1973).

Increased efficiency of protein and energy utilization during the full feeding period is largely responsible for compensatory gains (Meyer and Clawson, 1964; Fox <u>et al.</u>, 1972; Asplund <u>et al.</u>, 1975). Actual digestibility of feedstuffs may be unaffected (Horton and Holmes, 1978; Asplund <u>et al.</u>, 1975).

#### Grain on Grass

In recent years feeding grain on grass has been extensively studied. Berry <u>et al</u>. (1975) described advantages and disadvantages of utilizing more grass and less grain in finishing programs. As producers begin

to utilize grass-grain systems in finishing cattle, specific questions, as follows, concerning the various systems available must be addressed:

 What is the rate of substitution of grain for grass in grassgrain systems?

2. What is the effect of forage quality on grain intake?

3. To what extent can stocking rates be increased by feeding grain on grass?

4. Should cattle be ad libitum or limit-fed grain?

5. Should complete rations or grain alone be fed?

6. What is the efficiency of grain utilization in grass-grain production systems?

#### Rate of Substitution of Grain for

### <u>Grass in Grass-Grain Systems</u>

Forbes <u>et al</u>. (1966), Forbes <u>et al</u>. (1967) and Tayler and Wilkinson (1972) reported a linear decrease in grass dry matter intake with increased dry matter intakes of barley or barley-protein supplement mixtures. However, the decline in intake of grass was less than the consumption of barley, which resulted in an overall increase in total dry matter intake. The rate of decline in grass intake ranged from .6 to 1.02 kg per kg of barley fed. Reasons why total dry matter intake was increased with grain feeding was not fully discussed by any of the above authors. However, Tayler and Wilkinson (1972) observed that gut fill was substantially reduced as the level of concentrate in the diet increased, indicating that a faster rate of passage existed with concentrate feeding, thereby, allowing for greater intakes.

In another study, Blaxter and Wilson (1963) fed concentrates to sheep, and found that at low levels of concentrate intake (one-third of total intake) the decline in hay intake was greatest for the highest quality hay and was equal to the amount of concentrate consumed. Lake (1974a) also reported a decrease in grass (fresh forage) consumption, approximately equal to the intake of grains in studies utilizing irrigated pastures.

It would appear that with high-quality forages the decline in grass consumption approaches the amount of grain consumed. Whereas, with forages of lower quality, the rate of decline is less than the amount of grain consumed.

## Effect of Forage Quality on Grain Intake

<u>High-Quality Forage</u>. Lowrey <u>et al</u>. (1976a), Lowrey <u>et al</u>. (1976b) and McCampbell <u>et al</u>. (1976) reported grain consumption averaging around 3.6 kg per head per day for steers which grazed rye, wheat and/or ryegrass winter pastures. Utley and McCormick (1976) reported grain consumption of 5.9 kg per head per day by steers fed corn and grain sorghum on rye pastures. Clanton (1977) reported corn consumption as high as 7.36 kg per head per day by steers that grazed irrigated pastures; whereas Spooner and Ray (1978) reported grain consumption of over 9 kg per head per day on high-quality bermudagrass-clover and fescue-clover pastures. Spooner and Ray (1978) concluded that a key to feeding grain on pasture is to make maximum use of forage when it is highest in quality and that utilizing pastures of poorer quality will be reflected in decreased average daily gains.

Elder (1967) reported that, even though good small grains forage was always available for stockers, daily grain consumption was high (4.5 kg) during some months of the grazing period, but were noted to be very low during the month of April when gains were high.

The above data are inconclusive regarding anticipated levels of grain intake when feeding grain <u>ad libitum</u> on high-quality pastures. Many unknown factors may be involved in determining the level of grain intake. The physiological status of the plant, type of grain or grain mixture fed and individual animal preferences are but a few of these factors.

<u>Moderate- to Low-Quality Forage</u>. The previous section which describes the substitution rate of grain for grass also describes the general pattern seen when increasing levels of grain are fed on moderateto low-quality pastures. In general, forage intake decreased with increasing grain intakes. Godbey <u>et al</u>. (1959) reported similar trends (increased grain intake and decreased forage intake) when forage palatability deteriorated.

Anticipated levels of grain intake, particularly on moderate- to low-quality grass, may be as high as 75% of the total dry matter intake and 85% of the intake seen in drylot cattle (Tayler and Wilkinson, 1972).

## The Extent Which Stocking Rates Can Be

#### <u>Changed by Feeding Grain on Grass</u>

Lowrey <u>et al</u>. (1976a), Lowrey <u>et al</u>. (1976b), McCampbell <u>et al</u>. (1976) and Utley and McCormick (1976) fed grain <u>ad libitum</u> to steers on small grains pastures and were able to double stocking rates over

non grain-fed groups. Gulbransen (1976) reported near linear increases in grain consumption from 2.9 to 6.5 kg per head per day with successive increases in stocking rates from 2.5 to 12.5 head per hectare. In studies conducted by Mott <u>et al</u>. (1968) carrying capacities were increased by 75% and total beef production per hectare was more than doubled by feeding grain ad libitum on grass.

In general, when feeding grain on grass with moderate stocking rates, forage intake is not influenced by stocking rate (Tayler and Wilkinson, 1972). But, under <u>ad libitum</u> feeding conditions stocking rates may need to be increased to very high levels (>10 head per hectare) to insure maximum forage utilization. Under limit-feeding conditions stocking rates will vary and need to be adjusted according to the rate of substitution of grain for grass.

## Ad Libitum Grain Feeding on Grass

Grain consumption of cattle fed <u>ad libitum</u> on grass, as discussed earlier, has been extremely variable, particularly if the forage quality is very high. However, daily gains have generally been less than drylot <u>ad libitum</u>-fed steers (Roark <u>et al</u>., 1966; Utley and McCormick, 1976; Schupp <u>et al</u>., 1976). Carcasses of cattle finished on grain-grass systems tend to grade lower and display traces of yellow fat while having a higher cutability (less fat) than carcasses of feedlot fed cattle (Berry et al., 1975).

Clanton (1977) concluded that full feeding cattle on pasture did not take less grain or lower the cost of gains unless it was associated with less labor, less protein supplement or less overhead; and,

therefore, had little advantage over full feeding cattle in drylot. However, others (McClaugnerty <u>et al.</u>, 1975; Utley and McCormick, 1975; Spooner and Ray, 1977) comparing drylot and/or grass only systems to grain-grass systems reported optimal performance and/or returns for steers self-fed grain on grass.

From several experiments where the response to feeding grain on grass had been small and uneconomical, Tayler and Wilkinson (1972) surmised that, due to low stocking rates, cattle always had more forage available than they could eat. Therefore, the amount of grass replaced by grain increased (forage utilization decreased) as forage quality decreased. By adjusting stocker rates so that comparable sward status was maintained for non-fed, limit-fed and full-fed treatment groups, Mott <u>et al</u>. (1968) and Gulbransen (1975) obtained optimum steer gains per head and per hectare from full-fed groups. By maintaining pastures of the highest quality forage, such as done in these studies, Spooner and Ray (1978) reported average daily gains from steers fed grain on fescue-clover pastures that were greater than average daily gains of drylot fed cattle (1.42 vs. 1.37 kg).

#### Limited Grain Feeding on Grass

Lake <u>et al</u>. (1974b), Coleman <u>et al</u>. (1976) and Embry (1976) obtained linear increases in average daily gains with each increment increase in grain fed to cattle. Coleman <u>et al</u>. (1976) and Denham (1977) reported that the first increment of supplementation gave the greatest response in daily gains, with each additional increment yielding smaller increases in daily gain.

Lake <u>et al</u>. (1974b) found that daily gains of steers supplemented above 1.82 kg of corn per head per day on irrigated pastures were not increased, and suggested that 1.82 kg of corn may be near the maximum amount of supplemental energy justifiable. Embry (1976) arrived at similar conclusions from studies in which corn was fed to heifers on alfalfa-grass pastures. While these studies were conducted with pastures containing relatively high-quality forage, when forage quality is limited greater amounts of supplemental energy may be warranted.

#### Complete Rations Versus Feeding Only Grain

#### <u>on Grass</u>

Roark <u>et al</u>. (1966) fed a mixed ration of corn and cottonseed meal to steers in drylot and to steers grazing wheat and rye pastures and obtained average daily gains of 1.06, .97 and .91 kg from full-fed (drylot), grass-grain fed and non grain-fed groups, respectively.

In studies conducted by Coleman <u>et al</u>. (1975) average daily gains of steers grazing St. Augustine grass were increased from .37 to .67 kg per head per day when a supplement of corn, citrus pulp, cottonseed meal and minerals was fed from 0 to 4.5 kg per head per day. Tayler and Wilkinson (1972) produced empty body weight average daily gains on ryegrass pastures nearly identical to drylot gains (1.36 vs. 1.38 kg for period 1 and 1.26 and 1.29 kg for period 2) with a concentrate mixture of barley, fish meal, soybean meal, molasses, minerals and vitamins.

Most studies conducted relative to feeding grain on grass utilized grain only. Godbey <u>et al</u>. (1959) reported no significant differences in daily gains of steers on grass fed corn, milo, barley and wheat,

individually or in mixtures. Utley and McCormick (1976) obtained similar average daily gains on grass supplemented with corn or grain sorghum.

Although, many other studies have been conducted where only grain was fed on grass, Lake <u>et al.</u> (1974b), limit-fed corn to steers on irrigated pastures of orchardgrass, bromegrass and alfalfa mixtures and reported improved forage nitrogen utilization over non-corn fed groups but determined that an imbalance of protein and energy existed which may have prevented maximum animal performance. Clanton (1977), on the other hand, reported a decrease in animal performance due to lack of protein and/or calcium, when feeding corn <u>ad libitum</u> on irrigated pastures.

From these studies, it would appear that under limit grain feeding conditions, deficiencies in energy prevented maximum animal performance, although this deficiency would decline with increased levels of grain.

Under <u>ad libitum</u> grain feeding conditions a protein and/or mineral deficiency may exist. Therefore, complete rations formulated according to expected levels of forage intake and possible deficiencies would provide for both increased gains and better forage utilization.

#### Efficiency of Grain Utilization

#### on Grass

Feed efficiencies (kg of grain per kg of gain) of cattle fed grain on grass have been calculated by several methods. Embry (1976) reported efficiencies of 2.6, 4.7 and 6.4 from corn intakes of 1.75, 3.44 and 6.3 kg (full-fed), respectively, by steers on alfalfa-grass pastures. Spooner and Ray (1978) reported feed efficiencies from 5.5

to 8.0 for steers fed grain on bermudagrass-clover pastures. In these studies, calculated feed efficiencies attribute total weight gain to grain consumption and fail to account for the contribution of forage to beef weight gain. Efficiencies calculated by this method are overestimated and will approach zero at low levels of grain intake.

Denham (1977) reported feed efficiency as kg of grain per kg of increased gain over non grain-fed (grass only) controls. This method greatly under-estimates feed efficiency, since it fails to take into account the reduction in forage consumption due to grain intake.

Elder (1967) and Elder and Tucker (1968) utilized the previously reported method to calculate feed efficiency, but also assessed the increase in carrying capacity afforded by feeding grain on pasture. This was measured in terms of steer grazing days per hectare. Feed efficiency was then determined by dividing the total grain consumed per hectare by the increase in beef gain per hectare. Assuming equal grazing pressure in both grain-fed and non-fed groups, the amount of grain fed per hectare would accurately account for the increase in beef gain per hectare due to feeding grain on pasture.

With this method of computing efficiency, Elder and Tucker (1968) reported conversion rates of 8.7 kg of grain per kg of increased gain per hectare for steers limit-fed corn or grain sorghum on small grain pastures and limit-fed on Common bermudagrass pastures. Stocking rates had been increased by approximately 25% per hectare.

Mott <u>et al</u>. (1968) utilizing the put and take method to maintain uniform sward status, regressed total grain fed per steer on total gain per steer, grain fed per hectare on steer days per hectare, and grain fed per hectare on total gain per hectare. The highest correlation (r=.997)

was obtained by regressing grain fed per hectare on total gain per hectare.

Feed efficiencies calculated as grain fed per steer per day divided by gain per steer per day ranged from 2.6 to 6.3 for the ten pasture-grain treatment combinations of this study. Feed efficiencies calculated as grain fed per steer per day divided by the increase in daily gain due to grain ranged from 7.6 to 9.7. Feed efficiencies calculated as grain fed per hectare divided by the increase in gain per hectare over the non-fed treatment ranged from 6.7 to 7.4. In all methods of calculating feed efficiency, the best (lowest value) efficiency was obtained with steers receiving the lowest levels of grain. Also, the quantity of grain required for each kg of gain increased with successive increments of grain.

Although these methods of calculating feed efficiency display the same trend, calculating efficiency by dividing grain fed per hectare by the increase in gain per hectare (Elder and Tucker, 1963; Mott <u>et al.</u>, 1968) provides the most accurate estimate of feed efficiency and allows estimates of the contributions of grain and forage to beef weight gains to be made.

By knowing the contributions of forage and grain to beef weight gains, a more accurate evaluation of the grain-grass system is obtained. Because many studies have not been designed to partition these contributions, a poor assessment of the grain-grass production system under study has often been obtained.

## CHAPTER III

CATTLE PERFORMANCE AND ECONOMIC POTENTIALS OF ALTERNATIVE STOCKER AND FINISHING PROGRAMS FOR FALL-WEANED CALVES

#### Summary

Studies were conducted over a two-year period to compare live and carcass weight gains and feed efficiencies of fall-weaned calves (1) placed directly in the feedlot or (2) carried as stockers on wheat pasture or bermudagrass hay before being finished by feeding grain on small grains-interseeded bermudagrass (SG/B) pastures or by <u>ad libitum</u> feeding in the feedlot. Steers from each of the two stocker programs were also grazed to heavier weights on SG/B pastures for approximately 60 days before being finished in the feedlot.

Live and carcass weight gains of steers grazed on wheat pasture were .85 and .56 kg per day, respectively, in the first year and .52 and .41 kg per day, respectively, in the second year. Live weight gains of steers fed bermudagrass hay were 0 and .18 kg per day for the first and second years, respectively, whereas, carcass weight gains were -.08 and .07 kg per day, respectively. During the finishing phase, steers previously fed bermudagrass hay clearly exhibited compensatory gains in the first year of the study. However, in the second year compensatory gains were not as apparent, since steers from

the wheat pasture stocker program initially out gained steers that had previously been fed bermudagrass hay during the stocker phase. In both years, feed consumption of steers finished by feeding grain on pasture was high; approximately 80 percent of that of paired feedlot, <u>ad libitum</u>-fed groups. The contribution of forage to weight gains of steers fed grain on grass was minimal. Of all steers finished in the feedlot, daily gains of steers initially placed in the feedlot were the lowest; however, feed efficiencies were better for the initial feedlot steers.

Enterprise budgets were developed for each production system. In general, grazing steers for 60 days on SG/B pastures or throughout the summer on SG/B pastures resulted in the greatest returns and in most cases paid all production costs and residual return to the producer. Returns of steers stockered on bermudagrass hay and subsequent finishing systems were less than those of similar systems where steers grazed wheat pasture during the stocker phase.

Retaining ownership of stocker cattle through the feedlot after grazing wheat pasture and/or spring SG/B pastures did not add to returns. Break-even analysis of the all-forage production systems indicated that non-feed costs are consistently greater than feed (primarily pasture and hay) costs. Mean break-even average daily gains of steers from the all-forage production systems for a producer who must pay all operating, capital, ownership and labor costs were .68 and .39 kg in the first year and .69 and .52 kg in the second year for steers of the wheat pasture and bermudagrass hay production systems, respectively. For the producer who has excess hay, pasture, machinery and equipment, and labor, mean break-even average daily gains were .39

and .22 kg in the first year and .41 and .30 kg in the second year for steers from the wheat pasture and bermudagrass hay stocker programs, respectively.

## Introduction

In an effort to obtain greater returns to apply against increasing cow maintenance costs, cow-calf producers may elect to retain ownership of their weaned calves through the stocker and possibly feedlot phase of production. If sound economic decisions are to be made specific questions relative to alternative beef production systems must be addressed. Cattle performance on optional stocker programs and its effect on subsequent feedlot performance are key considerations.

In areas where clean-tilled wheat pasture has traditionally been used to winter fall-weaned calves, grazing costs have been steadily increasing (10 to 15% per year). An alternative stocker program for producers who do not have wheat pasture available to them and do not want to rent wheat pasture would be to retain stocker cattle on bermudagrass pastures and feed bermudagrass hay.

Bermudagrass hay harvested at an early stage of growth will produce substantial steer daily gains (Hart <u>et al.</u>, 1976). However, hay harvested at advanced stages of maturity and fed to stocker cattle will limit gains. Producers choosing a production alternative of this nature will recover a portion of the weight and economic loses incurred by the steers on the low plane of nutrition as compensatory gain when the steers are placed on a higher level of nutrition. The extent of this recovery needs to be assessed, however.

Grazing stocker cattle on small grains-interseeded bermudagrass

pastures is another alternative. Although, winter grazing may be limited, derived benefits would be the extension of an existing stocker program.

Finishing cattle by feeding grain on pasture is a frequently suggested alternative beef production system (McClaugherty <u>et al.</u>, 1975; Utley and McCormick, 1976; Lowrey <u>et al.</u>, 1976a; Lowrey <u>et al.</u>, 1976b; McCampbell <u>et al.</u>, 1976; Burris <u>et al.</u>, 1976; Spooner and Ray, 1977). However, in many studies where grain has been fed to cattle on grass, the experimental design was such that total feed intake per kg of body weight gain could not be partitioned into forage and grain components. Therefore, feed efficiencies (kg feed per kg gain) were not accurately determined.

The objectives of the studies reported herein were to:

 Compare live and carcass weight gains of fall-weaned steer calves placed (1) directly in the feedlot or (2) on the following two stocker programs.

A. Grazed on clean-tilled wheat pasture.

B. Held on dormant bermudagrass pastures and fed bermudagrass hay ad libitum.

2. Compare the performance of steers from the above two stocker programs when grazed to heavier weights on small grains-interseeded bermudagrass pastures before being finished in feedlot.

3. Determine the relative energy contributions from forage and grain to weight gains of steers fed grain <u>ad libitum</u> on small grains-interseeded bermudagrass pastures.

4. Develop enterprise budgets for each beef production system.

#### Experimental Procedure

The studies were conducted over a two-year period; similar experimental procedures were utilized each year.

#### Cattle

One-hundred and thirty-one (131; 1976-77) and 113 (1977-78) fall-weaned Hereford X Angus steer calves were purchased through an order buyer. After being carried through a receiving program of about 3 weeks, during which the calves grazed native tall grass pastures, the calves were randomly allotted to the treatment groups shown in Figure 1.

#### Initial Feedlot Group

In the first year 6 pens of steers (2 steers/pen) were placed in the feedlot and fed from November 16, 1976 to April 28, 1977 (163 days). In the second year 4 pens of steers (3 steers/pen) were placed in the feedlot from November 9, 1977 to May 22, 1978 (194 days). The steers were fed <u>ad libitum</u> a finishing ration of whole shelled corn, cottonseed hulls, and supplement. The ration contained 40 percent cottonseed hulls initially, and corn was substituted for hulls at a rate of about 1 percent per day until the steers were on a ration of 87 percent whole shelled corn, 5 percent cottonseed hulls, and 8 percent supplement. The supplement contained 60 percent crude protein on an as-fed basis and contained: (%) soybean meal, 70.3; urea, 10.1; calcium carbonate, 7.5; salt, 4.5; wheat middlings, 3.5; potassium chloride, 3.3; trace minerals, .4; vitamin A (30,000 IU/g), .3; Aurofac 50, .1.



\*SG/B = Small grains-interseeded bermudagrass pastures.

Figure 1. Steer treatment groups

## Stocker Phase

One-hundred and twelve (112) of the remaining steers in the first year and 94 of the remaining steers in the second year were allotted to 2 groups and placed on either (1) wheat pasture or (2) a dormant bermudagrass pasture and fed bermudagrass hay <u>ad libitum</u>, from November 17, 1976 to March 16, 1977, the first year, and November 9, 1977 to March 29, 1978, the second year. Core samples of about one-third of the bales of hay fed were taken weekly for crude protein and <u>in vitro</u> dry matter digestibility (IVDMD) determinations. A mineral mix consisting of 64% dicalcium phosphate, 31% trace-mineralized salt, and 5% cottonseed meal was fed free-choice to each group of steers. Due to the poor quality of hay, the steers on bermudagrass pasture were fed .90 kg of cottonseed cake per head per day for the last 20 days of the stocker phase in the first year.

Initial (7 steers) and intermittent slaughter groups (4 steers/ stocker group) were killed at the Oklahoma State University Meat Laboratory immediately prior to and after the stocker phase so that carcass weight gains and changes in carcass composition could be measured. Carcass density was determined on the right side of each carcass (Garrett and Hinman, 1969). The right sides were then physically separated into fat, lean and bone. The weight of these components were multiplied by 2 to obtain estimates of total carcass fat, lean and bone. Brungardt and Bray (1963) have shown that there were essentially no differences in carcass fat, lean and bone content of right and left sides of beef carcasses.

The quantity of fat-free lean was determined for each carcass from the separable lean portion. Grinding, mixing and sampling
procedures for ether extract determinations were as follows:

1. The grinder,<sup>1</sup> mixer,<sup>2</sup> and mixing pans were placed in the cooler with the separable lean at least 12 hours prior to sampling.

The lean was ground through a coarse plate (hole diameter = .95 cm) followed by manual mixing in a pan then mechanical mixing for a period of approximately two minutes.

3. The lean was then ground through a fine plate (.32 cm) followed by mechanical mixing.

4. The lean was ground again with the fine plate in the grinder.

5. As the lean was ground the last time, 9 grab samples were taken. These samples were taken so as to be evenly distributed, random samples of the entire carcass.

6. The 9 grab samples were randomly allotted into three subsamples and were manually mixed.

7. From each of these sub-samples, approximately 50 g of the ground lean was placed in a properly labeled plastic Whirl-Pac bag. The samples were then frozen until analyzed for total lipid.

8. In preparation for total lipid determination, the samples were thawed at 4 C and then homogenized at 20 C using a Sorvell Omnimixer.

9. A 5 g aliquot was taken from each sub-sample and the total lipid content determined using the Goldfisch apparatus and modified

Model No. 6642; The Biro Mfg. Co.; Marblehead, Ohio.

<sup>2</sup>Model No. 100DA, Leland Food Mixer; Leland Detroit Mfg. Co.; Detroit, Michigan. A.O.A.C. (1970) procedures. The modification consisted of deletion of fine sand to the lean sample prior to the drying and extraction process.

One or more total lipid determinations were made for at least two of the three-sub-samples. If more than one determination was made on a single sample, the determinations were averaged and a single value was assigned to that sub-sample. The mean percent ether extract of the analyzed samples was used to estimate the amount of fat in the separable lean of the carcasses. Fat-free lean was determined by substracting the fat content from the total separable lean.

#### Finishing Phase

At the end of the stocker phase 50 steers (1976-77) and 40 steers (1977-78) within each of the two stocker groups were randomly assigned to 5 treatment groups I-V or VI-X (Figure 1). Each treatment group consisted of 2 pens of 5 steers per pen in the first year and 4 steers per pen in the second year. Steers were fed on their respective treatment groups until it was judged their carcasses would grade lowchoice, at which time they were killed at a commercial packing plant. Groups I and VI were grazed to heavier weights on SG/B pastures for approximately 60 days before being finished in the feedlot. Groups III and VIII were grazed on SG/B pastures and fed ad libitum rations that contained 13.5 percent or 15 percent crude protein (DM basis), respectively. The rations initially contained 40 percent cottonseed hulls, coarsely ground corn (1 1/2 inch screen), soybean meal, and 5 percent of a mineral-vitamin carrier supplement. The level of cottonseed hulls in the rations was decreased (corn increased) at a rate of 10 percent per week until the rations contained 15 percent hulls. The

final composition of the 13.5 percent crude protein ration was 68.6 percent ground corn, 15 percent hulls, 11.4 percent soybean meal and 5 percent carrier supplement. The crude protein level of the rations was decreased from 15 to 13.5 percent when steers that were fed bermudagrass hay during the stocker phase weighed about 295 kg. Steers that were stockered on wheat pasture were fed the 13.5 percent crude protein ration throughout the finishing phase.

Each of the 2 pens of steers in treatment groups III and VIII were assigned "paired" groups of steers that were (1) grazed on SG/B pastures and fed nothing but the mineral mix utilized in the stocker phase (treatment groups II and VII), (2) placed in drylot and limitfed (groups IV and IX), or (3) fed <u>ad libitum</u> in drylot (groups V and X) the same rations that groups III and VIII were fed on SG/B pastures. Drylot groups IV and IX were limit-fed daily the same amount of ration that their paired group on SG/B consumed. The amount of ration fed daily to the drylot, limit-fed groups was adjusted weekly. Additional "put-and-take" steers were used in the SG/B pastures that Group II and VII steers grazed in order to fully utilize the available forage.

As each pen of steers from group III and VIII were killed, the respective paired pen of steers from groups IV and IX were also killed and shrunk weights of steers from the respective paired steer groups II and VII were measured. Feed efficiency for all grain fed groups was calculated as kg feed dry matter intake and as Mcal of metabolizable energy (ME) per kg of weight gain. Ration ME values were calculated from published NRC values for all feedstuffs.

Steers of groups II and VII, and III and VIII were rotated among 2 sets of 4 pastures, at 2-week intervals. The size of each pasture

was approximately 2 ha. Individual pasture forage yields were estimated from forage production (clipped to a height of 2.54 cm) under stationary cages (1 per pasture). Crude protein and <u>in vitro</u> dry matter digestibility (IVDMD) was determined from clippings of available forage outside cages. Forage yield and quality is shown in Appendix A, Tables 17 (1977) and 18 (1978).

Since put-and-take steers were not used in pastures grazed by steers in groups III and VIII and since forage utilization by steers in these pastures was less than that by steers of groups II and VII, the excess forage was removed as hay. When hay was harvested only one-half of each pasture was mowed at a time; the remaining one-half was mowed one to two weeks later.

The SG/B pastures were seeded with 56 kg Triumph wheat and 56 kg Bonel rye per ha during the third week of September, prior to beginning the study each year. The pastures were seeded with a John Deere Powr-Till Seeder. Fifty-six kg of nitrogen were applied per hectare in early October and again in February.

All steer weights used to calculate live weight gains were taken after over-night shrinks (usually about 16 hr) without feed and water.

#### Statistical Analysis

Data from the stocker phase were analyzed by analysis of variance procedures for a completely randomized design. Data from the post-stocker phase of the studies were analyzed by analysis of variance procedures for a factorial arrangement of treatments within a completely random design.

Statistical analysis of performance data pooled, within treatment groups, across years indicated treatment X year interactions (P<.05) existed. For this reason, separate analyses were conducted for data of each year and treatment comparisons were made within years. The probable cause of the interactions was due to differences in weather conditions and quality of hay fed during the stocker phase of both years. The manner in which these factors influenced steer performance is discussed in the following section.

Differences among treatment means were tested for statistical significance by use of the LSD when the F test for treatment differences was significant (P<.05).

#### Results and Discussion

#### Stocker Phase

Weight gains of steers during the stocker phase of both years are shown in Table 2. Live and carcass average daily gains of steers grazed on wheat pasture were greater (P<.05) than those of steers fed bermudagrass hay during the winter in both years. Live weight gains of steers grazed on wheat pasture were .33 kg per day (.52 vs .85) lower in the second year of the study. In that year, bermudagrass hay was fed to steers on wheat pasture for a total of 29 days, due to snow and/or ice cover. This would partially account for the decreased gains. The increased daily gains observed for steers fed bermudagrass hay the second year is attributed to the improved quality of hay which was 3.73 percentage units higher in crude protein (11.58 vs 7.85) and 5.57 percentage units higher in IVDMD (42.97 vs 37.40) than the hay fed during the first year of this study.

Year:	197	6-77	1977-78		
Stocker group:	Wheat pasture	Bermudagrass <sup>a</sup> hay	Wheat pasture	Bermudagrass <sup>a</sup> hay	
No. steers	57	55	47	47	
Initial live wt., kg	188 <sup>b</sup>	202 <sup>C</sup>	216	218	
Final live wt., kg	289 <sup>b</sup>	202 <sup>C</sup>	289 <sup>b</sup>	243 <sup>C</sup>	
ADG (live), kg	.85 <sup>b</sup>	.00 <sup>C</sup>	.52 <sup>b</sup>	.18 <sup>C</sup>	
ADG (carcass), kg	.56 <sup>b</sup>	08 <sup>C</sup>	.41 <sup>b</sup>	.07 <sup>C</sup>	

TABLE 2. PERFORMANCE OF STEERS DURING STOCKER PHASE

<sup>a</sup>Mean <u>+</u> SEM percent crude protein and IVDMD of bermudagrass hay were 7.85 <u>+</u> .31 and 37.40 <u>+</u> .51 for 1976-77 and 11.58 <u>+</u> .41 and 42.97 <u>+</u> 1.09 for 1977-78, respectively.

 $^{b,c}$ Means within a year with different lettered superscripts are statistically different (P<.05).

Initial and final carcass composition of steers in the stocker phase is shown in Table 3. In general during the stocker phase the percent fat-free lean in the steer carcasses decreased in the first year but increased in the second year for both stocker programs. The percent total fat, as determined from the physical separation technique, in the carcasses increased for steers stockered on wheat pasture, but decreased in carcasses of steers fed bermudagrass hay.

Estimates of carcass fat using the specific gravity technique were consistently less than those determined by physical separation. The apparent differences in carcass fat between the two methods ranged from .35 to 7.77%. In this study, the percent carcass fat of most steers

Year:	197	6-77	19	977-78
Stocker group:	Wheat pasture	Bermudagrass hay	Wheat pasture	Bermudagrass hay
Initial carcass data	-			
Carcass wt., kg	96.9	104.1	106.4	107.9
Fat free lean, % <sup>b</sup>	62.94	62.94	59.77	59.77
Separable bone,% <sup>b</sup>	20.74	20.74	20.82	20.82
Total fat, % <sup>b</sup>	16.32	16.32	19.41	19.41
Total fat, % <sup>C</sup>	15.97	15.97	14.27	14.27
Final carcass data				
Carcass wt., kg	163.2	94.5	163.3	118.0
Fat free lean,% <sup>b</sup>	55.27	61.86	61.22	67.88
Separable bone,% <sup>b</sup>	16.97	24.71	18.70	22.15
Total fat, % <sup>b</sup>	27.76	13.43	20.08	9.97
Total fat, % <sup>C</sup>	20.84	9.01	12.31	7.71

TABLE 3. CARCASS COMPOSITION<sup>a</sup> OF STEERS IN STOCKER PHASE

<sup>a</sup> Statistical analysis of data not conducted.

<sup>b</sup>Determined from physical separation technique; adjusted for the amount of ether extract in lean.

<sup>C</sup>Determined from specific gravity technique (Garrett and Hinman, 1969).

was above 12, the percent below which Garrett and Hinman (1969) indicated body composition estimations by specific gravity are less accurate, however, the carcass weight of these steers was less than  $216.5 \pm 41.6$  kg, which was the average weight of steers used by Garrett and Hinman (1969) to derive the equations for estimating carcass composition. It would appear different equations are needed to estimate body composition from specific gravity measurements of cattle with light carcasses.

Changes in carcass composition [(final weight of carcass component : initial weight of carcass component) X 100] of steers during the stocker phase are shown in Table 4. The dressing percent of stocker steers fed bermudagrass hay decreased 4.78 (51.64 vs 46.86) percentage units in the first and .92 (49.39 vs 48.47) percentage units the second year. This decrease in dressing percent would partially be attributed to the increase in gut fill and less carcass gain. Consumption of bermudagrass hay, as determined from the total amount of hay fed, was high (i.e., approximately 2.7 and 3.2 percent of body weight for the first and second years, respectively). These estimates do not, however, take into account hay wastage around feeders.

The percent change in fat-free lean (147.88, 1976-77; 157.15, 1977-78) and separable bone (137.83, 1976-77; 137.82, 1977-78) was similar in both years for steers grazed on wheat pasture. However, in the first year where daily gains of steers were higher than those of the second year the percent change in fat, as determined by physical separation techniques, was also higher (286.53 vs 158.71). This would indicate that differences in weight gain of the wheat pasture steers for the two years were largely due to differences in gain of fat.

Year:	197	6-77	1977-78		
Stocker group:	Wheat pasture	Bermudagrass hay	Wheat pasture	Bermudagrass hay	
Initial dressing %	51.64	51.64	49.39	49.39	
Final dressing %	56.44	46.86	56.53	48.47	
Fat free lean, kg <sup>b</sup>	29.20	- 7.07	36.36	15.62	
Fat free lean, % <sup>bc</sup>	147.88	89.21	157.15	124.23	
Separable bone, kg <sup>b</sup>	7.61	1.75	8.38	3.68	
Separable bone, % <sup>bc</sup>	137.83	108.11	137.82	116.39	
Total fat <sup>b</sup>	•				
Kilograms	29.49	- 4.3	12.13	- 9.17	
Percent <sup>C</sup>	286.53	74.69	158.71	56.19	
Total fat <sup>d</sup>					
Kilograms	18.53	- 8.11	4.91	- 6.29	
Percent <sup>C</sup>	219.35	51.21	132.24	59.09	

TABLE 4 . CHANGES IN CARCASS COMPOSITION<sup>a</sup> OF STEERS DURING STOCKER PHASE

<sup>a</sup>Statistical analysis of data not conducted.

<sup>b</sup>Determined from physical separation technique; adjusted for the amount of ether extract in lean.

 $^{\rm C}({\rm Final\ weight\ of\ carcass\ component\ \div\ initial\ weight\ of\ carcass\ component\ )\ X\ 100.$ 

<sup>d</sup>Determined from specific gravity technique (Garrett and Hinman, 1969).

The percent change in fat-free lean of steers stockered on bermudagrass hay was 89.21 (1976-77) and 124.33 (1977-78). In both years the percent change in separable bone was greater than 100 (108.11, 1976-77; 116.39, 1977-78), indicating structural growth did occur. However, loss of fat, as determined by physical separation techniques, was evident in both years, being 4.3 and 9.17 kg, respectively, for the first and second year. The loss of fat while gaining lean, as observed by steers stockered on bermudagrass hay in the second year, was also reported by Lofgreen <u>et al</u>. (1963) and Hull <u>et al</u>. (1969) and was speculated as being due to the breakdown of fat to meet other body requirements when protein intake is inadequate.

#### Finishing Phase

Live weight gains and feed efficiencies (feedlot only) of steers grazed to heavier weights on SG/B pastures for 56 days (1976-77) and 63 days (1977-78) after the stocker phase before being finished in the feedlot are shown in Table 5. During the first year average daily gains (ADG) of steers fed bermudagrass hay during the stocker phase were greater than ADG of wheat pasture steers during the 56 days on SG/B pastures (1.00 vs .77 kg) and while in the feedlot (1.60 vs 1.49 kg). The increased gains and improved feed efficiencies observed for steers fed bermudagrass hay during the stocker phase are characteristic of compensatory growth.

In situations where steers of similar type and condition such as those at the beginning of this study are carried through stocker programs which effect large differences in gains and fleshiness, it would be anticipated that steers held on the lower plane of nutrition

Year:	1976	5-77	1977-78		
Stocker phase:	Wheat pasture	Bermudagrass hay	Wheat pasture	Bermudagrass hay	
Initial wt., kg	290 <sup>a</sup>	203 <sup>b</sup>	291 <sup>a</sup>	245 <sup>b</sup>	
Final wt., kg	449 <sup>a</sup>	429 <sup>b</sup>	477	463	
ADG (live),kg SG/B <sup>C</sup>	.77 <sup>a</sup>	1.00 <sup>b</sup>	1.08 <sup>a</sup>	.83 <sup>b</sup>	
Feedlot	1.49	1.60	1.37	1.42	
SG/B and feedlot	1.18 <sup>a</sup>	1.40 <sup>b</sup>	1.25	1.21	
Feed/gain <sup>d</sup>	6.64	6.49	8.21	7.53	

TABLE 5.PERFORMANCE OF STEERS FROM TWO PREVIOUS<br/>STOCKER PROGRAMS WHEN GRAZED ON SMALL GRAINS-<br/>INTERSEEDED BERMUDAGRASS PASTURES AND THEN<br/>FINISHED IN THE FEEDLOT

 $^{a,b}\mbox{Means}$  within a year with different lettered superscripts are statistically different (P<.05).

<sup>C</sup>While grazing small grains-interseeded bermudagrass pastures (56 days, 1976-77; 63 days, 1977-78).

 $^{\rm d}{\rm Kilograms}$  feed dry matter per kilogram of gain in the feedlot.

would make compensatory gains during the post-stocker finishing phase.

This phenomena, however, was not observed in the second year. Steers stockered on wheat pasture continued to out gain (1.08 vs .83 kg/day) the bermudagrass hay fed stocker steers during the subsequent 63 days on SG/B pastures. Daily gains in the feedlot were similar, however (1.37 kg, wheat pasture steers; 1.42 kg, bermudagrass hay fed steers), but feed efficiencies in feedlot of steers fed bermudagrass hay during the stocker phase (7.53 vs 8.21 kg DM feed/kg gain) tended to be improved.

Reasons why steers fed bermudagrass hay during the stocker phase of the second year of the study did not clearly exhibit signs of compensatory gains during the finishing phase are that differences in daily gains (.85 kg, 1976-77; .34 kg, 1977-78) and final carcass fat content (14.33%, 1976-77; 10.11%, 1977-78) between steers from the different stocker groups were less the second year. The differences observed in the second year, therefore, may not have been great enough for compensatory gains by steers that were initially placed on the lower plane of nutrition to be apparent.

Performance of steers during the finishing phase is shown in Tables 6 and 7 for the first and second years, respectively. Daily gains of steers grazed on SG/B pastures and fed nothing were .57 and .77 kg (1976-77) and .79 and .69 kg (1977-78), respectively, for steers from the wheat pasture and bermudagrass hay stocker programs. Although, these gains were determined from steer weights measured at the time that their paired groups (III and VIII) were killed, ADG of steers grazing SG/B pastures the entire summer were .44 kg (wheat pasture) and .79 kg (bermudagrass hay) in the first year and .66 kg

Stocker phase:		Wheat pasture					Bermudagrass hay				Least
Group No.:	I <sup>a</sup>	II	III	IV	٧	VIa	VII	VIII	IX	X	difference
Initial wt., kg	290 <sup>C</sup>	293 <sup>C</sup>	290 <sup>C</sup>	290 <sup>C</sup>	289 <sup>C</sup>	203 <sup>b</sup>	202 <sup>b</sup>	206 <sup>b</sup>	203 <sup>b</sup>	198 <sup>b</sup>	7.9
Final wt., kg	449 <sup>d</sup>	355 <sup>b</sup>	404 <sup>C</sup>	426 <sup>cd</sup>	415 <sup>C</sup>	429 <sup>cd</sup>	327 <sup>b</sup>	406 <sup>C</sup>	418 <sup>cd</sup>	429 <sup>cd</sup>	31.0
Hot carcass wt., kg	279 <sup>C</sup>		251 <sup>b</sup>	261 <sup>bc</sup>	260 <sup>bc</sup>	252 <sup>b</sup>		243 <sup>b</sup>	243 <sup>b</sup>	255 <sup>b</sup>	23.5
Days fed in feedlot	78	0	0	108	92	107	0	0	163	154	
Total days in finishing phase	134	108	108	108	92	163	163	163	163	154	
ADG (live), kg	1.19 <sup>cd</sup>	. 57 <sup>b</sup>	1.07 <sup>C</sup>	1.26 <sup>cd</sup>	1.36 <sup>de</sup>	1.40 <sup>e</sup>	.77 <sup>b</sup>	1.23 <sup>cd</sup>	1.33 <sup>de</sup>	1.51 <sup>e</sup>	.20
ADG (carcass), kg	.86 <sup>b</sup>		.82 <sup>b</sup>	.91 <sup>bc</sup>	1.05 <sup>C</sup>	.96 <sup>bc</sup>		.90 <sup>bc</sup>	.91 <sup>bc</sup>	1.06 <sup>C</sup>	.18
Feed DM intake, kg	9.87 <sup>ef</sup>		8.38 <sup>bc</sup>	8.71 <sup>cd</sup>	10.72 <sup>f</sup>	10.38 <sup>ef</sup>		7.70 <sup>b</sup>	7.61 <sup>b</sup>	9.39 <sup>de</sup>	1.00
Feed/gain (live) <sup>g</sup>	6.64 <sup>bc</sup>		7.87 <sup>d</sup>	6.98 <sup>cd</sup>	7.86 <sup>d</sup>	6.49 <sup>bc</sup>		6.25 <sup>bc</sup>	5.74 <sup>b</sup>	6.29 <sup>bc</sup>	.96
Feed/gain (carcass) <sup>g</sup>	·.		10.28 <sup>d</sup>	9.59 <sup>bcd</sup>	10.21 <sup>cd</sup>			8.51 <sup>b</sup>	8.36 <sup>b</sup>	8.93 <sup>bc</sup>	1.31
Mcal/gain (live) <sup>h</sup>	18.83 <sup>bc</sup>		22.31 <sup>d</sup>	19.79 <sup>cd</sup>	22.24 <sup>d</sup>	18.47 <sup>bc</sup>		17.96 <sup>bc</sup>	16.48 <sup>b</sup>	17.93 <sup>bc</sup>	2.67
Mcal/gain (carcass) <sup>h</sup>		. *	29.14 <sup>C</sup>	27.21 <sup>bc</sup>	28.90 <sup>C</sup>			24.47 <sup>b</sup>	23.99 <sup>b</sup>	25.46 <sup>bC</sup>	3.71

TABLE 6. PERFORMANCE OF STEERS DURING FINISHING PHASE (1976-77)

<sup>a</sup>Average daily gains were determined from total weight gains obtained during the grazing and feedlot periods; feed intake and efficiencies were calculated from data obtained from the feedlot period only.

bcdef<sub>Means</sub> with different lettered superscripts are statistically different (P<.05).

<sup>g</sup>Kilograms feed dry matter per kilogram of gain.

<sup>h</sup>Mcal metabolizable energy per kilogram of gain.

Stocker phase:		Wheat pasture					Bermudagrass hay				Least
Group No.:	Ia	II	III	IV	٧	VI <sup>a</sup>	VII	VIII	IX	X	difference
Initial wt., kg	291 <sup>C</sup>	287 <sup>C</sup>	285 <sup>C</sup>	292 <sup>C</sup>	290 <sup>C</sup>	245 <sup>b</sup>	242 <sup>b</sup>	247 <sup>b</sup>	243 <sup>b</sup>	243 <sup>b</sup>	7.2
Final wt., kg	477 <sup>e</sup>	373 <sup>b</sup>	424 <sup>C</sup>	435 <sup>cd</sup>	438 <sup>cd</sup>	463 <sup>de</sup>	356 <sup>b</sup>	452 <sup>cde</sup>	439 <sup>cd</sup>	455 <sup>de</sup>	28.8
Hot carcass wt., kg	303 <sup>e</sup>		262 <sup>b</sup>	264 <sup>bc</sup>	274 <sup>bcd</sup>	278 <sup>bcd</sup>		282 <sup>cd</sup>	273 <sup>bcd</sup>	289 <sup>de</sup>	19.1
Days fed in feedlot	85	0	0	108	89	117	0	0	166	148	
Total days in finishing phase	148	108	108	108	89	180	166	166	166	148	
ADG (live), kg	1.25 <sup>cd</sup>	.79 <sup>b</sup>	1.31 <sup>cd</sup>	1.32 <sup>cd</sup>	1.66 <sup>e</sup>	1.21 <sup>C</sup>	. 69 <sup>b</sup>	1.24 <sup>cd</sup>	1.18 <sup>C</sup>	1.44 <sup>d</sup>	.20
ADG (carcass), kg	. 93 <sup>b</sup>		. 94 <sup>b</sup>	. 93 <sup>b</sup>	1.23 <sup>C</sup>	. 89 <sup>b</sup>		. 98 <sup>b</sup>	. 94 <sup>b</sup>	1.16 <sup>C</sup>	.13
Feed DM intake, kg	11.27 <sup>C</sup>		9.23 <sup>b</sup>	9.30 <sup>b</sup>	11.61 <sup>C</sup>	10.65 <sup>C</sup>		8.98 <sup>b</sup>	8.86 <sup>b</sup>	11.08 <sup>C</sup>	1.32
Feed/gain (live) <sup>f</sup>	8.21		7.09	7.02	7.00	7.53		7.27	7.54	7.73	. 99
Feed/gain (carcass) <sup>f</sup>			9.79	10.05	9.41			9.17	9.47	9.57	1.03
Mcal/gain (live) <sup>g</sup>	23.38		20.19	20.05	19.94	21.55		20.95	21.74	22.17	2.82
Mcal/gain (carcass) <sup>g</sup>			27.91	28.72	26.81			26.40	27.33	27.45	2.95

TABLE 7. PERFORMANCE OF STEERS DURING FINISHING PHASE (1977-78)

, <sup>a</sup>Average daily gains were determined from total weight gains obtained during the grazing and feedlot periods; feed intake and efficiencies were calculated from data obtained from the feedlot period only.

bcde<sub>Means</sub> with different lettered superscripts are statistically different (P<.05).

<sup>f</sup>Kilograms feed dry matter per kilogram of gain.

<sup>9</sup>Mcal metabolizable energy per kilogram of gain.

(wheat pasture) and .69 kg (bermudagrass hay) in the second year. Total steer grazing days per ha, calculated through the third week of September, were 468 and 354 in the first and second years, respectively. Steer grazing days per ha on SG/B pastures are shown in Appendix A, Table 19, within each year, for each month of the grazing season.

Carcass ADG of steers placed directly in the feedlot after the stocker phase (groups V and X) were similar the first year (1.05 vs 1.06 kg). In the second year of the study carcass ADG were more variable (1.23 vs 1.16 kg) but not significantly different (P>.05). Daily feed dry matter intakes was greater (P<.05) for steers stockered on wheat pasture in the first year (10.72 vs 9.39 kg) but not significantly greater (P>.05) the second year, being 11.61 kg for steers stockered on bermudagrass hay.

Feed (kg) and Mcal of ME required per kg of carcass gain were not significantly different (P>.05) between steers of each stocker group within each year.

Feed consumption of steers fed grain on pasture (groups III and VIII) was high (i.e., approximately 80% of the feed consumption of their paired feedlot <u>ad libitum</u> fed groups). The relationship between carcass ADG and feed dry matter intake of limit-fed and <u>ad</u> <u>libitum</u>-fed steers in feedlot that were paired to steers fed grain on SG/B pastures, was used to partition the contribution of grain and forage to carcass weight gains of steers fed grain on pasture. From this relationship and the grain consumption of steers on pasture, the portion of carcass ADG due to grain intake could be

estimated. Observed carcass ADG above the calculated amount would be the portion contributed by forage. Conversely, from the observed carcass ADG of steers fed grain on grass, the grain sparing effect of the forage could be determined.

The observed, calculated and differences between the observed and calculated carcass ADG and feed dry matter intakes are shown in Table 8 for each replicate of steers fed grain on grass. In the first year observed carcass ADG were generally slightly less than calculated carcass ADG, whereas, in the second year they were slightly greater. The magnitude of these differences are very small, however. Carcass ADG of steers fed grain on grass were 90% (wheat pasture) and 99% (bermudagrass hay) of carcass ADG of their paired feedlot limit-fed groups in the first year and 101% (wheat pasture) and 104% (bermudagrass hay) in the second year (Tables 6 and 7). The contribution of forage to weight gains of steers fed grain on SG/B pastures was, therefore, minimal.

Carcass characteristics of steers from the different finishing programs for the first year of the study are shown in Table 9. In general, steers from the various finishing programs that were fed bermudagrass hay during the stocker phase had lower dressing percentages, greater fat thicknesses, smaller rib-eye areas and higher yield grades compared with steers grazed on wheat pasture during the stocker phase. Expressing fat thickness and rib-eye area on a per 100 kg of hot carcass weight basis did not change the relative relationship between the finished steers of the two stocker groups.

Carcass characteristics of steers from the second year of the study are shown in Table 10. As in the first year of the study,

Year:		197	6-77		1977-78				
Stocker phase:	Wheat pasture		Bermu ł	Bermudagrass hay		Wheat pasture		Bermudagrass hay	
Replication:	1	2	1	2	1	2	1	2	
Observed carcass ADG, kg	.83	.80	.92	.89	.86	1.03	.94	1.02	
Observed feed DM intake, kg/hd/day	8.70	8.07	8.02	7.38	8.64	9.82	8.39	9.58	
Calculated carcass ADG for <sup>a</sup> observed feed intake, kg	.88	.91	.95	.88	.86	.98	.95	.97	
Calculated feed DM intake <sup>a</sup> for observed carcass ADG, kg/hd/day	8.12	5.03	7.79	7.58	8.65	10.18	8.29	9.93	
Observed minus calculated carcass ADG, kg <sup>a</sup>	05	11	03	.01	.0	.05	01	.05	
Observed minus calculated feed DM intake, kg	. 52	3.04	.23	20	01	36	.10	35	

## TABLE 8.ESTIMATED CONTRIBUTION OF FORAGE AND GRAIN TO CARCASS<br/>GAINS OF STEERS FED GRAIN ON GRASS

<sup>a</sup>Determined from the linear relationship between carcass ADG and feed DM intake of the limit-fed and <u>ad libitum</u>-fed steers in the feedlot that were paired to the respective grain on grass replicate.

Stocker phase:	Wheat pasture				Bermudagrass hay				Least
Group No.:	I	III	IV	٧	VI	VIII	IX	X	difference
Dressing %	62.18 <sup>C</sup>	62.07 <sup>C</sup>	61.34 <sup>bc</sup>	62.68 <sup>C</sup>	58.63 <sup>a</sup>	59.93 <sup>ab</sup>	58.09 <sup>a</sup>	59.48 <sup>ab</sup>	2.05
Fat thickness, <sup>e</sup> cm	2.12 <sup>ab</sup>	1.98 <sup>a</sup>	2.00 <sup>a</sup>	2.19 <sup>ab</sup>	2.48 <sup>bc</sup>	2.45 <sup>bc</sup>	2.34 <sup>abc</sup>	2.74 <sup>C</sup>	.41
Fat thickness/100 kg carcasse cm	.76 <sup>a</sup>	.79 <sup>a</sup>	.77 <sup>a</sup>	.84 <sup>ab</sup>	.99 <sup>C</sup>	1.01 <sup>C</sup>	.96 <sup>bc</sup>	1.07 <sup>C</sup>	.12
REA, sq. cm	80.16 <sup>d</sup>	69.48 <sup>bc</sup>	75.46 <sup>cd</sup>	73.70 <sup>cd</sup>	65.21 <sup>ab</sup>	61.65 <sup>a</sup>	64.72 <sup>ab</sup>	62.86 <sup>ab</sup>	6.94
REA/100 kg carcass, sq. cm	28.98 <sup>C</sup>	27.95 <sup>bc</sup>	29.03 <sup>C</sup>	28.36 <sup>bc</sup>	25.91 <sup>ab</sup>	25.44 <sup>a</sup>	26.77 <sup>abc</sup>	24.67 <sup>a</sup>	2.52
KHP fat, %	2.90	2.85	3.05	2.95	2.85	3.05	2.95	2.95	. 44
KHP fat/100 kg carcass, %	1.04 <sup>a</sup>	1.14 <sup>ab</sup>	1.17 <sup>ab</sup>	1.13 <sup>ab</sup>	1.14 <sup>ab</sup>	1.26 <sup>b</sup>	1.22 <sup>b</sup>	1.16 <sup>ab</sup>	.15
Yield grade	3.53 <sup>a</sup>	3.67 <sup>a</sup>	3.53 <sup>a</sup>	3.77 <sup>a</sup>	4.38 <sup>bc</sup>	4.50 <sup>bc</sup>	4.21 <sup>b</sup>	4.80 <sup>C</sup>	.43
Marbling score <sup>f</sup>	14.7	12.7	14.7	14.4	13.2	12.8	12.5	14.2	2.7
Quality grade <sup>g</sup>	10.1	9.4	10.4	10.3	9.7	9.4	9.2	10.0	1.4

TABLE 9. STEER CARCASS CHARACTERISTICS (1976-77)

 $^{abcd}$ Means with different lettered superscripts are statistically different (P<.05).

 $^{\rm e}{\rm Average}$  of three measurements taken 1/4, 1/2 and 3/4 length of the longissimus muscle of the 12 to 13th rib separation.

<sup>f</sup>17 = average modest; 14 = average small; 11 = average slight.

<sup>g</sup>12 = high choice; 10 = low choice; 8 = average good.

Stocker phase:	Wheat pasture				Bermudagrass hay				Least
Group No.:	I	III	IV	V	VI	VIII	IX	X	difference
Dressing %	63.57 <sup>d</sup>	61.76 <sup>bc</sup>	60.71 <sup>ab</sup>	62.50 <sup>cd</sup>	60.09 <sup>a</sup>	62.51 <sup>cd</sup>	62.19 <sup>bcd</sup>	63.51 <sup>d</sup>	1.60
Fat thickness, <sup>e</sup> cm	1.88	1.51	1.64	1.57	1.74	1.84	1.77	2.11	.47
Fat thickness/100 kg carcass, <sup>e</sup> cm	.63	.59	.63	. 57	.63	.65	.64	.73	.17
REA, sq. cm	75.32 <sup>b</sup>	74.29 <sup>b</sup>	70.71 <sup>ab</sup>	73.14 <sup>ab</sup>	68.29 <sup>a</sup>	70.41 <sup>ab</sup>	68.15 <sup>a</sup>	71.39 <sup>ab</sup>	5.74
REA/100 kg carcass, sq. cm	25.09 <sup>ab</sup>	28.37 <sup>C</sup>	26.80 <sup>bc</sup>	26.83 <sup>bc</sup>	24.58 <sup>a</sup>	25.02 <sup>ab</sup>	25.11 <sup>ab</sup>	24.71 <sup>ab</sup>	2.13
KHP fat, %	2.31	2.63	2.38	2.63	2.38	2.88	2.88	2.19	.51
KHP fat/100 kg carcass, %	.77 <sup>a</sup>	1.00 <sup>bc</sup>	.90 <sup>abc</sup>	.96 <sup>bc</sup>	.86 <sup>ab</sup>	1.02 <sup>C</sup>	1.05 <sup>C</sup>	.76 <sup>a</sup>	.15
Yield grade	3.62 <sup>ab</sup>	3.02 <sup>a</sup>	3.30 <sup>ab</sup>	3.24 <sup>ab</sup>	3.63 <sup>ab</sup>	3.75 <sup>b</sup>	3.73 <sup>ab</sup>	3.90 <sup>b</sup>	.71
Marbling score <sup>f</sup>	14.1 <sup>abc</sup>	11.8 <sup>a</sup>	12.4 <sup>a</sup>	12.4 <sup>a</sup>	15.0 <sup>bc</sup>	12.6 <sup>ab</sup>	15.8 <sup>C</sup>	15.3 <sup>bc</sup>	2.7
Quality grade <sup>g</sup>	10.0 <sup>ab</sup>	8.6 <sup>a</sup>	9.1 <sup>ab</sup>	9.0 <sup>ab</sup>	10.5 <sup>b</sup>	9.3 <sup>ab</sup>	10.4 <sup>b</sup>	10.5 <sup>b</sup>	1.6

TABLE 10. STEER CARCASS CHARACTERISTICS (1977-78)

<sup>abcd</sup>Means with different lettered superscripts are statistically different (P<.05).

 $^{\rm e}{\rm Average}$  of three measurements taken 1/4, 1/2 and 3/4 length of the longissimus muscle of the 12 to 13th rib separation.

f17 = average modest; 14 = average small; 11 = average slight.

<sup>g</sup>12 = high choice; 10 = low choice; 8 = average good.

steers stockered on wheat pasture had greater rib-eye areas and lower yield grades. However, dressing percentage tended to average about same for steers from both stocker groups, while marbling scores of carcasses were higher for steers from the bermudagrass hay stocker program. Total days in the feedlot were less for steers from the wheat pasture stocker phase, however. Expressing fat thickness and rib-eye area on a per 100 kg of hot carcass weight basis, tended to show an advantage for steers from the wheat pasture program.

In both years steers from the wheat pasture stocker program and in the first year steers from the bermudagrass hay stocker program that were fed grain on grass had carcasses with lower marbling scores and carcass quality grades than carcasses of steers from their paired feedlot, limit-fed groups. Since these paired groups of steers were fed similar amounts of feed, efficiency of feed utilization was apparently poorer for the steers fed grain on grass when compared with their paired limit-fed groups.

Negative associative effects of the ration fed and the consumed forage could account for this decrease in efficiency of feed utilization. However, an increased maintenance requirement for the steers fed grain on grass could also influence efficiency of feed utilization. Kromann <u>et al</u>. (1960) indicated that the energy requirements of steers grazing on grass were not increased over those of steers in confinement. However, others (Blaxter, 1969; Ledger, 1977; Ribeiro <u>et al</u>., 1977) have shown that maintenance energy requirements of cattle grazing on grass are 4 to 97% greater than the maintenance energy requirements of cattle in confinement. The amount of increase was dependent on walking distance which ranged from 1 to 15 km in the

above studies.

Five steers (1976-77) and 8 steers (1977-78) that were stockered on wheat pasture and then grazed on SG/B pastures through the summer were slaughtered the last week in September of both years of the study. Carcass quality grade was between low- and average-good the first year and average- and high-good the second year.

Performance and carcass data of steers that were initially placed in the feedlot (November 16, 1976) versus that of steers stockered on wheat pasture or bermudagrass hay prior to being finished by feeding ad libitum in feedlot (groups V and X) the first year are shown in Table 11. Carcass average daily gains (feedlot only) of steers initially placed in the feedlot were lower (P<.05) than those of either group of steers that were carried through as stockers before being finished in the feedlot. Feed and Mcal of ME required per kg of gain were lower, although not significantly (P>.05), for steers initially placed in the feedlot. The average slaughter weight of 234 kg and carcass quality grade of slightly under low-choice indicate that the initial feedlot steers should have been fed a little longer. In general, the carcass characteristics of steers stockered on wheat pasture before being finished in the feedlot were more desirable; whereas carcass characteristics of steers fed bermudagrass hay during the stocker phase and the initial feedlot steers were similar.

Performance and carcass data of the <u>ad libitum</u> fed feedlot groups of the second year are shown in Table 12.

Live and carcass average daily gains of steers initially placed in the drylot were lower (P<.05) than those of either group of steers

TABLE	11.	PERFORMANCE OF INITIAL FEEDLOT STEERS
		VERSUS STEERS STOCKERED ON WHEAT
		PASTURE AND BERMUDAGRASS HAY BEFORE
		BEING FINISHED IN FEEDLOT (1976-77)

Group:	Initial feedlot	Wheat pasture	Bermudagrass hay
Initial weight, kg	187	289*	198
Final weight, kg	393	415	429*
Days in stocker program	0	119	119
Days in feedlot	163	92	154
Total days	163	211	273
ADG (live), kg	1.26	1.36	1.51*
ADG (carcass), kg	.84	1.05*	1.06*
Feed DM intake, kg	7.17	10.72	9.39
Feed/gain (live) <sup>a</sup>	5.71	7.86	6.29
Feed/gain (carcass) <sup>a</sup>	8.52	10.21	8.93
Mcal/gain (live) <sup>b</sup>	17.36	22.24	17.93
Mcal/gain (carcass) <sup>b</sup>	25.89	28.90	25.46
Hot carcass weight, kg	234	260	255
Dressing percent	59.64	62.68*	59.48
Fat thickness, cm	2.36	2.19	2.74*
Fat thickness/100 kg carcass, cm	1.01	.84*	1.07
REA, sq. cm	62.92	73.70*	62.86
REA/100 kg carcass, sq. cm	26.87	28.36	24.67*
KHP fat, %	3.29	2.95	2.95
KHP fat/100 kg carcass, %	1.41	1.13*	1.16*
Yield grade	4.33	3.77*	4.80*
Marbling score <sup>C</sup>	13.4	14.4	14.2
Quality grade <sup>d</sup>	9.7	10.3*	10.0

\*Significantly different from initial feedlot group (P<.05).

<sup>a</sup>Kilograms feed dry matter per kilogram of gain.

<sup>b</sup>Mcal metabolizable energy per kilogram of gain.

 $c_{17}$  = average modest; 14 = average small; 11 = average slight.  $d_{12}$  = high choice; 10 = low choice; 8 = average good.

TABLE 12. PERFORMANCE OF INITIAL FEEDLOT STEERS VERSUS STEERS STOCKERED ON WHEAT PASTURE AND BERMUDAGRASS HAY BEFORE BEING FINISHED IN FEEDLOT (1977-78)

Group:	Initial feedlot	Wheat pasture	Bermudagrass hay
Initial weight, kg	208	290*	243*
Final weight, kg	427	438	455
Days in stocker program	0	140	140
Days in feedlot	194	89	148
Total days	194	229	288
ADG (live), kg	1.13	1.66*	1.44*
ADG (carcass), kg	.85	1.23*	1.16*
Feed DM intake, kg	7.17	11.61	11.08
Feed/gain (live) <sup>a</sup>	6.37	7.00	7.73
Feed/gain (carcass) <sup>a</sup>	8.47	9.41	9.57
Mcal/gain (live) <sup>b</sup>	19.45	19.94	22.17
Mcal/gain (carcass) <sup>b</sup>	25.89	26.81	27.45
Hot carcass weight, kg	267	274	289
Dressing percent	62.58	62.50	63.51
Fat thickness, cm	2.00	1.57*	2.11
Fat thickness/100 kg carcass, cm	.75	.57*	.73
REA, sq. cm	69.66	73.14	71.39
REA/100 kg carcass, sq. cm	26.04	26.83	24.71
KHP fat, %	3.63	2.63*	2.19*
KHP fat/100 kg carcass, %	1.37	.96*	.76*
Yield Grade	3.98	3.24*	3.90
Marbling score <sup>C</sup>	17.3	12.4*	15.3*
Quality grade <sup>d</sup>	11.3	9.0*	10.5

\*Significantly different from initial feedlot group (P<.05).

<sup>a</sup>Kilograms feed dry matter per kilogram of gain.

<sup>b</sup>Mcal metabolizable energy per kilogram of gain.

<sup>C</sup>17 = average modest; 14 = average small; 11 = average slight.

 $d_{12}$  = high choice; 10 = low choice; 8 = average good.

that were carried through as stockers before being finished in drylot. Feed dry matter consumption of the initial feedlot steers was low for reasons that cannot be explained. However, as seen in the first year, improved feed efficiencies were observed for the initial feedlot steers.

In general, except for marbling score and quality grade, the carcass characteristics of steers stockered on wheat pasture before being finished in the feedlot were the most desirable. Steers initially placed in the feedlot had the smallest rib-eye area. Expressing ribeye area on a per 100 kg of hot carcass weight basis gave the lowest value for finished steers that were stockered on bermudagrass hay. As in the first year, carcass characteristics of steers fed bermudagrass hay during the stocker phase and the initial feedlot steers were similar.

#### Enterprise Budget Analysis

The Oklahoma State University Budget Generator was used to analyze the economic potential of the stocker and finishing programs. Each enterprise budget was developed from management and feeding data for steers within the respective treatment groups during this study. In order to eliminate differences in costs not related to treatment, the average initial weight of all steers was adjusted to 193 kg (425 1b) in the first year and 215 kg (475 1b) in the second year. Similarly, the average initial weight of all steers entering the finishing phase was adjusted, within stocker groups, to a common weight. Steer gains and feed efficiencies used in the budgets are nearly identical to the actual observed values, however. One exception is the average daily gains for the 56-day (1976-77) and 63-day (1977-78), post-stocker period of (1) steers grazed on SG/B prior to being finished in drylot, and (2) steers that remained on pasture all summer were averaged, within the previous stocker treatment groups, since the two treatment groups were managed similarly during the poststocker period.

Feeder and fed steer prices utilized in the budgets were obtained from general price relationships among grades and weights of steers sold in the fall of 1978 (Ikerd, 1978) and are shown in Table 20 of Appendix A. Adjustments for variation in cattle prices for the months steers were bought and sold were made by multiplying the annual average prices by the 10-year-average ratios (Blakley, 1978), which reflect the seasonal variation in the cattle market during the past 10 years. Operating, machinery and equipment inputs utilized in the budgets were obtained from enterprise budgets prepared by the Oklahoma State University Cooperative Extension Service (1978).

Groups of steers that were slaughtered but failed to grade lowchoice were assigned the same selling price as heavy feeders (>900 lb). The enterprise budgets of steer groups II and VII were developed from performance and management data accumulated through the entire summer, rather than from data accumulated to the date when their paired groups (III and VIII) were slaughtered.

The value of hay (\$35/ton) removed from the SG/B pastures, and the harvesting costs (\$22.50/ton) were assigned to the steers fed grain on grass. The amount of hay added to these production systems for each steer was 2 tons. All pasture charges attributed to each steer were based on animal unit month (AUM) equivalence for the average weight and daily gain of steers for each month of grazing. Conversion

### TABLE 13. FORMAT OF ENTERPRISE BUDGET COMPUTER PRINTOUT

#### WHEAT PASTURE STOCKER TO 646 LB. 119 DAYS GRAZE OVERSEEDED BERMUDAGRASS 56 DAYS (MAR. 16 - MAY 11) AD LIB FINISH IN COMMERCIAL FEEDLOT 78 DAYS (MAY 11 - JULY 28, 1977)

PRODUCT ION	UNITS	QUANITY	WEIGHT	PRICE VAL	UE/UNIT	VALUE
SETR STRS CHOICE	CWI.	0.98	10.37	57.800	282.03	570.41
TOTAL RECEIPTS						510.71
		RATE	NUMBER	TOTAL		
OPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
	•••••					
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
S.G. PASTURE	ÁUHS	2.88	1.00	2.883	18.00	51.89
BERMUCA HAY	TONS	0.08	1.00	0.080	37.50	3.00
SALT & MIN.	L8S.	11.00	1.00	11.000	0.08	0.88
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
NATIVE PASTURE	AUMS	0.28	1.00	0.280	5.00	1.40
VET & MED.	HD.	1.00	1.00	1.000	2.12	2.12
TRUCK ING	CWT.	21.83	1.00	21.830	0.25	5.46
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
O.S. BERMUDA	AUMS	1.80	1.00	1.800	14.00	25.20
C.S. HULLS	CWT.	359.67	0.01	3.597	3.25	11.69
CORN	CWT.	1212.19	0.01	12.122	4.29	52.00
S.B. MEAL	CWT.	227.83	0.01	2.278	8.50	19.37
SUPPL EMENT	CWT.	94.73	0.01	0.947	4.29	4.06
FEED MARGIN	DAYS	78.00	1.00	78.000	0.15	11.70
FEEDLOT CHARGE	DAYS	78.00	1.00	78.000	0.05	3.90
MACH. FUEL & LUBE						2.24
MACHINERY REPAIR COST						1.22
EQUIPMENT REPAIR						0.28
TOTAL OPERATING COST						524.29
RETURNS TO LAND, LABOR, CAPITAL, MACHIN OVERHEAD, RISK, AND MANAGEMENT	ERY,					46.12
CAPITAL COST			PRICE	AMOUN	Γ .	VALUE
ANNUAL OPERATING CAPITAL			0.100	289.564	•	28.96
MACHINERY INVESTMENT			0.100	8.729		0.87
EQUIPMENT INVESTMENT			0.100	7.050	נ	0.70
TOTAL INTEREST CHARGE		•				30.53
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT						15.59
RUNERSHIP COST: (DEPRECIATION.						
TAYES. INSURANCE)						
MACHINERY	DOL .					1.46
FOULPMENT	DOL					1.60
TOTAL OWNERSHIP COST						3.06
					*******	
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						12.52
LARR COSTS			PRICE	HOUR	s	
NACHINERY LABOR			3.000	1-44	5	4.32
FOULPHENT LABOR			3.000	0.25	5	0.75
LIVESTOCK LABOR			3.000	1.32	Ď	3.96
TOTAL LABOR COST				3.010	0	9.03
RETURNS TO LAND, OVERHEAD						3.49
***************************************						
STOCKER ADG 1.86 LB / 0.5.	BERMUDA AL	DG 1.88 /	FEEDLOT ADG	3.28 LB	MADER	
OVERSEEDED BERMUDAGRASS EST	ABLISHMEN	T ON CUSTO	BASIS			
THESE COSTS ARE PRORATED BY	AUM UNIT	S OVER A 2	MO PERIODO2	2/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DET	AIL UD SPI	ELIES I AG				
ANNIAL CARTAL HONTLA 7	PRICE VE	CI & CUUIP	COMP 14			
PROVAL CAPITAL MUNITIN /						

PROCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY PROGRAM DEVELOPED BY DEPT. OF. AGRI. ECON. OKLAHOMA STATE UNIVERSITY DATE PRINTED:02/21/79

### TABLE 13 (Continued)

	HAL	FER	<b>H &amp; R</b>	APR	MAY	NUL	JUL	AUG	SEP	001	NOV	DEC	PAICE	WE IGHT	UNIT	LTEN CODE	TYPE	CONT	
ADDUCTION	0.0	0.0	0:0	0.0	NUMBER 0.0	af u 0.0	NETS 0.98	0.0	0.0	0.9	0.0	0.0	57.800	10.070	16.	11.	2.	<b>0.</b> .	
CPERATING INPUTS					RATE	/unit	•						PRICE	NUMBER	UNET	ITEN	TYPE	CONT	
11 STR CALVEA-SICH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	74.900	4.250	16.	13.	3.	٥.	
12 S.G. PASTURE	0.72	0.79	0.43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.66	18.000	1.000	10.	153.	3.	0.	
14 SALT & MIN.	1.94	1.75	1.94	1.86	3.69	0.0	0.0	0.0	0.0	c.o	0.88	1.94	0.380	1.003	12.	103.	3.	0.	
15 STARTER FEED 14 NATIVE PASTURE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.32	0.0	7.105	1-000	16-	129.	3.	0.	
17 VET & MED.	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.94	0.03	0.01	2.120	1.000	1.	410.	3.	<b>0</b> .	
IN TRUCKING	0.0	0.0	0.0	0.0	7.51	0.0	10.37	0.0	0.0	4.25	0.0	0.0	1.603	1.000	16.	481.	3.	0.	
20 SALES COMM.	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	3.000	1.000	1.	405.	3.	0.	
22 C.S. BERMUDA	0.0	0.0	0.45	0.90	0.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.000	1.300	10.	152.	3.	٥.	
23 C.S. HULLS	0.0	0.0	0.0	0.01	43.8011	1.781	04.09	0.0	0.0	0.0	0.0	0.0	3.250	0.010	16.	104.	3.	0.	
25 S.B. HEAL	0.0	0.0	0.0	0.0	64.73 8	3.72	79.38	5.0	0.0	0.0	0.0	0.0	8.500	0.010	16.	119.	3.	ō.	
26 SUPPLEMENT 27 FEED MARGIN	0.0	0.0	0.0	0.0	23.60 3 19.00 3	6.43	34.70 29.03	0.0	0.0	0.0 0.0	0.0	0.0	4.290	0.010	16.	107.	3.	0.	
28 FEEDLOT CHARGE	0.3	0.0	0.0	0.0	19.00 3	0.00	29.00	0.0	0.0	0.0	0.0	0.0	0.050	1.000	9.	202.	3.	0.	
MACHENERY REQUIRENEN	15					HC	urs			•			****	****	POWER	HACH	TYPE	CONT	
29 PICKUP	0.14	0.16	0.14	0.16	0-08	0.0	0.0	0.0	00	0.14	0.16	0.16	0.0	0.0	11.	<b>11</b> •	4.	0.	
SOUIPHENT REQUIREMEN	TS												NUMBER		XXX E	QUIP CODE	TYPE	****	
38 HTSC													1.000	0.013	0.	6.	5.	0.	
39 ELECTRIC FENCE 40 WATER TANK													1.000	0.010	0.	5. 23.	5.	0. 0.	
41 WCRKING CHUTE													1.000	0.010	0.	44.	5.	0.	
43 PORT LOAD CHUTE												1	1.000	0.010	0.	46.	5.	ö.	
49 LEVESTOCK LABOR	0-14	0-16	0.16	0.14	0.08	0-0	0.0	0-0	0.0	0.24	0.20	0.16							
ه هو هو است وه ناگه و بورو و بور		HONT	# Y SU		F RECEI	PTS 4		PENOIT	URES								)		
CATEGORY YE	AR UNI	T	JAN	FEB	MAR	APR	H	AY	NUL	JUL	AUG	SEP	OCT	NOV	DEC			TO	TAL
TOTAL VARIABLE COST	1 DOL	•	14.79	15.59	14.62	13.2	5 33	.78 3	9.65	43.37	0.0	0.0	324.28	9.41	15.4	7		52	24.2
ANNUAL CAPITAL	1 00L		10.33	31.63	32.85	33.9	6 36	.17 4	0.08	0.0	0.0	0.0	27.02	27.81	29.1	0		28	
		LABO			 S	*****													
PACHINERY LABOR	1 HOU	R .	0.19	0.19	0.19	0.1	9 0	.10	0.0	0.0	0.0	0.0	0.19	0.11	0.1	9			1.4
EQUIPMENT LABOR	I HOU	È.	0.02	0.02	0.02	0.0	2 0	.02	0.02	0.02	0.0	0.0	0.02	0.02	0.0	2			0.2
TOTAL LABOR	1 HOU	R 	0.38	0.38	0.38	0.3	8 0	.20	0.02	0.02	0.0	0.0	0.46	0.42	0.3	8			3.0
PICKUP	NOU	HACH) R	NERY 0.16	REQUIRE 0.16	MENTS B	Y MON	ITH 0	-08	0.0	0-0	0.0	0.0	0-16	0.14					1.2
		-													0.1				
		MACH	MERY	ETVEN A	NO VART		COST						TOTAL		0.1				
	E	MACHI	INERY	FIXED A	ND VARI	A BLE TOTA	COST	PER HO	UR PAIR	FUEL		LU8.	TOTAL	BLE	0.1		TIME		
PICKUP 11	IE	MACHI DEPR	INERY IN O	FIXED A SUR.	ND VARI TAX 0.11	TOTA	COST L FIX 1.22	PER HO ED RE	UR PAIR .01	FUEL 1.62		LU8. 0.24	TOTAL VARIA 2.6	BLE	0.1 INT. 0.73	HR.)	/TIME	• • • • • • •	
	)E	MACHI DEPR 1.06	INERY IN O AL COS	FIXED A SUR. .04 T SUMMA LIST	ND VARI TAX 0.11 Ry For DEPREC	A BLE TOTA EQUIP	COST L FIX 1.22	PER HO ED RE L ANO LI	UR PAIR .01 VESTOC	FUEL 1.62		LU8. 0.24	TOTAL VARIA 2.6	HOURS	0.1 INT. 0.73 TOT DW	HR/ 1	TIME	ER-	
PICKUP 11 PICKUP 11 LINE NO. ITEM	SI	MACHI DEPR 1-06 ANNU	INERY IN O AL COS	FIXED A SUR. .04 T SUMMA LIST PRICE	ND VARI TAX 0.11 RV FOR DEPREC IATION	ABLE TOTA EQUIP	COST L FIX 1.22 MENT	PER HO ED RE L ANO LI INS AN	UR PAIR .01 VESTOC UR- CE 24	FUEL 1.62 K TAXES	REPAIR	LU8. 0.24	TOTAL VARIA 2.6 FUEL LUBE	HOURS	0.1 INT. 0.73 TOT OW ERSHP/	HR.) 1 N- TC YR A1	TIME	ER- /R	
PICKUP LI LINE NG. ITEM 6 MISC 5 ELECTRIC FENCE	SI. 0. 1.	MACHI DEPR 1.06 ANNUA ZE UN 0 0 0 HII	INERY IN O AL COS HIT LE 1	FIXED A SUR	ND VARI TAX 0.11 RY FOR DEPREC 1ATION 16:00 15:00	EQUIP	COST L FIX 1.22 MENT REST 4.00 7.50	PER HO ED RE L ANO LI INS AN O. O.	UR PAIR .01 VESTOC UR- CE 24 45	FUEL 1.62 K TAXES 0.40 0.75	REPAIR 3.2 12.7	LUB. 0.24	TOTAL VARIA 2.6 FUEL LUBE 0.0 0.0	HQURS LABOR 1.00	0.1 INT. 0.73 TOT DW ERSHP/ 16. 16.	HR.) HR.) N- TC 'YR A1 64 20	TIME 1.00 DT OPI TING/1 3.1 12.	ER- /R 20 75	
LINE NO. ITEM 6 MISC 9 ELECTRIC FENCE 23 WATER TANA 44 WORKING CHUTF	ST 0. 1. 1134.	MACHI DEPR 1-06 ANNU/ ZE UM 0 00 MII 30 GAI	INERY IN O AL COS HIT LE 1 J	FIXED A SUR04 T SUMMA LIST PRICE 80.00 50.00 50.00 50.00	ND VARI TAX 0.11 RV FUR DEPREC 1ATION 16.00 15.00 10.50 35.00	ABLE TOTA EQUIP INTE	COST L FIX 1.22 MENT REST 4.00 7.50 5.25 7.50	PER HO ED RE L ANO LI INS AN O. O. O.	UR PAIR .01 VESTOC UR- CE 24 45 31 05	FUEL 1.62 K TAXES 0.40 0.75 0.53 1.75	REPAIR 3.2 12.7 0.0 3.5	LU8. 0.24 S AND	TOTAL VARIA 2.6 FUEL LUBE 0.0 0.0 0.0 0.0 0.0	HQURS LABOR 1.00 2.00 2.00	0.1 INT. 0.73 TOT OW ERSHP/ 16. 16. 11. 37.	HRJ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TIME 	ER- VR 20 75 3	_
PIGNUP 11 LINE NG. ITEM MG. ITEM MISC SELECTRIC FENCE 23 WATER TANK 44 WORKING CHUTE 45 PORTABLE CORRAL 44 PORTABLE CORRAL	SI 0. 1. 1134. 1. 100.	MACHI DEPR 1.06 ANNU/ ZE UN 0 00 MII 00 GAI 00 HD	INERY IN O AL COS HIT LE 1 LE 1 J J J J	FIXED A SUR04 T SUMMA LIST PRICE 80.00 50.00 50.00 75.00	ND VARI TAX 0.11 RY FOR DEPREC IATION 16.00 15.00 10.50 35.00	ABLE TOTA EQUIP INTE	COST L FIX 1.22 MENT 4.00 7.50 5.25 7.50 88.75	PER HO ED RE INS AND LI AND LI AN O. O. 1.	UR PAIR .01 VESTOC UR- CE 24 45 31 05 72	FUEL 1.62 K TAXES 0.40 0.75 0.53 1.75 2.88 0.75	REPAIR 3.2 12.7 0.0 3.5 5.7	LU8. 0.24 S ANO 0 5 5	FUEL C.G FUEL LUBE 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	HQURS LABOR 1.00 2.00 2.00 2.00	0.1 INT. 0.73 TOT DW ERSHP/ 16. 16. 11. 37. 62.	HRJ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/TIME L.20 DT OPE TING/Y 3.2 12.0 0.0 3.5	ER- /R 20 75 0 50 75	
PICAUP 11 LINE NO. ITEM MO. ITEM MISC 5 ELECTRIC FENCE 23 WATER TANK 44 WORKING CHUTE 45 PORTABLE CORAL 46 PORT LOAD CHUTE	SI 0. 1134- 100. 1.	MACHI DEPR 1-06 ANNU/ 2E UI 00 00 HI 00 00 HO 00	INERY IN O AL COS HIT LE 1 3 . 5 1	FIXED A SUR. .04 T SUMMA LIST PRICE 80.00 50.00 50.00 50.00 50.00	ND VAR I TAX 0.11 RV FOR DEPREC IATION 16.00 15.00 35.00 57.50 15.00	A BLE TOTA EQUIP INTE	COST L FIXI 1.22 MENT 4.00 7.50 5.25 7.50 8.75 7.50	PER HO ED RE L ANO LI INS AN O. O. I. I. O.	UR PAIR .01 VESTOC UR- CE 24 45 31 05 72 45	FUEL 1.62 K TAXES 0.40 0.75 0.53 1.75 2.48 0.75	REPAIR 3.2 12.7 0.0 3.2 5.1 3.0	LUB. 0.24	TOTAL VARIA 2.6 FUEL LUBE D.Q 0.0 0.0 0.0 0.0 0.0 0.0 0.0	HOURS LABOR 1.00 16.00 2.00 2.00 2.00	0.1 INT. 0.73 TOT OM ERSHP/ 16. 16. 11. 37. 62. 16.	HR/ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 0	/TIME 1.00 DT OPE TING/ 3.12.1 0.0 3.1 5.1 3.0	ER- /R 20 75 50 75 50	
PICAUP 11 	SI 0. 134. 1134. 100. 1.	MACHI DEPR 1-06 ANNU/ ZE UN 0 00 HI 00 HI 00 HO 00 HO 00 HO	INERY IN O AL COS HIT LE 1 - 1 - 1 - 5 - 5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	FIXED A SUR04 T SUMMA LIST PRICE 80.00 50.00 50.00 75.00 50.00 RGES MA UMBER	ND V4R I TAX 0.11 RV FOR DEPREC 1AT IGN 16.00 15.00 10.50 35.00 15.00 DE IN T PROPCR.	ABLE TOTA EQUIP INTE	COST L FIX 1.22 NENT REST 4.00 7.50 5.25 7.50 8.75 7.50 8.75 7.50	PER HO ED RE L ANO LI INS AN O. O. I. I. O. FOR E OPERAT	UR PAIR .01 VESTOC UR- CE 24 45 31 05 72 45 31 05 72 45 05 72 45 05 72 10 05 72 10 05 72 10 05 72 10 05 72 10 05 72 10 05 72 10 05 72 10 72 72 72 72 72 72 72 72 72 72 72 72 72	FUEL 1.62 K TAXES 0.40 0.75 0.53 1.75 2.48 0.75 NT AND ITER ST L	REPAIR 3.2 12.7 0.0 3.2 5.7 3.0 1.0 1.1 VESI ABOR +	LUB. 0.24 S AND 0 5 0 75 0 0 75 0 0 75 0 0 75 0 0 75 0 0 75 0 0 75	TOTAL VARIA 2.6 FUEL 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	HOURS LABUR 1.00 16.00 2.00 2.00 2.00	0.1 INT. 0.73 TOT OW ERSHP/ 16. 16. 11. 37. 62. 16.	HR / 1 1 7 4 20 3 4 80 10 20	/TIME 1.20 DT OPE FING/Y 3.2 12.5 0.0 3.5 5.5 3.0	ER- /R 20 75 30 50 75 30	
PICAUP 11 LINE 10. ITEM 0. ITEM 0. ITEM 0. SELECTRIC FENCE 23 MATER TANK 44 MORKING CHUTE 45 PORT LOAD CHUTE 46 PORT LOAD CHUTE LINE NO. ITEM	SI 0. 1134. 100. 1. 512	MACHI DEPR 1-06 ANNU/ 2E UN 00 HI 00 HI	INERY IN O AL COS NIT LE 1 - 1 - 1 - 1 - 5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	FIXED A SUR. .04 T SUHMA LIST PRICE 80.00 50.00 50.00 50.00 50.00 T5.00 50.00 T5.00 50.00 T5.00 50.00 T5.00 50.00	NO VARI TAX 0.11 RY FOR DEPREC 1ATION 16.00 15.00 15.00 57.50 15.00 DE IN T PROPCR. CHARGED	ABLE TOTA EQUIP INTE INTE	COST L FIX 1.22 MENT REST 4.00 7.50 5.25 7.50 8.75 7.50 8.75 7.50 UDGET RSHP RAGES 0.17	PER HQ ED RE L ANO LI INS O. O. I. C. FOR E CHARG	UR PAIR .01 VESTOC UR- CE 24 45 31 05 72 45 QUIPME ING IN ES CH 03	FUEL 1.62 K TAXES 0.40 0.75 0.53 1.75 2.88 0.75 NT AND ITERST L IARGES 0.024	REPAIR 3.2 12.7 0.0 3.5 3.5 3.5 3.5 1 3.5 4 500 H CHARGE	LUB. 0.24 5 00 5 00 5 00 25 0 2 2 2 2	TOTAL VARIA 2.6 FUEL 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	HQURS 4 4 1.00 2.00 2.00 2.00 2.00	0.1 INT. 0.73 TOT OW ERSHP/ 16. 11. 37. 62. 16.	HR, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/TIME 1.00 DT OPE TING/Y 12.0 0.0 3.5 5.0 3.0	ER- /R 20 75 50 75 50	
PICAUP 11 PICAUP 11	SI 0. 1:34- 1:00. 1. SIZ 0. 1.	MACHI DEPR 1-06 ANNU 2E UN 00 HI 00 HI 00 HI 00 HI 00 HI	INERY IN O AL COS HIT LE L J J J LE L KL CHA	FIXED A SUR. .04 T SUHMA LIST PRICE 80.00 50.00 50.00 75.00 50.00 75.00 50.00 RGES MA UMBER ITENS 1.00	NO VAR I TAX 0.11 RY FOR DEPREC IATION 16.00 10.50 35.00 57.50 DE IN T PROPCR. CHARGED 0.01 0.01	ABLE TOTA EQUIP INTE INTE	COST L FIX 1.22 MENT 4.00 7.50 8.75 7.50 0.15 0.16	PER HQ ED RE L ANO LI INS AN O. O. O. O. I. I. CHARG CHARG O.	UR PAIR .01 VESTOC UR- CE 24 45 31 05 72 45 QUIPME ING IN ES CH 03 13	FUEL 1.62 K TAXES 0.40 0.75 0.53 1.75 2.88 0.75 NT AND ITERST L IARGES 0.07	REPAIN 3.2 12.7 0.0 3.5 5.1 3.0 UIVESI ABOR + CHARGE 0.0	LU8. 0.24 0.25 0.075 0.075 0.0 0.075 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	TOTAL VARIA 2.6 FUEL 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	HOURS 4 4 1.00 16.00 2.00 2.00 2.00 2.00	0.1 INT. 0.73 TOT OW ERSHP/ 16. 16. 11. 37. 62. 16.	HR, 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/TIME L.00 DT OPF TING/ 3.12. 0.0 3.5 5.1 3.0	ER- /R 20 75 30 75 30	
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of steer weight and daily gain to AUM equivalence is shown in Table 21, Appendix A.

The computerized budget program produces the printed format in Table 13, which contains a budget resulting from buying steers in late October and grazing on winter wheat and SG/B for the first year of the study. Finally the cattle were finished in a commercial feedlot to a final weight of 1007 lb (457 kg). The production section tells what was sold from the enterprise, 10.07 cwt adjusted for two percent death loss at a price of \$57.80 the choice steer product. Thus, gross receipts were \$570.41.

Operating inputs include all cash costs for the production system, except cash outlays of interest and hired labor which are included later. The list reflects the range of inputs included. The next page of the budget shows inputs by months and allows the timing of costs and sales to be studied. Feed inputs are for pasture, hay, starter feed, salt and minerals. The charge for small grains pasture is \$18.00 per AUM. This is equivalent to the typical rental charge of \$2.25 per cwt of beginning steer weight per month grazed for the winter grazing season. Thus, it covers rental pasture income forgone on the winter Native pasture used in the receiving program in October is wheat. charged at \$5.00 per AUM. The charge for SG/B pastures was \$14.00 per AUM, and is based on custom rates for preparing, seeding and fertilizing the pasture. The charge for SG/B pastures is similar to the wheat pasture charge (\$18.00 per AUM), and thus would be an approximate estimate of the charge of wheat pasture graze-out during the spring. Other costs are for veterinary medical cost, trucking, buying and selling assistance and ad valorem taxes. The major remaining items

include feed consumed in the feedlot and the feed margin and feedlot charges. Amounts and prices for each are indicated in appropriate columns. Machinery and equipment costs are for fuel and maintenance on trucks, pickups and facilities used in the October to July operation (non-feedlot period). Total operating costs plus pasture charges are \$524.29.

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After operating costs are subtracted from total receipts, \$46,12 remains to pay for land, labor, capital, machinery, overhead, risk and management. Successive steps in the budget charge for capital, machinery and equipment ownership costs and labor.

Interest is charged at ten percent on annual and intermediate (machinery and equipment) capital. The annual operating capital for operating inputs totaling \$524.29 is only \$289.56, when adjusted for the annual equivalent part of a year it is used. The annual interest rate may be the bank borrowing rate or the value of owned capital used in an alternative investment with equal risk. As will be discussed later, interest on machinery and equipment might not need to be considered in making decisions relative to stocker programs if the machinery and equipment are already on hand. That interest is charged as indicated, the residual to land, labor, machinery, overhead, risk and management is \$15.59.

The ownership cost section recognizes costs of having machinery and equipment available for the cattle. These capital items depreciate in value and require payment of taxes and insurance. If the producer would have the machinery and equipment whether he has the cattle or not, he might ignore ownership costs in making stockering decisions.

The second page of the budget lists machinery and equipment items assumed used by this stocker enterprise, along with prices and other assumptions affecting costs. Ownership costs total \$3.06.

If all labor is hired, labor would cost \$9.03. Labor requirements per month for machinery, equipment and direct livestock labor are given on page two of the budget. Machinery labor is for maintaining and operating machines, equipment labor is for equipment and fence maintenance and livestock labor is for checking and working cattle. After the charge for all labor, returns to land, risk and management are \$3.49.

After the best estimate of costs and receipts have been determined for a particular production system, managerial interpretation is needed. Different producers can logically make different decisions, based upon their own production resource situation. The following case samples are illustrative of the possibilities.

<u>Case A</u>. A manager who must buy all inputs as described, borrow all money, add or keep machinery and equipment on the farm to handle the stockers, and hire all labor to pursue all phases of the production enterprise in Table 13, would make \$3.49 for his risk and management and to help pay his overhead costs of being in the business. He should, however, examine budgets for some of the separate phases to see if any are more profitable to him. For example, he might run stockers on wheat pasture and sell them or run them on small grains-interseeded bermudagrass or graze-out wheat. He might use a farm feedlot or sell the cattle after the stocker phase.

<u>Case B</u>. A manager who has the winter wheat pasture, hay and native pastures borrows annual capital, has machinery and equipment on hand and underused, and has excess labor could earn:

Budgeted return to overhead, risk and management	\$ 3.49
Own labor	+ 9.03
Machinery and equipment interest	+ 1.57
Ownership costs	+ 3.06
Winter wheat pasture, hay and native pasture	+56.29
	\$73.44

The \$73.44 is the return per head for labor, machinery and equipment, hay and pasture, overhead, risk and management. He would pay all other costs including cost of interseeding the bermudagrass pastures and interest on annual capital.

Enterprise budgets developed from each production system for the first and second years of the study are shown in Appendix B and C, respectively. Only the first page of each budget is included.

In this study returns of the alternative beef production systems will be discussed for the two resource cases cited earlier. Enterprise budgets were developed for separate as well as combinations of production phases. Direct economic advantages accrue from multiple phase enterprises, in which cattle are hauled to and started on the farm one time. Thus, hauling, labor, marketing and medical economics are achieved compared to a production chain involving several owners at several locations.

Returns (\$/head) of the production systems are shown in Table 14. For producers who must pay all costs (Resource Case A), most of the

Year:			197	6-77	1977-78			
Resource Ca	se:		A <sup>a</sup>	Bp	Aa	Bb		
Stocker pha	se: Wheat	pasture			\$ 23.15	89.44	-31.05	43.50
Finishing system	Spring <sup>C</sup> SG/B	Summer bermudagrass	Grain on grass	Commercial feedlot		•		
Iq	X			4 	\$ 34.71	104.68	7.47	84.76
Ie	X			x	3.49 <sup>f</sup>	73.44	-54.21	23.08
II	. X .	x		•	-13.14	84.07	-49.91	51.59
III			X		-59.72	31.84	-92.34	5.96
V				X	-48.92	18.30	-66.73	7.81
Stocker pha	ise: Bermud	agrass hay			\$-74.41	-31.30	-72.20	-10.41
Finishing system	Spring <sup>C</sup> SG/B	Summer bermudagrass	Grain on grass	Commercial feedlot				
VId	X				\$-30.90	14.94	-40.45	24.07
٧Ie	X			X	-72.48	-26.65	-129.48	-44.80
VII	X	X			13.12	77.43	-39.51	47.23
VIII			X		-122.88	-40.40	-167.96	-67.07
ч <b>ү</b> н				X	-88.21	-45.10	-134.48	-72.70
No stocker	phase							
Commercial	feedlot				\$-29.20	-25.21 <sup>g</sup>	-54.86	-51.31 <sup>9</sup>
Producer-ow	med feedlot				- 39 . 99	-15.03	-65.28	-38.01

# TABLE 14. RETURNS (\$/HEAD).FROM BEEF PRODUCTION SYSTEMS FOR TWO PRODUCER RESOURCE CASES

<sup>a</sup>Producer borrows money, rents pasture, hires labor, adds machinery and equipment costs and purchases all other inputs.

<sup>b</sup>Producer has labor, excess machinery and equipment capacity, all pasture and hay. He purchases all other inputs, pays for interseeding bermudagrass pastures, and borrows operating capital.

<sup>C</sup>Small grains-interseeded bermudagrass pasture.

<sup>d</sup>Feeder cattle sold at end of 60-day grazing period on SG/B.

<sup>e</sup>Fed cattle sold at end of feedlot period.

<sup>f</sup>Enterprise budget shown in Table 13.

 ${}^g\!D$  ifference between resource case A and B is attributed to value of producer carrying cattle through a 3-week receiving period.

systems utilizing wheat pasture during the stocker phase show positive returns. In Resource Case B, when the return to the producers labor, pasture hay and excess machinery and equipment capacity are considered, each system which utilized wheat pasture reflected a positive return. The returns under Case B might be regarded as the amount of money the producer would have for family living, debt repayment and maintenance of his capital stock. The returns are simply the residual return to resources for which no charge has been made. Even though the feedlot shows a positive return, it did not appear to add to the returns achieved from the pasture systems alone.

The returns under Resource Case A are the one the producer should consider if he has other uses for his pasture, labor, machinery and equipment resources. It is assumed that the alternative uses would pay a return equal to the charge for the resources in Case A. Alternative uses are rental and other livestock enterprises such as a larger cow herd.

Table 14 does not paint an optimistic picture of the practice of roughing cattle through the winter on bermudagrass hay, and then moving them to another pasture system or the feedlot. In the first year, performance data of these cattle indicated that compensatory gains result from this wintering program. However, these gains were not great enough to offset the high cost of the wintering program. Returns were positive, however, in the case B situation when steers grazed SG/B pastures for approximately 60-days or through the summer. These all-forage systems along with the stocker program, also, produced the greatest returns for steers of the wheat pasture production systems.

The greatest returns obtained from the wheat pasture production systems were made by steers that grazed SG/B pastures for approximately 60-days after wheat pasture. These returns were \$34.71 and \$7.47 in the first and second year, respectively, for Case A and \$104.68 and \$84.76 in the first and second year, respectively, for Case B. The greatest returns obtained from steers that were fed bermudagrass hay during the stocker phase were made by steers that grazed SG/B pastures the entire summer. These steers returned from \$32.69 to \$108.73 per head more than they did at the end of the stocker phase.

In general, returns were the lowest for steers fed grain <u>ad</u> <u>libitum</u> on SG/B pastures. The extra management and labor required over other production systems and the poor utilization of grass would partially account for the low returns. Also as discussed earlier, steers fed grain on grass had lower ADG and carcass quality grades than paired, feedlot <u>ad libitum</u>-fed groups.

Returns of fall-weaned calves placed in a commercial or producerowned feedlot were negative. However, when the producer maintained steers in his feedlot and had excess labor (Case B) loses were minimized (\$-15.03, 1976-77; -38.01, 1977-78).

Break-even daily gains, selling price (\$/cwt) used in calculating the break-even daily gains, non-feed and feed costs of steers of the stocker programs and subsequent grazing intervals on SG/B pastures (all-forage production systems) are shown in Tables 15 and 16 for resource Case A and B, respectively. The non-feed and feed production inputs included in resources Cases A and B are shown in Appendix A, Table 22. In resource Case A mean daily non-feed costs were 1.22- and 1.30-fold greater in the first year and 1.24- and 1.47-fold greater in

Production System	Non-feed <sup>a</sup>	Feed <sup>a</sup>	Total	<u>Selling</u> \$/cwt	price <sup>b</sup> ¢/kg	Break-even ADG, kg
1976-77						
Wheat pasture	.60	.50	1.10	69.50	1.53	.72
SG/B-56 days	.55	.49	1.04	66.40	1.46	.71
SG/B-entire summer	.47	.34	.81	59.30	1.31	.62
Bermudagrass hay	.34	.28	.62	77.90	1.72	.36
SG/B-56 days	.36	.31	.67	75.40	1.66	.40
SG/B-entire summer	. 39	.25	.64	68.50	1.51	.42
<u>1977-78</u>	• . •					
Wheat pasture	.55	.48	1.03	69.50	1.53	.67
SG/B-63 days	.52	.47	.99	66.40	1.46	.68
SG/B-entire summer	.55	.36	.91	56.40	1.24	.73
Bermudagrass hay	.46	.34	.80	73.50	1.62	.49
SG/B-63 days	.45	.34	.79	70.50	1.56	.51
SG/B-entire summer	.49	.27	.76	61.80	1.36	. 57

TABLE 15. NON-FEED AND FEED COSTS (\$/HEAD/DAY) FOR ALL-FORAGE PRODUCTION SYSTEMS, RESOURCE CASE A

<sup>a</sup>Production inputs included in non-feed and feed costs are listed in Appendix A, Table 22.

<sup>b</sup>The different selling prices of steers within the same production system of separate years is due to the difference in selling weight.

Production System	Non-feed <sup>a</sup>	Feed <sup>a</sup>	Total	<u>Selling</u> \$/cwt	price <sup>b</sup> ¢/kg	Break-even ADG, kg
1976-77						
Wheat pasture	.51	.03	.54	69.50	1.53	.35
SG/B-56 days	.47	.17	.64	66.40	1.46	.44
SG/B-entire summer	.41	.09	. 50	59.30	1.31	.38
Bermudagrass hay	.20	.06	.26	77.90	1.72	.15
SG/B-56 days	.25	.17	.42	75.40	1.66	.25
SG/B-entire summer	.31	.10	.41	68.50	1.51	.27
1977-78				1		
Wheat pasture	.47	.03	.50	69.50	1.53	.33
SG/B-63 days	.45	.16	.61	66.40	1.46	.42
SG/B-entire summer	.49	.10	.59	56.40	1.24	.48
Bermudagrass hay	.34	.03	.37	73.50	1.62	.23
SG/B-63 days	. 35	.12	.47	70.50	1.56	.30
SG/B-entire summer	.41	.08	.49	61.80	1.36	.36

TABLE 16. NON-FEED AND FEED COSTS (\$/HEAD/DAY) FOR ALL-FORAGE PRODUCTION SYSTEMS, RESOURCE CASE B

<sup>a</sup>Production inputs included in non-feed and feed costs are listed in Appendix A, Table 22.

<sup>b</sup>The different selling prices of steers within the same production system of separate years is due to the difference in selling weight.
the second year than feed costs for steers of the wheat pasture and bermudagrass hay production systems, respectively. Grazing steers for approximately 60-days on SG/B pastures had little effect on daily non-feed, feed and total costs when compared to the respective wheat pasture or bermudagrass hay stocker programs. However, grazing steers on SG/B pastures for the entire summer greatly decreased daily feed costs and, therefore, tended to reduce total daily cost. Non-feed costs were affected less consistently as compared with the two previous production systems. Mean break-even ADG were .68 and .39 kg in the first year and .69 and .52 kg in the second year for steers of the wheat pasture and bermudagrass hay production systems, respectively.

In resource Case B (Table 16) daily non-feed costs were from 1.5- to 17.0-fold greater than feed costs. Daily non-feed costs increased with each interval of grazing SG/B pastures for steers that were fed bermudagrass hay during the stocker period. In contrast, daily non-feed costs tended to decrease (1976-77) or remain the same (1977-78) with each interval of grazing SG/B pasture for steers from the wheat pasture program. Daily feed costs were the lowest for the stocker production systems, and were the greatest for the SG/B pasture production systems, where pasture interseeding charges were assessed. Mean break-even ADG were .39 and .22 kg in the first year and .41 and .30 kg in the second year for steers of the wheat pasture and bermudagrass hay production systems, respectively. The increase in non-feed costs of the wheat pasture production systems over non-feed costs of the bermudagrass hay production systems is largely attributed to the decline in selling price of the heavier steers, and is reflected in the increased break-even ADG for both resource Cases A and B.

In conclusion returns, averaged across years, of steers during the wheat pasture stocker program were \$69.36 (\$-3.95 vs \$-73.31) greater, in resource Case A, and \$46.96 (\$66.47 vs \$19.51) greater, in Case B, than returns of steers fed bermudagrass hay during the stocker program. Grazing steers on SG/B pastures for approximately 60 days after wheat pasture boasted returns to \$21.09 and \$94.76 (mean of both years) for resource Case A and B, respectively.

Analysis of costs incurred by steers during the stocker programs indicates that non-feed cost, in resource Case A ranged from \$.34 to \$.60 per head per day and were 1.15- to 1.35-fold greater than feed costs which ranged from \$.28 to \$.50 per head per day. In resource Case B non-feed costs, in the stocker program only, ranged from \$.20 to \$.51 per head per day and were 3.1- to 17.0-fold greater than feed costs which ranged from \$.03 to \$.09 per head per day.

Mean break-even ADG were high in resource Case A situation, i.e., .70 and .43 kg for steers from the wheat pasture and bermudagrass hay stocker programs, respectively. The greater break-even ADG of steers from the wheat pasture stocker program is partially due to the decline in selling price of the heavier feeder steers. Grazing steers on SG/B pastures for approximately 60-days or through the summer had little effect on non-feed costs, but tended to decrease feed costs in the resource Case A situation. However, in the resource Case B situation both non-feed and feed costs tended to increase by grazing steers on SG/B pastures after the stocker program. Break-even ADG tended to increase with increasing time interval of grazing SG/B pastures under both resource cases.

For the price-weight relationships established in this study, steers in the finishing phase that were carried through the winter on a low plane of nutrition (bermudagrass hay) failed to achieve returns as great as those of steers that were carried through the winter on wheat pasture. Although steers fed bermudagrass hay during the stocker program were less fleshy (lower percent carcass fat) and, in the first year of the study, did exhibit compensatory gains when compared with steers from the wheat pasture stocker program, selling these steers at the end of the stocker phase would require an increase in selling price of \$17.51 (case A) and \$7.36 (case B) per hundred pounds in the first year and \$13.62 (case A) and \$1.96 (case B) per hundred pounds in the second year, in order for the producer to break even. Since subsequent gains were not great enough to offset economic losses incurred during the stocker program, economic benefits arising from carrying stocker cattle through the winter on a high plane of nutrition far outweight the economic benefits associated with the subsequent improved performance (compensatory gains) of stocker steers that are carried through the winter on a low plane of nutrition.

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APPENDIX A

TABLES

Finishing group	Date	Yield kg/ha <sup>a</sup>	Crude protein, % <sup>a</sup>	IVDMD, % <sup>b</sup>
Pasture - 56 days <sup>C</sup>	March 14		18.83	59.28
	April 11	635	16.59	69.30
Pasture - entire summer <sup>d</sup>	March 14 April 11	 805	19.02 18.74	59.85 64.01
•	May 19	3342	13.92	50.47
Grain on grass <sup>d</sup>	March 14		18.49	57.49
	April 11	695	16.19	69.56
	May 19	2078	11.11	50.42
	may 19	2078	11.11	50.42

# TABLE 17.FORAGE YIELD AND ANALYSIS OF SMALL GRAINS<br/>INTERSEEDED BERMUDAGRASS PASTURES, 1977

<sup>a</sup>Expressed on a dry matter basis.

<sup>b</sup><u>In vitro</u> dry matter digestibility.

<sup>C</sup>Values represent means of 2 pastures.

 $^{\rm d}{\rm Values}$  represent means of 4 pastures.

Finishing group	Date	Yield kg/ha <sup>a</sup>	Crude protein, % <sup>a</sup>	IVDMD, % <sup>b</sup>
Pasture - 63 days <sup>C</sup>	April 12	760	22.02	63.90
	May 12	1830	15.54	71.69
	June 14	1440	15.87	70.50
Pasture-entire summer <sup>d</sup>	April 12 May 12 June 14 July 31	1220 2203 1365 2150	24.49 13.93 12.03 7.80	73.00 65.41 62.78 47.79
	September 13	2305 -	8.41	46.02
Grain on grass <sup>d</sup>	April 12 May 12 June 14 July 31 September 13	945 2130 1190 1835 2175	22.40 15.87 13.59 9.34 9.80	68.41 69.08 60.83 46.14 45.34

TABLE 18.FORAGE YIELD AND ANALYSIS OF SMALL GRAINS<br/>INTERSEEDED BERMUDAGRASS PASTURES, 1978

<sup>a</sup>Expressed on a dry matter basis.

<sup>b</sup><u>In</u> <u>vitro</u> dry matter digestibility.

<sup>C</sup>Values represent means of 2 pastures.

 $^{\rm d}{\rm Values}$  represent means of 4 pastures.

Pasture:	1	2	3	4
March				
1977 (16)	35	35	35	35
1978 (29)	5	5	5	5
April				
1977	66	66	66	66
1978	53	53	53	53
May				
1977	68	68	68	68
1978	55	76	72	63
June				
1977	66	86	66	86
1978	53	66	60	71
July		·		
1977	79	79	90	79
1978	58	65	55	58
August				
1977	68	126 (29)	68	137
1978	56	55	55	56
September				
1977	20 (9)	0	20 (9)	124 (29)
1978 (24)	59	51	42	59
Total				
1977	402	460	413	595
1978	339	371	342	365

TABLE 19. STEER GRAZING DAYS PER HECTARE PER MONTH FOR SMALL GRAINS-INTERSEEDED BERMUDAGRASS PASTURES<sup>a</sup>

<sup>a</sup>Parenthetical numbers are dates in March and September or August when steers were put in and taken out of pastures, respectively.

		Purchase month <sup>D</sup>			Month	steers so	1d <sup>b</sup>		
steer wt., lb	Unadjusted steer price <sup>a</sup>	Oct	Mar	Apr	May	June	July	Aug	Sept
400-500	77.00	74.90	77.90						
500-600	73.00		73.50		75.40				
600-700	69.00		69.50		70.50				
700	67.00							68.50	
700-800	65.00				66.40				
800	62.50						1		61.80
800-900	60.00								59.30
>900 <sup>C</sup>	57.00					58.00	58.40	58.50	56.40
Fed steers	55.00			56.10	57.00	56.70	57.80	57.80	54.60

TABLE 20. FEEDER AND FED STEER PRICES (\$/CWT) UTILIZED IN ENTERPRISE BUDGETS

<sup>a</sup>Determined from general price relationships among grades and weights of steers sold in the fall of 1978 (Ikerd, 1978).

<sup>b</sup>Adjusted for seasonal variation by multiplying the unadjusted price by the 10 year average ratio for the month steers were bought and sold (Blakley, 1978).

<sup>C</sup>Steer groups that were slaughtered, but carcass quality grades averaged below low-choice were priced in this weight range as heavy feeders.

Body weight, kg	Daily gain, kg	TDN requirements, kg	AUM equivalent
150	0.0	1.5	.3
. •	.25	2.0	.3
	.50	2.3	.4
	.75	2.5	.4
200	0.0	1.9	.4
	.25	2.6	.5
	.50	3.1	.5
	.75	3.5	.5
300	0.0	2.6	.5
	.25	3.5	.6
	.50	4.4	.8
	.75	5.0	.8
400	0.0	3.2	.6
	.25	4.4	.8
	.50	5.5	1.0
	.75	6.3	1.0

# TABLE 21.CONVERSION OF STEER AVERAGE DAILY GAINS TO<br/>ANIMAL UNIT MONTH (AUM) EQUIVALENCEa

<sup>a</sup>l AUM unit is equivalent to a 454 kg cow nursing a calf.

### TABLE 22. PRODUCTION INPUTS INCLUDED IN NON-FEED AND FEED COSTS OF RESOURCE CASES A AND B FOR THE ALL-FORAGE PRODUCTION SYSTEMS

C	ase A	Ca	ase B
Non-feed	Feed	Non-Feed	Feed
Death loss	Starter feed	Death loss	Starter feed
negative cattle margins Medication Trucking Order buyer Sales commission	Cottonseed cake Bermudagrass hay Wheat pasture Bermudagrass (native) pasture	negative cattle margins Medication Trucking Order buyer Sales commission	Cottonseed cake Overseeding bermudagrass pasture
Taxes Machinery fuel and lubrication Machinery and equipment repair	Overseeding bermuda- grass pasture	Taxes Machinery fuel and lubrication Machinery and equipment repair	
Annual operating capital Machinery and equipment investment		Annual operating capital	
Ownership Labor			

APPENDIX B

COMPUTER PRINTOUT OF ENTERPRISE BUDGETS (1976-77)

#### STOCKER STEERS ON WHEAT PASTURE - NOV 17 TO MAR 16, 1977 STK RATE 1 STR / 2 AC - BUY 425 SELL 646 LB HEREFORD X ANGUS (28 DEATH LOSS)

PRODUCTION STRS(6-7)CH TOTAL RECEIPTS	UNITS CWT.	QUANITY 80.0	WEIGHT 6.46	PRICE VA 69.500	LUE/UNIT 448.97	VALUE 439.99 439.99
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
S.G. PASTURE	AUMS	2.88	1.00	2.883	18.00	51.89
BERMUCA HAY	TONS	0.08	1.00	0.080	37.50	3.00
SALT & MIN.	LBS.	7.45	1.00	7.450	0.08	0.60
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
NATIVE PASTURE	AUMS	0.28	1.00	0.280	5.00	1.40
VET & MED.	HD.	1.00	1.00	1.000	2.06	2.06
TRUCK ING	CWT.	10.71	1.00	10.710	0.25	2.68
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
MACH. FUEL & LUBE						1.64
MACHINERY REPAIR COST						0.89
ECUIPMENT REPAIR						0.22
TOTAL OPERATING COST						392.26
RETURNS TO LAND, LABOR, CAPITAL, MACHIN OVER+EAD, RISK, AND MANAGEMENT	ERY.					47.73
CAPITAL COST			PRICE	AMOUN	T	VALIE
ANNUAL OPERATING CAPITAL			0.100	145.91	ò	14.59
MACHINERY INVESTMENT			0-100	6.40	i i	0.64
FOUTPMENT INVESTMENT			0.100	4.36	2	0.44
TOTAL INTEREST CHARGE				10.50	-	15.67
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				* = = = = = = = = = = = =		32.07
OWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)				8 9 49 49 49 40 <b>60 60 60 60 60</b> 40 40 40		
MACHINERY	DOL.					1.07
EQUIPMENT	DOL .					1.02
TOTAL OWNERSHIP COST						2.09
RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT					*******	29.97
LABCR COSTS		~~~~~~~~~	PRICE	HOUR	s	
PACHINERY LABOR			3.000	1.05	6	3.17
EQUIPMENT LABOR			3.000	0.22	0	0.66
LIVESTOCK LABOR			3.000	1.00	0	3.00
TOTAL LABOR COST				2.27	6	6.83
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						23.15
COST PER AUM FIGURED ON STA USED TON BASIS FOR AUM REQU STEER BUY & SELL PRICE - 10 ENTERPRISE 14 AREA AND CCUNTY 28 DET GRADE 4 MACH. COMP. 12 IND. NUMBER 6 ANNUAL CAPITAL MONTH: 3	RTING WEIG IREMENTS A YR AVG SE AIL QQ SPE PRICE VEC	HT (425) X DG 1.86 ASONALLY A CIES 1 AGE T 2 EQUIP.	( \$2.25/CWT/) ADJUSTED 02. E & SEX 3 COMP 12 DVI AUDUA CTA	10 MADER /21/79	, MC KENNEY	

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PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE V	ALUE/UNIT	VALUE
STR (7-8)CH	CWT.	0.98	7.51	66-400	498.66	488.69
TOTAL RECEIPTS	••					488.69
		RATE	NUMBER	TCTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
S.G. PASTURE	AUMS	2.88	1.00	2.883	18.00	51.89
BERMUCA HAY	TONS	0.08	1.00	0.080	37.50	3.00
SALT & MIN.	L8S.	11.00	1.00	11.000	0.08	0.88
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
NATIVE PASTURE	AUMS	0.28	1.00	0.280	5.00	1.40
VET & MED.	HD.	1.00	1.00	0.996	2.12	2.11
TRUCKING	CWT.	11.76	1.00	11.760	0.25	2.94
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
O.S. BERMUDA	AUNS	1.80	1.00	1.800	14.00	25.20
MACH. FUEL & LUBE						2.24
MACHINERY REPAIR COST		•				1.22
EQUIPMENT REPAIR						0.28
TOTAL OPERATING COST						419.04
RETURNS TO LAND, LABOR, CAPITAL, M	ACHINERY.					
OVERFEAD, RISK, AND MANAGEMEN	Т			· · ·	1	69.65
CAPITAL COST			PRICE	A MOU	NT	VALUE
ANNUAL OPERATING CAPITAL			0.100	212.7	33	21.27
MACHINERY INVESTMENT			0.100	8.7	29	0.87
EQUIPMENT INVESTMENT			0.100	7.0	50	0.70
TOTAL INTEREST CHARGE						22.85
RETURNS TO LAND, LABOR, MACHINE	RY.					
OVERHEAC, RISK AND MANAGEM	ENT					46.80
OWNERSHIP COST: (DEPRECIATION,						
TAXES, INSURANCE)						
MACHINERY	DOL.					1.46
ECUIPMENT	DOL.					1.60
TOTAL CWNERSHIP COST						3.06
RETURNS TO LAND, LABOR, OVERHEA	D.					
RISK AND MANAGEMENT						43.74
LABER COSTS			PRICE	HOU	RS	
PACHINERY LABOR			3.000	1.4	40	4.32
EQUIPMENT LABOR			3.000	0.2	50	0.75
LIVESTCCK LABOR			3.000	1.3	20	3.96
TOTAL LABOR COST				3.0	10	9.03
RETURNS TO LAND, OVERHEAD						
RISK AND MANAGEMENT			1			34.71
STOCKER ADG. 1.86 LBS.	: U.S. BERMUDA	ADG. 1.88			MADER	
ESTABLISHMENT COSTS OF	OVERSEEDED BER	MUDAGRASS	IS ON CUSTO	M BASIS.		
COSTS ARE PRORATED BY	AUM UNITS OVER	A 2 MONTH	PERIOD. 02	/21/79		
ENTERPRISE 14 AREA AND COUNTY 2	B DETAIL DO SPE	CIES 1 AGE	E SEX 3			
GRADE 1 MACH. COMP. 12 IND. NUM	BER Z PRICE VEC	T 2 EQUIP.	COMP 12			
ANNUAL CAPITAL MONTH:	5					
PRUCESSED BY	UCPI. UP AGRI.	ELUN C	KLAHUMA STA	IC UNIVERSIT	1	
PRUGRAM DEVELOPE	U BY DEPT. OF.	AGRI. ECON	. UKLAHUMA	STATE UNIVER	2114	
UNIE PRINIEDIUZ/21/19						

WHEAT PASTURE STOCKER TO 646 LBS., 119 DAY Graze overseeded bermudagrass, 56 days, mar. 16 to may 11, 1977

WHEAT PASTURE STOCKER TO 646 LBS., L19 DAYS GRAZED ON SMALL GRAINS OVERSEEDED BERMUDA PASTURES, 197 DAYS WAR 16 TO SEPT 29, 1977

Initial Receives     Rate     Number     Total       OPERATING INPUTS     UNITS     PER UNIT     OF UNITS     UNITS     PERCE       STR CALVIA-SICH     CUT.     1.00     4.25     4.250     74.90     318       S.G. PASTURE     AUMS     2.88     1.00     2.883     18.00     51       STR CALVIA-SICH     CUT.     1.00     4.255     4.250     74.90     318       S.G. PASTURE     AUMS     2.88     1.00     2.883     18.00     50       SALT & HIN.     LBS. 19.81     1.00     1.00     1.00     2.00     5.00       MATIVE PASTURE     AUMS     4.30     1.00     1.200     1.00     2.23       NATURE PASTURE     AUMS     1.00     1.00     1.200     2.25     3       ARCH PLE & LUBE     MUE     1.00     1.00     1.200     2.25     3       MACH FUE & LOBE     MUHS     1.80     1.00     1.00     2.25     3       MACH FUE & LOBE     MUHS     1.80     1.00	PRODUCTION STEERS (8-9)	UNITS CWT.	QUAN I TY 82.0	WE I GHT 8.35	PRICE 59.300	ALUE/UNIT 495.15	VALUE 485.25
RATE     NUMBER     TOTAL       OPERATING INPUTS     UNITS     PERUNITS     UNITS     PERCE     MA       STR CALV14-51CH     CUT.     1.00     4.25     4.250     74.90     318       S.G. PASTURE     AUMS     2.88     1.00     2.883     18.00     51       STATER     FERMICA     LBS.     19.81     1.00     0.280     36.00     51       STATER     FED     CUT.     0.38     1.00     0.280     71.00     2       NATIVE PASTURE     AUMS     4.50     1.00     0.280     71.00     2       NATIVE PASTURE     AUMS     4.50     1.00     1.000     2.30     2     2       NATIVE PASTURE     MD.     1.00     1.00     1.000     2.25     2     3	IUIAL RECEIFIS						
OPERATING INPUTS     UNITS     PER UNIT     OF UNITS     UNITS     PRICE     WITS     WITS     PRICE     W			RATE	NUMBER	TOTAL		
STR CALVIG-SICH     CVT.     1.00     4.25     4.250     74.90     318       S.G. PASTURE     AUMS     0.68     1.00     0.080     37.50     51       STR CALVIG     LOS     0.68     1.00     0.080     37.50     51       STAT TER FEED     CST.     0.38     1.00     0.380     7.10     2       NATIVE PASTURE     AUMS     4.50     1.00     0.400     5.00     50       VET & MED.     HO.     1.00     1.000     1.00     2.403     2       VET & MED.     HO.     1.00     1.00     1.000     2.60     0.25     3       GRORE BUYER COST     HO.     1.00     1.00     1.000     1.00     2.25     3       ACKINERY REPAIR     HO.     1.00     1.00     1.000     2.25     3       MACHINERY REPAIR     COT     1.00     1.000     1.000     2.25     3       MACHINERY REPAIR     COT     1.00     1.000     1.000     2.25     3	OPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
S.C. PASTURE     AUMS     2.88     1.00     2.883     18.00     51       STATT 6 MIN.     LBS.     19.81     1.00     19.810     0.080     37.50     3       STATT 6 MIN.     LBS.     19.81     1.00     19.810     0.080     7.10     2       NATIVE PASTURE     AUMS     4.50     1.00     4.500     5.00     22       NATIVE PASTURE     AUMS     4.50     1.00     4.500     5.00     22       TRUCK ING     CKT.     1.00     1.000     12.600     0.23     3       GRDER BUYER COST     MD.     1.00     1.000     1.000     1.600     3.00     3       TAKES     MO.     1.00     1.000     1.000     1.000     1.200     3       MACH.TVEL & LUBE     MUBS     1.80     1.00     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000     1.000 <t< td=""><td>STR CALV(4-5)CH</td><td>CWT.</td><td>1.00</td><td>4.25</td><td>4.250</td><td>74.90</td><td>318.32</td></t<>	STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
eFRHUZA HAY     TONS     0.C8     1.00     0.080     37.50     3       SALT & HIN.     LBS. 19.81     1.00     19.810     0.081     7.10     2       NATIVE PASTURE     AUMS     4.50     1.00     4.500     5.00     22       VET & MED.     HD.     1.00     1.00     1.000     2.13     2       TRUCK ING     CUT.     1.2400     1.00     1.000     2.000     2.13     2       ARDER BUYER COST     HD.     1.00     1.00     1.000     1.600	S.G. PASTURE	AUMS	2.88	1.00	2.883	18.00	51.89
SLAT & MIN.     LBS.     19-81     1.00     19-810     0.08     1       STARTER FEED     CWT.     0.38     1.00     4.500     5.00     22       NATIVE PASTURE     AUMS     4.50     1.00     4.500     5.00     22       TRUCKING     CWT.     1.00     1.000     1.000     2.13     2       TRUCKING     CWT.     1.00     1.000     1.000     1.000     1.001     1.000     3.00     3       GADER BUYER COST     MD.     1.00     1.000	BERMUCA HAY	TONS	0.08	1.00	0.080	37.50	3.00
STATTER FEED   CWT. 0.38   1.00   0.380   7.10   2     WATIVE PASTURE   AUMS   4.50   1.00   1.000   2.13   2     VET & MED.   HD. 1.00   1.00   1.000   2.13   2   3     CRUCKING   CWT. 12.60   1.000   1.200   1.200   0.253   3     CRORER BUYER COST   HD. 1.00   1.000   1.000   3.00   3     SALES CCMH.   HD. 1.00   1.000   1.000   2.25   2     MACH.FUEL & LUBE   HD. 1.00   1.000   1.400   2.25   2     MACH.FWR REPAIR COST   HD. 1.00   1.000   1.400   2.25   2     MACH.FWR REPAIR COST   HO. 1.00   1.800   1.4000   2.25   2     MACH.FWR REPAIR COST   MACHINERY REPAIR   CO   1   2.000   2.25   2     VOURFEADLRISK, AND MANAGEMENT   OUCERFEADLRISK, AND MANAGEMENT   CA   42     CAPITAL COST   PRICE   ANOUNT   MA     ANNUAL OPERATING CAPITAL   MACHINERY   0.100   13.946   1     EQUIPMENT I	SALT & MIN.	LBS.	19.81	1.00	19.810	0.08	1.58
NATIVE PASTURE     AUMS     4.50     1.00     4.500     5.00     22       VET & RED.     HD.     1.00     1.000     1.000     2.400     0.213     2       TRUCKING     CWT.     12.600     1.000     1.000     0.000     1.200     0.255     3       ORDER BUYER COST     HD.     1.000     1.000     1.000     3.000     3       TAXES     HD.     1.00     1.000     1.000     2.25     2       O.S. BERMUDA     AUMS     1.80     1.000     1.000     2.25     2       OS. BERMUDA     AUMS     1.80     1.000     1.000     2.25     2       OS. BERMUDA     AUMS     1.80     1.000     1.400     2.45     2       OS. BERMUDA     AUMS     1.80     1.000     1.400     2.44     3       TOTAL DERATING COST     VERHEAD.RISKA.AD MANAGEMENT     0.100     354.292     33       MACHINERY INVESTIMENT     0.100     13.966     1     4       GUIPMENT INVESTIMENT	STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
VET & MED.     MD.     1.00     1.000     2.13     2       TRUCKING     CWT.     12.60     1.000     1.2400     0.25     3       ORDER BUYER COST     HD.     1.00     1.000     1.000     1.600     1.000     3.000       TAXES     HD.     1.00     1.000     1.000     2.25     2       D.S. BERMUDA     AUMS     1.80     1.000     1.400     2.25     2       MACH. FUEL 6 LUBE     HD.     1.000     1.000     1.400     2.25     2       MACH. FUEL 6 LUBE     HD.     1.00     1.000     1.400     2.25     2       MACH. FUEL 6 LUBE     AUMS     1.80     1.00     1.800     14.00     2.5       TOTAL DPERATING COST     443     443     4443     4445       PETURNS TO LANDR.ALBOR, CAPITAL MACHINERY.     0.100     354, 292     35       MACHINEY INVESTMENT     0.100     354, 292     35       RETURNS TO LAND, LABOR, PACHINERY.     0.100     7.050     00       OVERFEAD, RISK AND	NATIVE PASTURE	AUMS	4.50	1.00	4.500	5.00	22.50
TRUCKING   CWT.   12.60   12.600   0.253   3     ORDER BUYER COST   HD.   1.00   1.000   1.000   3.00   3     TAXES   HD.   1.00   1.000   1.000   3.00   3     TAXES   HD.   1.00   1.000   1.000   3.00   3     TAXES   HD.   1.00   1.000   1.000   2.25   2     D.S. BERMUDA   AUMS   1.80   1.00   1.800   14.00   25     MACH. FVEL & LUBE   HD.   1.80   1.00   1.800   14.00   25     MACH. HERY REPAIR   CONTAL OPERATING COST   443   443   443     RETURNS TO LAND.LABOR.CAPITAL.MACHINERY.   0.100   354.292   39     MACHINERY INVESTMENT   0.100   354.292   39     MACHINERY INVESTMENT   0.100   7.050   0     TOTAL INTEREST CHARGE   0.100   7.050   0     TOTAL INTEREST CHARGE   0.100   7.050   0     TOTAL INTEREST CHARGE   0.100   7.050   0     COMPREAD, RISK AND MANAGEMENT </td <td>VET &amp; MED.</td> <td>HD.</td> <td>1.00</td> <td>1.00</td> <td>1.000</td> <td>2.13</td> <td>2.13</td>	VET & MED.	HD.	1.00	1.00	1.000	2.13	2.13
ORDER BUYER COST     HD.     1.00     1.00     1.60	TRUCK ING	CWT.	12.60	1.00	12.600	0.25	3.15
SALES CCMM. HD. 1.00 1.000 3.000 3.000   TAXES HD. 1.00 1.000 1.000 2.25 2   D.S. BERMUDA AUMS 1.80 1.000 1.800 14.000 2.25   MACH. FUEL & LUBE AUMS 1.80 1.000 1.800 14.000 2.25   MACH. FUEL & LUBE AUMS 1.80 1.000 1.800 14.000 2.25   MACH. FUEL & LUBE AUMS 1.80 1.000 1.800 14.00 2.25   PACH. FUEL & LUBE AUMS 1.80 1.000 14.000 2.25 2   MACH. FUEL & LUBE AUMS 1.80 1.000 14.000 2.25 2   MACH. FUEL & LUBE AUMS 1.80 1.000 14.000 2.25 2   RETURNS TO LAND.LABOR. CAPITAL MACHNERY 0.100 354.292 35   MACHINERY INVESTMENT 0.100 13.966 1 2   MACHINERY INVESTMENT 0.100 13.966 1   COVERHEAD. RISK AND MANAGEMENT 42 44 44   OVERHEAD. RISK AND MANAGEMENT 42 44 44   CONTAL INVESTMENT 0.100 1.900 1 2	ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
TAXES   HD.   1.00   1.00   2.23   2     O.S. BERMUDA   AUMS   1.80   1.00   1.800   2.43   3     MACH. FUEL & LUBE   AUMS   1.80   1.00   1.800   1.4000   25   2     MACH.FUEL & LUBE   AUMS   1.80   1.00   1.800   1.4000   25   3     MACH.FUEL & LUBE   AUMS   1.80   1.00   1.800   1.4000   24     FURNS TO LAND.LABOR.CAPITAL MACHINERY.   OVERHEAD.RISK.AND MANAGEMENT   44   44     OVERHEAD.RISK.AND MANAGEMENT   0.100   354.292   35     MACHINERY INVESTMENT   0.100   354.292   35     MACHINERY INVESTMENT   0.100   13.966   1     OVERHEAD.RISK AND MANAGEMENT   0.100   7.050   37     RETURNS TO LAND. LABOR, MACHINERY.   0.100   7.050   37     OVERHEAD.RISK AND MANAGEMENT   40   40   40   40     CHNERSHIP COST:   DOL.   2   2   35     MACHINERY   DOL.   2   20   40   40     CHNERSHIP	SALES CCMM.	HD.	1.00	1.00	1.000	3.00	3.00
O.S. BERMUDA AUNS 1.80 1.00 1.400 14.00 25   MACH. FUEL & LUBE 3 1 0 1.400 14.00 25   MACH. FUEL & LUBE 3 1 0 1.400 14.00 25   MACH. FUEL & LUBE 3 1 0 1.00 1.400 14.00 25   MACH. FUEL & LUBE 0 100 14.00 443 1 1   COUPRENT REPAIR COST 444 444 444 444   OVERFEAD,RISK.AND MANAGEMENT 44 444 444   CAPITAL COST PRICE AMOUNT 44   ANUAL OPERATING CAPITAL, MACHINERY. 0.100 354.292 35   MACHINERY INVESTMENT 0.100 13.966 1   EQUIPMENT INVESTMENT 0.100 7.050 0   TOTAL INTEREST CHARGE 0.100 7.050 0   RETURNS TO LAND, LABOR, MACHINERY, 00L. 2 2   OVERHEAD, RISK AND MANAGEMENT 4 4 4   TAKES, INSURANCEJ 00L. 2 2   MACHINERY DOST 00L. 2 3   TOTAL CWRENHEAD 3.000 2.304 6   EQUIPMENT 000	TAXES	HD.	1.00	1.00	1.000	2.25	2.25
MACH. FUEL & LUBE MACH. FUEL & LUBE MACH. REPX REPAIR COST FOUL OPERATING COST TOTAL OPERATING COST AETURNS TO LAND. LABOR.CAPITAL, MACHINERY. OVERFEAD.RISK.AND MANAGEMENT CAPITAL COST AANUAL OPERATING CAPITAL ANNUAL OPERATING CAPITAL OPERATING ANNUAL OPERATING CAPITAL OPERATING CAPITAL OPERATING ANNUAL CHANCESHIP COST ANNUAL CHANCESHIP COST ANNUAL CHANCESHIP COST ANNUAL CHANCESHIP CAPITAL OPERATING ANNUAL CHANCON OPERATING ANNUAL CHANCESHIP CAPITAL OPER	O.S. BERMUDA	AUMS	1.80	1.00	1.800	14.00	25.20
PACHINENT REPAIR COST EQUIPMENT REPAIR COVER-EAD.RISK.AND MANAGEMENT OVER-EAD.RISK.AND MANAGEMENT CAPITAL COST ANNUAL OPERATING CAPITAL ANNUAL OPERATING CAPITAL OVER-EAD.RISK.AND MANAGEMENT CAPITAL COST ANNUAL OPERATING CAPITAL O.100 354.292 35 MACHINERY INVESTMENT C.100 13.966 1 COUPMENT INVESTMENT C.100 7.050 0 TOTAL INTEREST CHARGE COVER-EAD. RISK AND MANAGEMENT OVER-EAD. RISK AND MANAGEMENT COVER-EAD. RISK AND MANAGEMENT COVER COSTS RETURNS TO LAND. LABCR. OVERMEAD. RISK AND MANAGEMENT COVER COSTS MACHINERY LABOR RISK AND MANAGEMENT ADG: STOCK EA. LABOR RISK AND MANAGEMENT ADG: STOCK EAP. LABO EDSI IST 56 DAYS GRAZING. LABOLE: ENTIRE 197 DAYS96 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS. COSTS ARE PRORATED BY ANM UNITS OVER A 2 MONTH PERIDO. 02/21/79 MADER ENTERPRISE 15 AREA AND COUNTY 28 DETAIL 02 SPECIES 1 AGE 6 SX 3 CADE I MACH. COMP. JZ IND. NUMBER 2 PRICE YECT 2 EQUIP. COMP JZ ENTERPRISE 15 AREA AND COUNTY 28 DETAIL 02 SPECIES 1 AGE 6 SX 3 CADE I MACH. COMP. JZ IND. NUMBER PRICE YECT 2 EQUIP. COMP JZ	MACH. FUEL & LUBE						3.09
EUDIPRENT REPAIR 443   TOTAL OPERATING COST 443   RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, 443   OVER-EAD, RISK, AND MANAGEMENT 42   CAPITAL COST PRICE   ANNUAL OPERATING CAPITAL 0.100   TOTAL INTERST CHARGE 3.7   RETURNS TO LAND, LABOR, MACHINERY, 00L.   OVERFEAD, RISK AND MANAGEMENT 4   TOTAL CWNERSHIP COST 00L.   RETURNS TO LAND, LABOR, OVERHEAD, 3.000   RISK AND MANAGEMENT 0   CACHINERY LABOR 3.000   LABOR COST 3.000   MACHINERY LABOR 3.000   CUIPPENT LABOR 4.594   RETURNS TO LAND, CVERHEAD 4.594   RISK AND MANAGEMENT -13 <t< td=""><td>MACHINERY REPAIR COST</td><td></td><td></td><td></td><td></td><td></td><td>1.77</td></t<>	MACHINERY REPAIR COST						1.77
RETURNS TO LAND.LABOR.CAPITAL.MACHINERY. OVERFEAD.RISK.AND MANAGEMENT   42     CAPITAL COST   PRICE   AMOUNT   VA     ANNUAL OPERATING CAPITAL   0.100   354.292   35     MACHINERY INVESTMENT   0.100   13.966   1     EQUIPMENT INVESTMENT   0.100   7.050   0     TOTAL INTEREST CHARGE   31   31     RETURNS TO LAND. LABOR, MACHINERY.   0.100   7.050   0     OVERFEAD.RISK AND MANAGEMENT   42   42   42     CWNERSHIP COST:   (DEPRECIATION.   43   43     CWNERSHIP COST:   00L.   42   42     CWNERSHIP COST:   00L.   42   44     CWNERSHIP COST   00L.   44   44     RETURNS TO LAND. LABCR, OVERHEAD.   1   1   1     RETURNS TO LAND. LABCR, OVERHEAD.   3.000   2.304   6     RETURNS TO LAND, LABCR   3.000   2.304   6     INCELINERY LABOR   3.000   2.304   6     RETURNS TO LAND, GVERHEAD   3.000   2.304   6     RETURNS TO LAND, GVERHEAD   3.000   2.404	TOTAL OPERATING COST						443.15
CAPITAL COST   PRICE   AMOUNT   VA     ANNUAL DPERATING CAPITAL   0.100   354.292   35     MACHINERY INVESTMENT   0.100   13.966   1     EQUIPMENT INVESTMENT   0.100   7.050   C     TOTAL INTEREST CHARGE   0.100   7.050   C     RETURNS TO LAND, LABOR, MACHINERY.   0.100   7.050   C     OWERFEAD, RISK AND MANAGEMENT   0.100   7.050   C     CWNERSHIP COST:   IDEPRECIATION,   7   7     TAXES, INSURANCE)   MACHINERY   DOL.   2     MACHINERY   DOL.   2   2     FEURNS TO LAND, LABCR, OVERHEAD,   1   1   1     RETURNS TO LAND, LABCR, OVERHEAD,   3.000   2.304   6     RETURNS TO LAND, LABCR   3.000   2.304   6     GUIPMENT   3.000   2.304   6     MACHINERY   3.000   2.304   6     MACHINERY   3.000   2.040   6     MACHINERY   3.000   2.040   6     MACHINERY   3.000   2.040   6	RETURNS TO LAND, LABOR, CAPITAL, MACHIN OVERHEAD, RISK, AND MANAGEMENT	ERY,					42.11
CARTINGL COST TANUAL DEPRATING CAPITAL 0.100 34.292 35   MACHINERY INVESTMENT 0.100 13.966 1   EQUIPMENT INVESTMENT 0.100 7.050 0   TOTAL INTEREST CHARGE 0.100 7.050 37   RETURNS TO LAND, LABOR, MACHINERY. 0.100 7.050 37   OVERHEAD, RISK AND MANAGEMENT 4   CWNERSHIP COST: 00PRECIATION,   TAKES, INSURANCE) 00L. 2   MACHINERY DOL. 2   EQUIPMENT DOL. 1   TOTAL CWNERSHIP COST 00L. 1   TOTAL CWNERSHIP COST 00L. 1   RETURNS TO LAND, LABOR, OVERHEAD, 3.000 2.304   RETURNS TO LAND, LABOR 3.000 2.304   MACHINERY LABOR 3.000 2.040   MACHINERY LA				PRICE	AMO	INT	VALUE
MACHINERY INVESTMENT   0.100   13.966   1     EQUIPMENT INVESTMENT   0.100   7.050   C     TOTAL INTEREST CHARGE   37     RETURNS TO LAND. LABOR, MACHINERY.   000   7.050   C     OVERHEAD. RISK AND MANAGEMENT   4     CWNERSHIP COST:   00L.   2     MACHINERY   DOL.   2     EQUIPMENT   DOL.   1     TOTAL CWNERSHIP COST   3   3     RETURNS TO LAND. LABOR, OVERHEAD,   3.000   2.304     RETURNS TO LAND. LABOR   3.000   2.304     MACHINERY LABOR   3.000   2.304     MACHINERY LABOR   3.000   0.250     MACHINERY LABOR   3.000   2.304     MACHINERY LABOR   3.000   2.304     MACHINERY LABOR   3.000   2.440     CUIVESTOCK LABOR   3.000   2.040     MACHINERY LABOR COST   -13   -13     MACHINERY LABOR COST   <	ANNIAL OPERATING CAPITAL			0-100	354	292	35.43
EQUIPMENT INVESTMENT   0.100   7.050   C     TOTAL INTEREST CHARGE   37     RETURNS TO LAND, LABOR, MACHINERY,   37     OVERHEAD, RISK AND MANAGEMENT   4     CWNERSHIP COST: (DEPRECIATION,   4     TALES, INSURANCE   4     MACHINERY   DOL.     EQUIPMENT   DOL.     TOTAL CWNERSHIP COST   1     TOTAL CUNERSHIP COST   3     RETURNS TO LAND, LABOR, OVERHEAD,   1     RISK AND MANAGEMENT   00L.     LABCR COSTS   PRICE     MACHINERY LABOR   3.000     EQUIPMENT LABOR   3.000     LABCR COSTS   PRICE     MACHINERY LABOR   3.000     EQUIPMENT LABOR   3.000     TOTAL LABOR COST   4.594     TOTAL LABOR COST   4.594     ADGI: STOCKER, 1.86 LB; IST 56 DAYS GRAZING, 1.88 LB; ENTIRE 197 DAYS, .96 LB     ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS,     COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIDO. 02/21/79     ADGI: STOCKER, 1.80 CHAIL ON SPECIES 1 AGE 6 SEX 3     COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIDO. 02/21/79     ENTERPRISE 14 AREA AND	NACHINERY INVESTMENT			0.100	13.	966	1.40
TOTAL INTEREST CHARGE   37     RETLENS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT   4     CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)   4     MACHINERY   DOL.     Yeturns to Land, LABCR, OVERHEAD, RISK AND MANAGEMENT   1     RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   3     LABCR COSTS   PRICE     MACHINERY LABOR   3.000     RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT   -13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   13     RETURNS TO LAND, OVERHEAD   -13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   13     ADG: STOCKER, 1.86 LB: ST OF OVERSEEDED BERMUDAGRASS IN DN CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIDO. 02/21/79     ADG RISE AND COUNTY 28 D	FOUTPMENT INVESTMENT			0.100	7.	050	0.70
RETLERNS TO LAND, LABOR, MACHINERY, OVERPEAD, RISK AND MANAGEMENT   4     CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)   4     MACHINERY   DOL.     TOTAL CWNERSHIP COST   00L.     TOTAL CWNERSHIP COST   3     RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   00L.     LABCR COSTS   PRICE     MACHINERY LABOR   3.000     EGUIPMENT LABOR   3.000     MACHINERY LABOR   3.000     RETURNS TO LAND, GVERHEAD   3.000     RISK AND MANAGEMENT   -13     ADG: STOCKER, 1.86 LB: IST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB     ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS,     COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79     MADER   ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3     GRADE 14 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 1	TOTAL INTEREST CHARGE						37.53
CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)   DOL.   2     MACHINERY   DOL.   1     TOTAL CWNERSHIP COST   1   1     TOTAL CWNERSHIP COST   1   1     RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   0   1     LABCR COSTS   PRICE   HOURS     MACHINERY LABOR   3.000   2.304     LABCR COSTS   PRICE   HOURS     MACHINERY LABOR   3.000   2.304     FEGUIPPENT LABOR   3.000   0.250     LIVESTOCK LABOR   3.000   2.040     TOTAL LABOR COST   4.594   13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	RETURNS TO LAND, LABOR, MACHINERY, Overfead, Risk and Management						4.57
TAXES, INSURANCE)   DOL.   2     MACHINERY   DOL.   1     TOTAL CHNERSHIP COST   DOL.   1     RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   0   0     LABCR COSTS   PRICE   HOURS     MACHINERY LABOR   3.000   2.304     EQUIPENT LABOR   3.000   2.304     LIVESTOCK LABOR   3.000   2.040     TOTAL LABOR COST   4.594   13     RETURNS TO LAND, GVERHEAD   -13   -13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, -96 LB   ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIDO. 02/21/79   MADER     ENTERPRISE 14 ARE AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	CWNERSHIP COST: (DEPRECIATION.						
MACHINERY DOL. 2   EGUIPMENT DOL. 1   TOTAL CWNERSHIP COST 3   RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   ABCR COSTS PRICE   MACHINERY LABOR 3.000   EQUIPPENT LABOR 3.000   LABCR COSTS PRICE   MACHINERY LABOR 3.000   EQUIPPENT LABOR 3.000   IVESTOCK LABOR 3.000   TOTAL LABOR COST 4.594   MACHINERY 4.594   MACHINERY ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS,   COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIDD. 02/21/79 MADER   ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	TAXES, INSURANCE)						
EQUIPMENT   DOL.   1     TOTAL CWNERSHIP COST   3     RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   00     LABCR COSTS   PRICE     MACHINERY LABOR   3.000     EQUIPMENT LABOR   3.000     LIVESTOCK LABOR   3.000     TOTAL LABOR COST   4.594     RETURNS TO LAND, GVERHEAD   -13     RETURNS TO LAND, GVERHEAD   -13     RETURNS TO LAND, GVERHEAD   -13     RESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QQ SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	MACHINERY	DOL.					2.33
TOTAL CWNERSHIP COST   3     RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   0     LABCR COSTS   PRICE   HOURS     MACHINERY LABDR   3.000   2.304   6     EQUIPPENT LABOR   3.000   0.250   0     LIVESTOCK LABOR   3.000   2.040   6     TOTAL LABOR COST   3.000   2.040   6     RETURNS TO LAND, GVERHEAD   3.000   2.040   6     RETURNS TO LAND, GVERHEAD   -13   -13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   -13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   -13     ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QQ SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	ECUIPMENT	DOL.					1.60
RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT   C     LABCR COSTS   PRICE   HOURS     MACHINERY LABOR   3.000   2.304   6     EQUIPMENT LABOR   3.000   2.304   6     IVESTOCK LABOR   3.000   0.250   0     TOTAL LABOR COST   3.000   2.040   6     RETURNS TO LAND, GVERHEAD   3.000   2.040   6     RETURNS TO LAND, GVERHEAD   -13   -13     ADG: STOCKER, 1.86 LB; 1ST 56 DAYS GRAZING, 1.88 LB; ENTIRE 197 DAYS, .96 LB   -13     ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QQ SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	TOTAL CWNERSHIP COST						3.94
LABER COSTS PRICE HOURS MACHINERY LABOR ' 3.000 2.304 6 EQUIPPENT LABOR 3.000 0.250 0 LIVESTOCK LABOR 3.000 2.040 6 TOTAL LABOR COST 4.594 13 RETURNS TO LAND, GVERHEAD RISK AND MANAGEMENT -13 ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79 MADER ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QD SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT						0.64
MACHINERY LABOR   3.000   2.304   6     EQUIPMENT LABOR   3.000   0.250   0     LIVESTOCK LABOR   3.000   2.040   6     TOTAL LABOR COST   4.594   13     RETURNS TO LAND, GVERHEAD   -13   -13     ADG: STOCKER, 1.86 LB; 1ST 56 DAYS GRAZING, 1.88 LB; ENTIRE 197 DAYS, .96 LB   -13     ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VÉCT 2 EQUIP. COMP 12	LABCR COSTS			PRICE	HO	JRS	
EQUIPPENT LABOR   3.000   0.250   0     LIVESTOCK LABOR   3.000   2.040   6     TOTAL LABOR COST   4.594   13     RETURNS TO LAND, GVERHEAD   4.594   13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB   -13     ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIDD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3   GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	MACHINERY LABOR			3.000	2.	304	6.91
LIVESTOCK LABOR 3.000 2.040 6 TOTAL LABOR COST 4.594 12 RETURNS TO LAND, GVERHEAD RISK AND MANAGEMENT -13 ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79 MADER ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	ECUIPPENT LABOR			3.000	0.	250	0.75
TOTAL LABOR COST 4.594 13 RETURNS TO LAND, GVERHEAD RISK AND MANAGEMENT -13 ADG: STOCKER, 1.86 LB; 1ST 56 DAYS GRAZING, 1.88 LB; ENTIRE 197 DAYS, .96 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79 MADER ENTERPRISE 14 AREA AND COUNTY 28 DETAIL Q0 SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	LIVESTOCK LABOR			3.000	2.	040	6.12
RETURNS TO LAND, GVERHEAD RISK AND MANAGEMENT   -13     ADG: STOCKER, 1.86 LB: 1ST 56 DAYS GRAZING, 1.88 LB: ENTIRE 197 DAYS, .96 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79   MADER     ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	TOTAL LABOR COST				4.	594	13.78
ADG: STOCKER, 1.86 LB; 1ST 56 DAYS GRAZING, 1.88 LB; ENTIRE 197 DAYS, .96 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79 MADER ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE & SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VÉCT 2 EQUIP. COMP 12	RETURNS TO LAND. CVERHEAD RISK AND MANAGEMENT						-13.14
ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IN ON CUSTOM BASIS, COSTS ARE PRORATED BY AUM UNITS OVER A 2 MONTH PERIOD. 02/21/79 MADER ENTERPRISE 14 AREA AND COUNTY 28 DETAIL QO SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VÉCT 2 EQUIP. COMP 12	ADG: STOCKER, 1.86 LB; 1ST	56 DAYS GR	AZING, 1.	88 LB; ENTIR	E 197 DAYS.	.96 LB	
ENTERPRISE 14 AREA AND COUNTY 28 DETAIL OO SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12	ESTABLISHMENT COST OF OVERS COSTS ARE PRORATED BY AUM U	SEEDED BERN INITS OVER	UDAGRASS	PERIOD. 02	BASIS, /21/79	MADER	
GRADE 1 MACH. COMP. 12 IND. NUMBER & PRICE VECT 2 EQUIP. COMP 12	ENTERPRISE 14 AREA AND COUNTY 28 DET	ALL QO SPE	ECIES 1 AG	E & SEX 3			
	GRADE 1 MACH. COMP. 12 IND. NUMBER	PRICE VEC	CT 2 EQUIP	. COMP 12			

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UN ITS CWT. PRICE VALUE/UNIT QUANT TY PRODUCT ION WEIGHT VALUE 8.98 513.94 SLTR STRS 0.98 58.400 524.43 BERMUDA HAY TONS 2.00 1.00 37.500 37.50 75.00 588.94 TOTAL RECEIPTS RATE NUMBER TOTAL UNITS CPERATING INPUTS PER UNIT OF UNITS UNITS PRICE VALUE 4.250 STR CALV(4-5)CH CWT. 1.00 4.25 74.90 318.32 S.G. PASTURE AUMS 2.88 1.00 2.883 18.00 51.89 BERNUCA HAY TONS 0.08 1.00 0.080 37.50 3.00 SALT & MIN. STARTER FEED 7.450 LBS. 7.45 1.00 0.08 0.60 2.70 9.40 CHT. 0.38 1.00 7.10 NATIVE PASTURE AUMS 5.00 1.00 1.880 1.88 VET & MED. HD. 1.00 1.00 1.000 2.11 2.11 TRUCK ING CWT. 13.23 1.00 13.230 0.25 3.31 ORDER BLYER COST 1.000 HD. 1.00 1.00 1.60 1.60 SALES COMM. 1.00 1.000 3.00 HD. 1.00 3.00 1.00 1.00 1.000 2.25 2.25 TAXES HD. 0.S. BEFMUDA 1.00 1.800 14.00 25.20 AUHS 1.80 CWT. 394.51 0.01 3.945 3.25 12.82 C.S. HULLS CCRN CWT. 1403.55 0.01 14.036 4.29 60.21 S.B. MEAL CWT. 261.61 0.01 2.616 8.50 22.24 SUPPL EMENT CWT. 145.46 0.01 1.455 4.29 6.24 TONS 110.27 0.01 1.103 2.00 FEED PRCCESSING 2.21 FEED DELIVERY TONS 110.27 0.01 1.103 2.00 2.21 FEED MARKUP TONS 110.27 0.01 1.103 7.50 8.27 CUST FAY REMOVAL TONS 2.00 1.00 2.000 22.50 45.00 MACH. FUEL & LUBE 5.71 MACHINERY REPAIR COST 1.97 ECUIPMENT REPAIR 0.75 TOTAL OPERATING COST 591.01 RETURNS TO LAND. LABOR. CAPITAL. MACHINERY. OVERHEAD.RISK.AND MANAGEMENT -2.07 CAPITAL COST PRICE AMOUNT VALUE ANNUAL OPERATING CAPITAL 0.100 303.793 30.38 MACHINERY INVESTMENT 0.100 21.270 2.13 EQUIPMENT INVESTMENT 0.100 17.825 1.78 TOTAL INTEREST CHARGE 34.29 RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT -36.36 CWNERSHIP COST: (DEPRECIATION. TAXES. INSURANCE) MACHINERY DOL. 3.76 ECUIPMENT DOL . 3.35 TOTAL OWNERSHIP COST 7.11 RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT -43.46 ---------LABER COSTS PRICE HOURS PACHINERY LABOR 3.000 2.688 8.06 ECUIPMENT LABOR 3.000 0.370 1.11 3.000 2.360 7.08 TOTAL LABOR COST 5.418 16.25 RETURNS TO LAND. OVERHEAD RISK AND MANAGEMENT -59.72 STOCKER ADG, 1.86 LB. - FINISH ADG, 2.35 LB ESTABLISHMENT COST OF OVERSEEDED BERMUDAGRASS IS ON CUSTOM BASIS, THESE COSTS PRORATED BY AUM UNITS OVER A 2 MCNTH PERIOD.02/21/79 ENTERPRISE 14 AREA AND CCUNTY 28 DETAIL 02 SPECIES 1 AGE 6 SEX 3 GRADE 1 MACH. COMP. 12 IND. NUMBER 3 PRICE VECT 2 EQUIP. COMP 12 MADER

WHEAT PASTURE STOCKER TO 646 LBS.. 119 DAYS FEC GRAIN AD LIB CN GRASS TO FINISH, 108 DAYS, MAR. 16 TO JULY 2, 1977

> ANNUAL CAPITAL MONTH: 7

> > PROCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY Program developed by dept. Of. Agri. Econ. Oklahoma state University

WHEAT PASTURE STOCKER TO 646 LB (119 DAYS). CCMMERCIAL FEEDLOT FINISH, MARCH 16 --> JUNE 16, 1977 AD LIB - 92 DAYS

PRODUCTION SLTR STRS CHOICE TOTAL RECEIPTS	UNITS CWT.	QUAN I TY 0.98	WE I GHT 9.23	PRICE VALU 56.700	JE/UNIT 523.34	VALUE 512.87 512.87
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
S.G. PASTURE	AUHS	2.88	1.00	2.883	18.00	51.89
BERMUCA HAY	TONS	0.08	1.00	0.080	37.50	3.00
SALT & MIN.	LBS.	7.45	1.00	7.450	0.08	0.60
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
NATIVE PASTURE	AUMS	0.28	1.00	0.280	5.00	1.40
VET & MED.	HD .	1.00	1.00	1.000	2.10	2.10
TRUCKING	CWT.	19.94	1.00	19.940	0.25	4.98
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWI.	450.60	0.01	4.506	3.25	14.64
CORN	CWT.	1529.20	0.01	15.292	4.29	65.60
S.B. MEAL	CWT.	290.80	0.01	2.908	8.50	24.72
SUPPLEMENT	CWT.	161.00	0.01	1.610	4.29	6.91
FEED MARGIN	DAYS	92.00	1.00	92.000	0.15	13.80
FEEDLOT CHARGE	DAYS	92.00	1.00	92.000	0.05	4.60
MACH. FUEL & LUBE				1 A.		1.64
MACHINERY REPAIR COST						0.89
ECUIPPENT REPAIR						0.28
IUTAL UPERALING CUST						524.94 
RETURNS TO LAND, LABOR, CAPITAL, MACHINE OVER+EAD, RISK, AND MANAGEMENT	ERY.				***	-12.06
CAPITAL COST			PRICE	AMOUNT		VALUE
ANNUAL CPERATING CAPITAL			0.100	259.254		25.93
MACHINERY INVESTMENT			0.100	6.401		0.64
EQUIPMENT INVESTMENT			0.100	7.050		0.70
TOTAL INTEREST CHARGE						27.27
RETURNS TO LAND. LABOR. MACHINERY. OVERFEAD. RISK AND MANAGEMENT			•			-39.33
CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)	· · · · · · · · · · · · · · · · · · ·					
MACHINERY	DOL.					1.07
EQUIPMENT	DOL.					1.60
TOTAL OWNERSHIP COST						2.67
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						-42.01
			PRICE	HUIDS		
PACHTNERY LABOR			3.000	1.056		3.17
FOULPMENT LABOR			3.000	0.250		0.75
LIVESTOCK LABOR			3-000	1.000		3.00
TOTAL LABOR COST				2.306		6.92
FETURNS TO LAND, OVERHEAD RISK ANC MANAGEMENT						-48.92
STACKER ADG 1-84 LB					MANEP	
FINISH PHASE ADD 3-01 18					HAUEN	
			02	/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DET	ATL DO SPE	ECTES 1 AGE	E & SEX 3			

GRADE 1 MACH. COMP. 12 IND. NUMBER 1 PRICE VECT 2 EQUIP. COMP 12 ANNUAL CAPITAL MONTH: 6

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PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE V	ALUE/UNIT	VALUE
STRS (4-5)	CWT.	0.98	4.25	77.900	331.07	324.45
TOTAL RECEIPTS						324.45
COPRATING INDUTS		RATE	NUMBER	TOTAL	00105	
UPERALING INPUIS	UNITZ	PER UNIT	UF UNITS	UNITS	PRILE	VALUE
STR CALV(6-5)CH	CHT.	1.00	4.25	4.250	74.90	318.32
BERMIICA HAY	TONS	0.66	1.00	0.660	37.50	24.75
SALT & MIN.	LBS	7.45	1.00	7.450	0.08	0.60
STARTER FEED	185.	0.38	1.00	0.380	7.10	2.70
COTTONSEED CAKE	CHT.	0.44	1.00	0.440	9.00	3.96
NATIVE PASTURE	AUNS	0.28	1.00	0.280	5.00	1.40
VET & MED.	HD.	1.00	1.00	1.000	2.06	2.06
TRUCKING	CWT.	8.50	1.00	8.500	0.25	2.13
ORDER BLYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES CCMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
MACH. FUEL & LUBE						3.17
NACHINERY REPAIR COST						0.84
ECUIPMENT REPAIR						0.94
TOTAL OPERATING COST						367.72
NETURNS TO LAND LABOR (CAPITAL (MACHI)	NEKT,					-43 36
UVERPEAD INITINGAND FANAGENCIT						-43.20
CAPITAL COST			PRICE	AMOU	NT	VALUE
ANNUAL OPERATING CAPITAL			0.100	141.9	08	14.19
PACHINERY INVESTMENT			0.100	11.5	89	1.16
EQUIPMENT INVESTMENT			0.100	26.5	21	2.65
TOTAL INTEREST CHARGE						18.00
RETURNS TO LAND, LABOR, MACHINERY,						
OVERFEAD, RISK AND MANAGEMENT						-61.26
CHNERSHIP COST: IDEPRECIATION.						
TAXES. INSURANCE						
PACHINERY	001.					2.09
FOUTPMENT	001					3.70
TOTAL CWNERSHIP COST						5.79
PETURNS TO LAND, LABOR, OVERHEAD,						
RISK AND MANAGEMENT						-67.06
LABCE COSTS			PRICE	HOU	RS	
PACHINERY LABOR			3.000	1.2	72	3.82
EQUIPMENT LABOR			3.000	0.1	79	0.54
LIVESTOCK LABOR			3.000	1.0	00	3.00
TOTAL LABOR COST				2.4	51	7.35
				*********		
RETURNS TO LAND, OVERHEAD						-74 41
KISK AND MANAGEMENT						-/4.41
2% DEATH LOSS: STOCKER ADG	0.0 (119 0	AYS)		MADE	R.MCKENNEY	
SELL PRICE DOES NOT REFLECT	ADJUSTMEN	IT FOR COMP	ENSATORY GA	IN	• • • • • • • • • • • • • • • • • • • •	
STEER BUY & SELL PRICE - 10	YR. AVG.	SEASONALLY	ADJUSTED02	/21/79		· .
ENTERPRISE 14 AREA AND COUNTY 28 DET	TAIL OO SPE	CIES 1 AGE	6 SEX 3			
GRACE 4 MACH. COMP. 12 IND. NUMBER	PRICE VEC	T 2 EQUIP.	COMP 12			
ANNUAL CAPITAL MONTH: 3						· .
PROCESSED BY DEPT	- OF AGRI.	ECON C	KLAHOMA STA	TE UNIVERSIT	Y	
PROGRAM DEVELOPED BY	DEPT. OF.	AGRI. ECOM	N. OKLAHOMA	STATE UNIVER	SITY	
DATE PRINTED:02/21/79						

STOCKER BUDGET - PER CALF - 100 UNIT Buy Oct. Sell Mar - Bermudagrass hay stocker program Buy 425 LBS. - Sell 425 LBS.; yr 1976-77

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PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE VA	LUE/UNIT	VALUE
STRS (5-6)	CWI.	0.98	2.41	12.400	467.91	359.76
101AL RECEIPIS						377.10
		RATE	NUMBER	TOTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
BERMUDA HAY	TONS	0.66	1.00	0.660	37.50	24.75
SALT & MIN.	LBS.	11.00	1.00	11.000	0.08	0.88
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
CUTTUNSEED CARE	GWIS	0.79	1.00	0.440	9.00	3.90
O S REDWIDA	AHMS	1.52	1.00	1.520	3.00	21 29
VET S NED.	HD.	0.99	1.00	0.991	2.12	2.10
TRUCKING	CWT.	9.66	1.00	9.660	0.25	2.41
ORDER BLYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
MACH. FLEL & LUBE						3.77
MACHINERY REPAIR COST						1.17
ECUIPMENT REPAIR						0.94
TOTAL OPERATING COST						390.53
RETURNS TO LAND, LABOR, CAP ITAL, MACHI OVERFEAD, RISK, AND MANAGEMENT	NERY.					9.22
CAPITAL COST			PRICE	AMOUN	T	VALUE
ANNUAL CPERATING CAPITAL			0.100	204.32	3	20.43
MACHINERY INVESTMENT			0.100	13.91	7	1.39
EQUIPMENT INVESTMENT			0.100	26.52	1	2.65
TOTAL INTEREST CHARGE						24.48
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT						-15.25
CWNERSHIP COST: (DEPRECIATION.						
TAXES. INSURANCE)	~~					• • •
PACHINERY	DUL.					2.48
TOTAL OWNERSHIP COST	DOL.					6.18
					*********	
RISK AND MANAGEMENT						-21.43
LABCR COSTS			PRICE	HOUR	S	
MACHINERY LABOR			3.000	1.65	6	4.97
EGUIPPENT LABOR			3.000	0.17	9	0.54
TOTAL LABOR COST			3.000	3.15	5	3.96
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-30.90
STOCKER ADG. 0.00 LB.: 0.5	. BERMUDA A	DG. 2.C8 L	.e.		MADER	
ESTABLISHMENT COST OF OVER	SEEDED BERM	UDAGRASS 1	S ON CUSTOM	BASIS,		
THESE COSTS ARE PRORATED B	Y AUM UNITS	OVER A 2	MO PERIODO2	/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DE	TAIL QQ SPE	CIES 1 AGE	ε SEX 3			
GRADE 4 MACH. COMP. 12 IND. NUMBER ANNUAL CAPITAL MONTH: 5	1 PRICE VEC	T 2 EQUIP.	COMP <u>12</u>			

BERNUDAGRASS HAY STOCKER, 119 DAYS GRAZE OVERSEEDED BERNUDAGRASS, 56 DAYS, MAR. 16 TO MAY 11, 1977

PROCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY PROGRAM DEVELOPED BY DEPT. OF. AGRI. ECON. OKLAHOMA STATE UNIVERSITY DATE PRINTED:02/21/79 BERMUDAGRASS HAY STOCKFR (119 DAYS) 425 LB GRAZE OVERSEEDED BERMUDAGRASS MAR. 16 --> MAY 11 (56 CAYS) 541 LB AD LIB FINISH IN COMMERCIAL FEEDLOT MAY 11 --> AUGUST 26, 1977 (107 DAYS)

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PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE VAL	LUE/UNIT	VALUE
SLTR STRS	CWT.	0.98	9.19	57.800	531.18	520.56
TOTAL RECEIPTS						520.56
			ALIMA CD	TATAI		
CPERATING INPUTS	UNITS	PERUNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
BERMUCA HAY	TONS	0.66	1.00	0.660	37.50	24.75
SALT & MIN.	LBS.	11.00	1.00	11.000	0.08	0.88
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
CCTTCNSEED CAKE	CWT.	0.44	1.00	0.440	9.00	3.96
NATIVE PASTURE	AUNS	0.28	1.00	0.280	5.00	1.40
G.S. BERMUDA	AUMS	1.52	1.00	1.520	14.00	21.28
VET & MED.	HD.	1.00	1.00	1.000	2.12	2.12
TRUCKING	CWT.	18.86	1.00	18.860	0.25	4.71
ORDER BLYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWT.	494.17	0.01	4.942	3.25	16.06
CORN	CWT.	1719.45	0.01	17.195	4.29	73.76
S.B. MEAL	CWT.	371.82	0.01	3.718	8.50	31.60
SUPPLEMENT	CWT.	135.98	0.01	1.360	4.29	5.83
FEED MARGIN	DAYS	107.00	1.00	107.000	0.15	16.05
FEEDLOT CHARGE	DAYS	107.00	1.00	107.000	0.05	5.35
MACH. FUEL & LUBE						3.77
MACHINERY REPAIR COST				1		1.17
ECUIPMENT REPAIR						0.94
TOTAL CPERATING COST				ł		541.51
RETURNS TO LAND,LABOR,CAPITAL,MACHINE OVERFEAD,RISK,AND MANAGEMENT	RY.					-20.96
CAPITAL COST			PRICE	AMOUN	r	VALUE
ANNUAL CPERATING CAPITAL			0.100	318.35	3	31.84
MACHINERY INVESTMENT		•	0.100	13.91	7	1.39
EQUIPMENT INVESTMENT			0.100	26.52	L	2.65
TUTAL INTEREST CHARGE						35.88
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAC, RISK AND MANAGEMENT						-56.83
GWNERSHIP COST: (DEPRECIATION.				• • • • • • • • • • • • • • • • • • •	میں میں میں ا <b>ن ان ان ان ا</b> مر میں میں میں میں م	
TAXES, INSURANCE)						
PACHINERY	00L.					2.48
EGUIPMENT	DOL.					3.70
TOTAL CWNERSHIP COST						6.18
RETURNS TO LAND, LABOR, OVERHEAD,					*******	
RISK AND MANAGEMENT						-63.02
LAECR COSTS			PRICE	HOUR	s	
MACHINERY LABOR			3.000	1.65	6	4.97
EQUIPMENT LABOR			3.000	0.179	9	0.54
LIVESTOCK LABOR			3.000	1.32	כ	3.96
TOTAL LABOR COST				- 3.15	5	9.46
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT			5			-72.48
STOCKER ADG 0.00 LBS / 0.S. CUSTOM BASIS FCR OVERSEEDED COSTS PRORATED BY AUM UNITS ENTERPRISE 14 AREA AND CCUNTY 28 DET GRADE 4 MACH. COMP. 12 IND. NUMBER 5 ANNUAL CAPITAL MONTH: 8	BERMUDA 2 BERMUDAGR OVER 2 MC AIL QQ SPE PRICE VEC	2.08 LBS AD ASS ESTABL 2. PERIOD. CIES 1 AGE T 2 EQUIP.	DG / FEEDLOT ISHMENT. 02 & SEX 3 . COMP 12	ADG 3.53 L8S /21/79	MADER	

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.

BERMUDAGRASS HAY STOCKER, 119 DAYS GRAZED ON SMALL GRAINS OVERSEED BERMUDA PASTURES, 163 DAYS MAR, 16 TO AUG. 26, 1977

PRODUCT ION	UNITS	QUANITY	WEIGHT	PRICE V	ALUE/UNIT	VALUE
STRS (7)CH TOTAL RECEIPTS	CWT.	0.58	7.07	68.500	484.29	474.61 474.61
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TCTAL UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
BERMUCA HAY	TONS	0.66	1.00	0.660	37.50	24.75
SALT & MIN.	LBS.	17.99	1.00	17.990	0.08	1.44
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
CCTTONSEED CAKE	CWT.	0.44	1.00	G.440	9.00	3.96
NATIVE PASTURE	AUMS	3.05	1.00	3.050	5.00	15.25
VEL & MED. Truck the	HD.	1.00	1.00	1.000	2.12	2.12
ADDED BIVED COST		11.32	1.00	11.520	1.40	2.03
SALES CONN.	HD.	1.00	1.00	1.000	3.00	3.00
TAYES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. BERMUDA	AUNS	1.52	1.00	1.520	14.00	21.28
MACH. FUEL & LUBE						4.78
MACHINERY REPAIR COST						1.71
ECUIPMENT REPAIR						0.94
TOTAL OPERATING COST						406.93
RETURNS TO LAND, LABCR, CAPITAL, MACHIN OVERHEAD, RISK, AND MANAGEMENT	ERY,					67.68
CAPITAL COST			PRICE	ANOU		VALUE
ANNUAL CPERATING CAPITAL			0.100	302.4	96	30.25
MACHINERY INVESTMENT			0.100	17.8	45	1.78
EQUIPMENT INVESTMENT			0.100	26.5	21	2.65
TOTAL INTEREST CHARGE						. 34 . 69
RETURNS TO LAND, LABOR, MACHINERY, Overfead, Risk and Management	•					32.99
CWNERSHIP COST: (DEPRECIATION,			n dirika da un un un vy dir 10 kil dra			
TAXES, INSURANCE)				•		
MACHINERY	DOL.					3.14
EQUIPPENT	DOL.					3.70
IDIAL UNNERSHIP LUSI						0.84
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						26.15
LABER COSTS			PRICE	HOU	RS	
PACHINERY LABOR			3.000	2.3	04	6.91
EQUIPPENT LABOR			3.000	0.1	79	0.54
TOTAL LABOR COST		•	3.000	1.8	43	5.58 13.03
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT					*******	13.12
ADG'S: STOCKER, 0.00 LB; 15	T 56 DAY G	RAZING, 2.	08 LB: ENTI	RE 163 DAYS,	1.73 LB	
ESTABLISHMENT COSTS OF OVER	SEEDED BER	MUDAGRASS	IS ON CUSTO	M BASIS,		
ENTERPRISE 14 AREA AND COUNTY 28 DET. GRADE 4 MACH. COMP. 12 IND. NUMBER 8 ANNUAL CAPITAL MONTH: 8	AIL QQ SPE PRICE VEC	CIES 1 AGE T 2 EQUIP.	E & SEX <u>3</u> . COMP <u>12</u>	1 / 1 7	HAUEK	

PROCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY PROGRAM DEVELOPED BY DEPT. OF. AGRI. ECON. OKLAHOMA STATE UNIVERSITY CATE PRINTED:02/21/79 BERMUDAGRASS HAY STOCKER, 119 DAYS FED GRAIN AD LIN CN GRASS TO FINISH, 163 DAYS, MAR. 16 TO AUG. 26, 1977

12

PRCOUCTION	UNITS	QU AN ITY	WEIGHT	PRICE	ALUE/UNIT	VALUE
SLTR STAS	CWT.	0.98	8.66	58.500	506.61	496.48
BERHUCA HAY	TONS	2.00	1.00	37.500	37.50	75.00
TOTAL RECEIPTS						571.48
		PATE	NUMBER	TOTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
BERMUDA HAY	TONS	0.66	1.00	0.660	37.50	24.75
SALT & MIN.	LBS.	7.45	1.00	7.450	0.08	0.60
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
COTTO! EED CAKE	CWT.	0.44	1.00	0.440	9.00	3.96
RATIVE PASTURE	AUMS	3.78	1.00	3.580	5.00	17.90
WET 5 MED.	ND.	1.00	1.00	1.000	2.12	21.20
TRUCKING	CWT.	12.91	1.00	12-910	0.25	3.23
ORDER BLYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWT.	483.65	0.01	4.836	3.25	15.72
CCRN	CWT.	1995.85	0.01	19.958	4.29	85.62
S.B. MEAL	CWT.	405.73	0.01	4.057	8.50	34.49
	UWI.	190.00	0.01	1.900	4.29	8.15
FEED PRICESSING	TONS	153 -17	0.01	1.538	2.00	3.08
FFFD NARKUP	TONS	153.77	0.01	1.538	7.50	11.53
CUST HAY REMOVAL	TONS	2.00	1.00	2.000	22.50	45.00
MACH. FUEL & LUBE						9.24
MACHINERY REPAIR COST						2.46
ECUIPMENT REPAIR						1.41
TOTAL OPERATING COST						621.48
RETURNS TO LAND, LABOR, CAPITAL, MACHIN OVERHEAD, RISK, AND MANAGEMENT	ERY.					-50.00
CAPITAL COST			PRICE	AMO	JNT	VALUE
ANNUAL CPERATING CAPITAL			0.100	330.	484	33.05
MACHINERY INVESTMENT			0.100	33.	784	3.38
EQUIPMENT INVESTMENT			0.100	37.	296	3.73
TOTAL INTEREST CHARGE						40.16
RETURNS TO LAND, LABCR, MACHINERY, OVERFEAD, RISK AND MANAGEMENT						-90.16
CWNERSHIP COST: (DEPRECIATION.						
TAXES, INSURANCE)						
MACHINERY	DOL.					6.10
EQUIPMENT	DOL .					5.45
TOTAL OWNERSHIP COST						11.55
RETURNS TO LAND. LABCR. OVERHEAD.						
RISK AND MANAGEMENT						-101.71
1 ABC 0 COSTS			00105			
WACHINERY LABOR			3.000	3.1	708	11.12
EQUIPMENT LABOR			3.000	0.	299	0.90
LIVESTCCK LABOR			3.000	3.	050	9.15
TOTAL LABOR COST				7.	057	21.17
AETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-122.88
STOCKER ADG. 0.00 IB ETN	ISH ADG. 3	72 18				
ESTABLISHMENT COST OF OVERS THESE COSTS ARE PRORATED BY ENTERPRISE 14 AREA AND COUNTY 28 DET GRADE 4 MACH. COMP. 12 IND. NUMBER 0 ANNUAL CAPITAL MONTH: 8	EEDED BERN AUM UNITS AIL QQ SPE PRICE VEC	UDAGRASS OVER A 2 CIES 1 AGE T 2 EQUIP	IS ON CUSTON MO PERIODO2 & SEX <u>3</u> COMP <u>12</u>	BASIS. 2/21/79	HAUEK.	

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EERMUDAGRASS HAY STOCKER (119 DAYS) AD LIB FINISH COMMERCIAL FEEDLOT HAR 16 - AUGUST 16, 1977 153 DAYS

		******	*********		*******	
PRODUCTION	UNETS	QUANITY	WEIGHT	PRICE VALU	JEZUNIT	VALUE
SLTR STRS	CWT.	0.98	9.33	57.800	539.27	528.49
TOTAL RECEIPTS						528.49
		RATE	NUMBER	TOTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CHT.	1.00	4.25	4.250	74.90	318.32
RERMUCA HAY	TONS	0.66	1.00	0.660	37.50	24.75
SALT & MIN.	LBS.	7.45	1.00	7.450	0.08	0.60
STARTER FEED	CHT.	0.38	1.00	0.380	7.10	2.70
CCTTONSEED CAKE	CHT.	0.44	1.00	0.440	9-00	3.96
NATIVE PASTURE	AUMS	0.28	1.00	0.280	5.00	1.40
VET & MED.	HD.	1.00	1.00	1.000	2.12	2.12
TRUCKING	CHT.	17.83	1.00	17.830	0.25	4.46
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWT.	599.04	0.01	5.990	3.25	19.47
CORN	CWT.	2251.37	0.01	22.514	4.29	96.58
S.B. MEAL	CWT.	475.24	0.01	4.752	8.50	40.40
SUPPLEMENT	CWT.	218.75	0.01	2.188	4.29	9.38
FEED MARGIN	DAYS	153.00	1.00	153.000	0.15	22.95
FEEDLOT CHARGE	DAYS	153.00	1.00	153.000	0.05	7.65
MACH. FUEL & LUBE						3.17
MACHINERY REPAIR COST						0.84
EQUIPMENT REPAIR						0.94
TOTAL OPERATING COST						566.54
CAPITAL COST ANNUAL CPERATING CAPITAL			PRICE 0.100	AMDUNT 331.969		-38.05 VALUE 33.20
MACHINERT INVESTMENT			0.100	11.589		1.10
TOTAL INTEDEST CHADCE			0.100	20.521		2.00
JUIAL INIERESI CHARGE						37.01
RETURNS TO LAND, LABCR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT						-75.06
CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)						
MACHINERY	DOL.					2.09
ECUIPPENT	DOL.					3.70
TOTAL OWNERSHIP COST						5.79
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						-80.85
LARCE COSTS			PRICE	HUIBS		
MACHINERY LABOR			3.000	1.272		3.82
EQUIPMENT LABOR			3.000	0.179		0.54
LIVESTCCK LABOR			3.000	1.000		3.00
TOTAL LABOR COST				2.451		7.35
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-88.21
STOCKER ADG 0.00 LBS.					MADER	
FINISH ADG 3.32 LBS.			0.2	/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DETA	IL OO SPE	CIES 1 AGE	02 E & SFX 3	162/17		

GRADE & MACH. COMP. 12 IND. NUMBER & PRICE VECT 2 EQUIP. COMP 12 ANNUAL CAPITAL MONTH: 8

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CHOICE SLAUGHTER STEERS - BUY HEREFORD X ANGUS, 425 LB Commercial Feedlot Facilities Utilized Sell 879 LB, 1% Death LOSS - 163 Days

.

	111115	DUANTTY	WEIGHT	PRICE VAL	UFZUNTT	VALUE
SI TR STRS	CHT.	0.99	8.79	56.100	493.12	488.19
TOTAL RECEIPTS	•••••	••••				488.19
***********		PATE	NIMAFR	TCTAI		
CPERATING INFLTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
C.S. HULLS	CWT.	270.00	0.01	2.700	3.25	8.78
WHOLE CCAN	CWT.	2474.11	0.01	24.741	4.29	106.14
601 + PRO. SUP.	CWT.	144.44	0.01	1.444	7.88	11.38
VET & MED.	HD.	1.00	1.00	1.002	2.11	2.11
ORDER - LYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES CONN.	HD.	1.00	1.00	1.000	3.00	3.00
TRUCK ING	CWT.	17.29	1.00	17.290	0.25	4.32
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
STARTER FEED	CWT.	0.38	1.00	0.380	7.10	2.70
NATIVE PASTURE	AUNS	0.28	1.00	0.280	5.00	1.40
FEED MARGIN	DAYS	163.00	1.00	163.000	0.15	24.45
FEEDLOT CHARGE	DAYS	163.00	1.00	163.000	0.05	8.15
MACH. FUEL & LUBE						0.45
MACHINERY REPAIR COST						0.24
ECUIPPENT REPAIR						0.03
TOTAL OPERATING COST						495.33
RETURNS TO LAND, LABCR, CAPITAL, MACHIN OVERHEAD, RISK, AND MANAGEMENT	ERY.					-7.14
CAPITAL COST			PRICE	AMOUNT		VALUE
ANNUAL CPERATING CAPITAL			0.100	194.668		19.47
MACHINERY INVESTMENT			0.100	1.746		0.17
EQUIPPENT INVESTMENT			0.100	0.400		0.04
TOTAL INTEREST CHARGE		1				19.68
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT		. <b></b>				-26.82
CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)				* * * * * * * * * * * * * *	***	
MACHINERY	DOL.					0.29
EQUIPMENT	DOL .					0.17
TOTAL OWNERSHIP COST						0.46
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						-27.28
LABCR COSTS			PRICE	HOURS		
PACHINERY LABOR			3.000	0.288		0.86
EQUIPMENT LABOR			3.000	0.010		0.03
LIVESTOCK LABOR			3.000	0.340		1.02
TOTAL LABOR COST				0.638		1.91
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-29.20
ADG. 2.78 NOV. 16 - APRIL 2 MHOLE CORN - COTTONSEED HUL	8, 1977 L RATION				MADER	
ENTERPRISE 14 AREA AND COUNTY 28 DET GRADE 3 MACH. COMP6 IND. NUMBER 1 ANNUAL CAPITAL MONTH: 4	AIL OO SPE PRICE VEC	CIES 1 AGE	E & SEX 3 • COMP _2	/ 21/ 17		

PROCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY Program developed by dept. of. Agri. Econ. Oklahoma state university [Ate printed:02/21/79 CHOICE SLAUGHTER STEERS - BUY HEREFORD X ANGUS, 425 LB CWNERS FEEDLOT FACILITIES UTILIZED SELL 879 LB, 1% DEATH LCSS; 163 DAYS

PRCDUCTION SLTR STRS	UNITS CWT.	QUANITY 0.99	WEIGHT 8.79	PRICE VALU	E/UNIT 493.12	VALUE 488.19
TOTAL RECEIPTS						488.19
****		0 A TE	NIWACÓ	TOTAI		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.25	4.250	74.90	318.32
C.S. HULLS	CWT.	270.00	0.01	2.700	3.25	8.78
WHOLE CCRN	CWT.	2474.11	0.01	24.741	4.29	106.14
60% + PRO. SUP.	CWT.	144.44	0.01	1.444	7.88	11.38
FEED PRCCESSING	TONS	144.44	0.01	° 1.444	2.00	2.89
FEED ULLIVERY	TONS	144.44	0.01	1.444	2.00	2.89
FEED MARKUP	TONS	144.44	0.01	1.444	7.50	10.83
VET & MED.	HD.	1.00	1.00	1.002	2.11	2.11
ORDER BUYER CUST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HU.	1.00	1.00	1.000	3.00	3.00
TAVEC	LWI-	1.00	1.00	1 000	2 25	3.20
STADIED SSED	10.	0 29	1.00	0.390	7 10	2.23
NATIVE PASTIDE	ALIMS	0.28	1.00	0.380	5.00	1 40
MACH. FUEL & LUBE	ACID	V-20	1.00	01200	5.00	5.61
MACHINERY REPAIR COST						1.49
ECUIPMENT REPAIR						0.70
TOTAL OPERATING COST						485.35
RETURNS TO LAND.LABCR.CAPITAL.MACHI OVERFEAD.RISK.AND MANAGEMENT	NERY,					2.83
CAPITAL COST			PRICE	AMOUNT		VALUE
ANNUAL OPERATING CAPITAL			0.100	192.596		19.26
MACHINERY INVESTMENT			0.100	20.511		2.05
EQUIPMENT INVESTMENT			0.100	16.975		1.70
TOTAL INTEREST CHARGE						23.01
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT						-20,17
CWNERSHIP COST: (DEPRECIATION,						
TAXES, INSURANCE)						
PACHINERY	00L.					3.71
EQUIPMENT	DOL.					2.98
			****			0.08
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						-26.85
IAPER COSTS			PRICE	HUIDS		
PACHINERY LABOR			3.000	2.251		6.75
EQUIPPENT LABOR			3.000	0.147		0.44
LIVESTOCK LABOR			3.000	1.980		5.94
TOTAL LABOR COST				4.379		13.14
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT		· · · · · · · · · · · · · · · · · · ·				- 39.99
			*****			
ADG 2.78 NOV. 16 - APRIL 2	8, 1977				MADER	
FFED PROCESSED AND DELIVER	ED FREM COM	M. MTI 1 41		/21/79		•
ENTERPRISE 14 AREA AND COUNTY 28 DF	TALL ON SPE	CIES 1 AGE	E & SEX 3			
GRACE 2 MACH. COMP. 12 IND. NUMBER	8 PRICE VEC	T 2 EQUIP	COMP 12	· · ·		
ANNUAL CAPITAL MONTH: 4						

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### APPENDIX C

COMPUTER PRINTOUT OF ENTERPRISE BUDGETS (1977-78) STOCKER STEFRS ON WHEAT PASTURE - NOV. 9 TO MAR. 29, 1978 STOCKING RATE - 1 STR./2 ACRES - SELL 637 LB., 140 DAYS Fereford × Angus (2% death Loss)

PRODUCTION STRS(6-7)CH TOTAL RECEIPTS	UNITS CWT.	QUANITY Q.58	WE IGHT 6.37	PRICE VALU 69.500	442.71	VALUE 433.86 433.86
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.75	4.750	74.90	355.77
S.G. PASTURE	AUMS	3.01	1.00	3.010	18.00	54.18
BERMUCA HAY	TONS	0.20	1.00	0.200	37.50	7.50
SALT & MIN.	L8S.	8.83	1.00	8.830	0.08	0.71
STARTER FEED	CWT.	0.42	1.00	0.420	7.10	2.98
NATIVE PASTURE	AUMS	0.25	1.00	0.250	5.00	1.25
VET & MED.	HO.	1.00	1.00	1.000	2.02	2.02
TRUCKING	CWT.	11.12	1.00	11.120	0.25	2.78
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD	1.00	1.00	1.000	2.25	2.25
MACH. FUEL & LUBE						1.79
MACHINERY REPAIR COST						0.97
FOUTPMENT REPAIR						0.28
TOTAL OPERATING COST						437.09
RETURNS TO LAND.LABCR.CAPITAL.MACHI OVERHEAD.RISK.AND MANAGEMENT	NERY,					-3.23
CARTAL COST			DO 10 6	ANOUNT		VA1 11E
ANNIAL CRERATING CARITAL	,		0.100	162.046		16.20
MACHINERY INVESTMENT			0 100	6 093		0.70
EAUTONENT INVESTMENT			0.100	7 050	. •	0.70
TATAL INTEREST CHARGE			0.100	1.050		17.61
				***********		
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAD, RISK AND MANAGEMENT		н. 1911 - 1911 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 - 1914 -				-20.84
CWNERSHIP COST: (DEPRECIATION,						
MACHINERY	001					1 17
						1.11
TOTAL CUNEDENID COST	006.					1.00
IUTAL UNNERSHIP CUSI						
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT		k.				-23.61
NACHINERY LARDR			3.000	1,160		3.44
EANTDMENT LADON			3.000	1.132		3.40
LINESTCCK LADOR			3.000	0.250		0.15
TOTAL LABOR COST			3.000	1.080	•	3.24
TUTAL LADUK CUST			*****	20402 		/•43 
RETURNS TO LAND. OVERHEAD RISK AND MANAGEMENT						-31.05
COST PER AUM FIGURED ON ST USED TON BASIS FOR AUM REQ STEER BUYING & SELLING PRI	ARTING WT ( UIREMENTS, CE 10 YR SE	475 LB) X ADG - 1.10 ASONALLY A	\$2.25/CWT/MO 5 LB. Adj. Avg. 02/	/21/79	MADER	
ENTERPRISE 14 AREA AND COUNTY 28 DE GRACE 2 MACH. COMP. 12 IND. NUMBER ANNUAL CAPITAL MONTH: 3 DECESSED BY DEC	TAIL OO SPE 1 PRICE VEC	CIES 1 AGE	E & SEX <u>3</u> COMP <u>12</u>			

PRCCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY PROGRAM DEVELOPED BY DEPT. OF. AGRI. ECON. OKLAHOMA STATE UNIVERSITY CATE PRINTED:02/21/79 WHEAT PASTURE STOCKER TO 637 LB, 140 DAYS GRAZE OVERSEEDED BERMUDAGRASS, 63 DAYS PAR. 29 TC MAY 31, 1978

PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE VALU	EJUNIT	VALUE
SIKS LI-BICH	CWI.	0.98	7.88	00.400	223.23	512+11
IUIAL RECEIPIS						712+11
		RATE	NUMBER	TCTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.75	4.750	74.90	355.77
S.G. PASTURE	AUMS	3.01	1.00	3.010	18.00	54.18
BERMUCA HAY	TONS	0.20	1.00	0.200	37.50	7.50
SALT & MIN.	LBS.	12.71	1.00	12.710	0.08	1.02
STARTER FEED	CWT.	0.42	1.00	0.420	7.10	2.98
NATIVE PASTURE	AUMS	0.25	1.00	0.250	5.00	1.25
VET & MED.	HD.	1.00	1.00	1.000	2.02	2.02
TRUCKING	CWT.	12.63	1.00	12.630	0.25	3.16
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES CEMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
O.S. BERMUDA	AUMS	2.05	1.00	2.050	14.00	28.70
MACH. FUEL & LUBE						2.39
MACHINERY REPAIR COST						1.30
ECUIPMENT REPAIR						0.28
TOTAL OPERATING COST						467.40
RETURNS TO LAND, LABOR, CAPITAL, MACHI OVERHEAD, RISK, AND MANAGEMENT	NERY.					45.37
ANNUAL COGRATING CARTER			PRICE	AMUUNI		VALUE
ARNUAL CPERATING CAPITAL			0.100	239.440		23.34
CAUTINENT INVESTMENT			0.100	7.511		0.73
TOTAL INTEREST CHARGE			0.100	1.030		25.18
RETURNS TO LAND, LABOR, MACHINERY,				***		
OVERFEAD, RISK AND MANAGEMENT						20.19
CWNERSHIP COST: (DEPRECIATION,	*****		·			
TAXES, INSURANCE)				•		
PACHINERY	DOL.					1.56
ECUIPMENT	DOL.					1.60
TOTAL CWNERSHIP COST						3.16
RETURNS TO LAND, LABOR, OVERHEAD,	~~~~~	-		*****		****
RISK AND MANAGEMENT						17.03
LAECR COSTS			PRICE	HOURS		
MACHINEFY LABOR			3.000	1.536		4.61
EQUIPPENT LABOR			3.000	0.250		0.75
LIVESTOCK LABOR			3.000	1.400		4.20
TOTAL LABOR COST				3.186		9.56
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						7.47
STUCKER ADD 1.10 LB; U.S. I Est. Cost of D.S. Repaida	DERMUUA ADU Is on chete	9 2+37 LB			MAUEK	
COST COST OF COST DERMODA	IN TE OVED	A 2 MO. 04		/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DE	TATI ON SPE		E SFY 3	/ 6.2 / 17		
GRACE 3 MACH. COMP. 12 IND. NUMBER	2 PRICE VEC	T 2 FOUTP	COMP 12			
ANNUAL CAPITAL MONTH: 5						

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WHEAT PASTURE STOCKER TO 637 LB. 140 DAYS GRAZE 0.5. HERMUDAGRASS 63 DAYS (MAR 29 TO MAY 31) AD LIB FINISH COMM. FEEDLOT 85 DAYS (MAY 31 TO AUG 24, 1978)

PRODUCTION	UNITS	QUAN I TY	WEIGHT	PRICE VALU	EJUNIT	VALUE
	CWT	0.58	10.45	57.800	604.01	591.93
TOTAL RECEIPTS						591.93
		RATE	NUMBER	TOTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV 14-51CH	CWT.	1.00	4.75	4.750	74.90	355.77
S.G. PASTURE	AUMS	3.01	1.00	3.010	18.00	54.18
BERMUCA HAY	TONS	0.20	1.00	0.200	37.50	7.50
SALT & MIN.	LBS.	12.71	1.00	12.710	0.08	1.02
CTADTED FEED	CHT.	0.42	1.00	0-420	7.10	2.98
NATIVE PASTIRE	AUMS	0.25	1.00	0-250	5.00	1.25
VET E MED	HD.	1.00	1.00	1,000	2.02	2-02
	CHT.	23.09	1.00	23.080	0.25	5.77
TRUCKING	LID.	23.00	1.00	1.000	1.60	1.60
URDER BUTER LUST		1.00	1.00	1.000	2.00	2 00
SALES CLPM.		1.00	1.00	1.000	3.00	2 25
TAXES	HU.	1.00	1.00	1.000	2.25	225
O.S. BERMUCA	AURS	2.05	1.00	2.050	14.00	20.10
C.S. HULLS	CWT.	430.13	0.01	4.301	3.25	13.98
CORN	CWT.	1528.88	0.01	15.289	4.29	65.59
S.B. MEAL	CWT.	280.88	0.01	2.809	8.50	23.87
SUPPL EMENT	CWT.	117.63	0.01	1.176	4.29	5.05
FEED MARGIN	DAYS	85.00	1.00	85.000	0.15	12.75
FEEDLOT CHARGE	DAYS	85.00	1.00	85.000	0.05	4.25
MACH. FLEL & LUBE						2.39
PACHINERY REPAIR COST	•					1.30
ECHIEMENT REPAIR						0.28
TOTAL CREPATING COST						595.50
RETURNS TO LAND, LABOR, CAPITAL, MACHIN OVERHEAD, RISK, AND MANAGEMENT	IERY.	-				-3.57
CARITAL COST			PRICE	AMOUNT		VALUE
ANNUAL COST			0.100	362-843		36.28
MACHINERY TAVESTMENT			0.100	9,311		0.93
CONTEMENT INVESTMENT			0.100	7-050		0.70
TOTAL INTEREST CHARGE			0.100	1.030		37.92
TUTAL INTEREST CHARGE						
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT						-41.49
CWNERSHIP COST: IDEPRECIATION.						
TAXES, INSURANCE)						
PACHINERY	DOL.	, ,				1.56
ECUIPPENT	DOL.					1.60
TOTAL CWNERSHIP COST						3,16
NETURNS IL LAND, LAEUK, UVERHEAU,			1. A. S.			-44.45
RISK PRE HANAGEHENT						-44.05
			00 105	HOURS		
LACLA CUSIS			3 000	nuuks		4 43
PACHINERT LABUR			3.000	1.530		4.01
EQUIPMENT LABUR			3.000	0.250		0.15
LIVESTOCK LABOR			3.000	1.400		4.20
TOTAL LABOR COST				3.186		9.50
RETURNS TO LAND. OVERHEAD RISK AND MANAGEMENT						-54.21
STOCKER ADG 1.16 LB					MADER	
O.S. BERMUDA ADG 2.39 LB						
FEEDLOT ADG 3.03 LB			02	2/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DET	AIL DO SP	ECIES 1 AG	E & SEX 3			
GRADE 3 MACH. COMP. 12 IND. NUMBER 2	PRICE VE	CT 2 EQUIP	. COMP 12			
ANNUAL CAPITAL MONTH: 8						

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.

WHEAT PASTURE STOCKER TO 637 LB, 140 DAYS GRAZE SMALL GRAINS D.S. BERMUDA, 180 DAYS PAR. 29 TO SEPT. 25, 1978

PRODUCT ION STRS (9)	UNITS CWT.	QUANITY 0.98	WEIGH	r PRIC 1 56.40	E VALUE/UNI 0 508-1	T VALUE
TOTAL RECEIPTS						498.00
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNIT	R TOTA S UNIT	S PRIC	CE VALUE
STR CALV(4-5)CH	CWT.	1.00	4.7	5 4.75	0 74.9	355.77
S.G. PASTURE	AUHS	3.01	1.00	0 3.01	0 18.0	54.18
BERMUDA HAY	TONS	0.20	1.00	0 0.20	0 37.	50 7.50
SALT & MIN.	LD3.	20.09	1.00			
STAKTER FEED		4.00	1.00	0.42	0 /•1	10 2.98
WET & MED.	HO.	1.00	1.00			)2 2.02
TRUCKING	CWT.	13.76	1.00	13.76	0 0.2	3.44
ORDER BLYER COST	HD.	1.00	1.00	1.00	1.0	1.60
SALES COMM.	HD.	1.00	1.00	1.00	0 3.0	3.00
TAXES	HD.	1.00	1.00	1.00	2.2	2.25
Q.S. BERMUCA	AUMS	2.05	1.00	0 2.05	0 14.0	28.70
MACH. FUEL & LUBE						3.59
PACHINERY REPAIR COST						1.94
ESUIPPENT REPAIR						0.28
RETURNS TO LAND.LABOR.CAPITAL.MACHINE OVERHEAD.RISK.AND MANAGEMENT	ERY,				•	9.13
		****	PRICE	A		VALUE
ANNUAL OPERATING CAPITAL			0.100	39	2.177	39.22
MACHINERY INVESTMENT			0.100	1	3.966	1.40
EQUIPMENT INVESTMENT			0.100		7.050	0.70
TOTAL INTEREST CHARGE						41.32
RETURNS TO LAND, LABCR, MACHINERY, OVERHEAC, RISK AND MANAGEMENT						-32.19
TAYES, INSURANCE)						
MACHINERY	001 -					2.33
EQUIPMENT	DOL.					1.60
TOTAL OWNERSHIP CCST						3.94
SETUDIC TO LAND, LADCO OVERHEAD				**********		
RISK AND MANAGEMENT						-36.12
LAECE COSTS			PRICE		IOURS	
PACHINERY LABOR			3.000		2.304	6.91
ECUIPPENT LABOR			3.000		.250	0.75
LIVESTOCK LABOR			3.000		2.040	6.12
TOTAL LABOR COST					• 594	13.78
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-49.91
ACG: STOCKER, 1.16 LB ADG: 1ST 63 CAYS GRAZING, 2. ACG: ENTIRE 180 DAYS, 1.46 L ENTERPRISE 14 AREA ANC COUNTY 28 DETA GRADE 3 MACH. CCMP. 12 IND. NUMBER 5 ANNUAL CAPITAL MONTH: 9	39 LB .B AIL <u>OD</u> SPE PRICE VEC	CIES 1 AGE T 2 EQUIP.	É SEX 3 COMP 12	02/21/79	DAM	DER

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.
HHEAT PASTURE STOCKER TO 637 LB (140 DAYS) Fed Grain ad Lib en grass to finish Mar. 29 To July 15, 1978-108 days

PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE VAL	UE/UNIT	VALUE
SLTR STRS	CWT.	0.98	9.49	58.400	554.22	543.13
BERMUDA HAY	TONS	2.00	1.00	37.500	37.50	75.00
TOTAL RECEIPTS						618.13
		RATE	NUMBER	TOTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR.CALV (4-5)CH	CWT.	1.00	4.75	4.750	74.90	355.77
S.G. PASTURE	AUMS	3.01	1.00	3.010	18.00	54.18
BERNUDA HAY	TONS	0.20	1.00	0.200	37.50	7.50
SALT & MIN.	LBS.	8.83	1.00	8.830	0.08	0.71
STARTER FEED	CWT.	0.42	1.00	0.420	7.10	2.98
NATIVE PASTURE	AUNS	1.75	1.00	1.750	5.00	8.75
VET & MED.	HD.	1.00	1.00	1.000	2.02	2.02
TRUCKING	CWT.	14.24	1.00	14.240	0.25	3.56
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES CCMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. BEFMUDA	AUMS	2.00	1.00	2.000	14.00	28.00
C.S. FULLS	CWT.	437.64	0.01	4.376	3.25	14.22
CORN	GWT.	1577.13	0.01	15.771	4.29	67.66
S.B. MEAL	CWT.	288.38	0.01	2.884	8.50	24.51
SUPPLEMENT	ENT.	121.39	0.01	1.214	4.29	5.21
FEED PRUCESSING	TUNS	121.39	0.01	1.214	2.00	2.43
FEED DELIVERY	TUNS	121.39	0.01	1.214	2.00	2.43
FEED MARKUP	TUNS	121.39	0.01	1.214	7.50	9.10
CUST FAY REMUVAL	TUNS	2.00	1.00	2.000	22.50	45.00
MACH. FUEL & LUBE						5.83
PACHINERY REPAIR LUSI						2.05
EQUIPPENT REPAIR						0.75
TUTAL OPERATING CUST						047.72
RETURNS TO LAND, LABOR, CAPITAL, MACHINI OVERHEAD, RISK, AND MANAGEMENT	ERY,				•	-31.38
			00105			
ANNUAL COSTANC CARTTAL			PRICE	220 02	•	VALUE
MACHINE CPERALING CAPITAL			0.100	21 742		33.07
FAUTLNEFT INVESTMENT			0.100	17 92		2.17
TOTAL INTEREST CHARGE			0.100		,	37.05
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAD, RISK AND MANAGEMENT	•				•	-68.43
AWNERSHIP COST: (DEPRECIATION.						
TAYES. INSURANCES						
WACHINERY	001 -					3 . 83
EQUIPMENT	DOL					3,35
TOTAL OWNERSHIP COST						7.19
RETURNS TO LAND, LABCR, OVERHEAD, RISK AND MANAGEMENT						-75.62
IARR COSTS			DD 10 E			
#ACHINERY LARCE			3.000	100K	,	a 77
EQUIDMENT LABOR			3.000	0.370	-	1 11
LIVESTOCK LABOR			3.000	2.43	5	7.29
TOTAL LABOR COST			3.000	5.572	,	16.72
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-92.34
ETOCKED ADD 1 14 10 CINIT	ADC 2 00					
STUCKER ADG 1.16 LHFINISH	AUG 2.89	LD.			MADER	
THESE COSTS ADE DODATED OF		.m DASIS : Over 3 40		7/21/70		
ENTEDDICE 14 ADEA AND COUNTY 39 DET	AUR UNLIS	DIVER Z ML	. PEKIUD 04	1121/19		
GRADE 2 NACH, COMP. 12 IND. NUMBED 2		T 2 FAUTO				
ANNUAL CAPITAL MONTH: 7		- A Levira				

ANNUAL CAPITAL MONTH:

WHEAT PASTURE STOCKER TO 637 L8, 140 DAYS AD L18 FINISH COMMERCIAL FEEDLOT PAR. 29 TC JUNE 26, 1978-89 DAYS

PRODUCTION SLTR STRS	UNIȚS CWT.	QUAN LTY 0.98	WEIGHT 9.63	PRICE V/ 58.000	LUE/UNIT 558.54	VALUE 547.37
						16,100
CPERATING INFUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL	PRICE	VALUE
STR CALV (4-5)CH	CWT.	1.00	4.75	4.750	74.90	355.77
S.G. PASTURE	AUMS	3.01	1.00	3.010	18.00	54.18
BERMUCA HAY	TONS	0.20	1.00	0.200	37.50	7.50
SALT & MIN.	LBS.	8.83	1.00	8.830	0.08	0.71
STARTER FEED	GWT.	0.42	1.00	0.420	7.10	2.98
NATIVE PASTURE	AURS	0.25	1.00	0.250	5.00	1.23
VEL & MED.		20.75	1.00	20 750	2.02	2.02
APDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWT.	460.38	0.01	4.604	3.25	14.96
CORN	CWT.	1652.00	0.01	16.520	4.29	70.87
S.B. MEAL	CWT.	302.13	0.01	3.021	·8.50	25.68
SUPPLEMENT	CWT.	126 .88	0.01	1.269	4.29	5.44
FEED MARGIN	DAYS	89.00	1.00	89.000	0.15	13.35
FEEDLOT CHARGE	DAYS	89.00	1.00	89.000	0.05	4.45
MACH. FUEL & LUBE						1.79
PACHINERY REPAIR CUST						0.97
EGUIPMENT REPAIR						0.28
CAPITAL COST ANNUAL OPERATING CAPITAL MACHINERY INVESTMENT EQUIPMENT INVESTMENT TOTAL INTEREST CHARGE		t	PRICE 0.100 0.100 0.100	AMOUN 282-27 6-98 7-05	17 17 13 50	VALUE 28.23 0.70 0.70 29.63
RETURNS TO LAND, LABOR, MACHINERY, Overhead, RISK and Management	· · · · · · · · · · · · · · · · · · ·					-56.52
CWNERSHIP COST: (DEPRECIATION,					• • • • • • • • • • • • • • • • •	
TAXES, INSURANCE)	501					
FACHINERT	000.					1.17
TATAL CUNERSHIP COST	JUL.					2.77
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						-59.29
LAECR COSTS			PRICE	HOUR	S	
PACHINERY LABOR			3.000	1.15	12	3.46
EQUIPMENT LABOR			3.000	0.25	0	0.75
TOTAL LABOR COST			3.000	1.08	10	3.24
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-66.73
ADG STOCKER, 1.16 LB					MADER	
ACG FEEDLOT. 3.67 LB			02.	/21/79		
ENTERPRISE 14 AREA AND COUNTY 28 DET GRADE 3 MACH. COMP. 12 IND. NUMBER 4	ATL DO SPE	CIES 1 AGE	E SEX 3 COMP 12			

ANNUAL CAPITAL MONTH: 6

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### BERMUDAGRASS HAY STOCKERS - NOV. 9 TO MAR. 29, 1978 Puy 475 - Sell 530 - 28 death LUSS Stocker Rudget - Per Calf - 100 Unit

FRODUCTION SLTR STRS TOTAL RECEIPTS	UNITS CWT.	QUANITY 0.58	WEIGHT 5.30	PRICE VA 73.500	LUE/UNIT 389.55	VALUE 301.76 301.76
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL UNITS	PRICE	VALUE
STR CALV (4-5)CH BERMUCA HAY SALT & MIN. Starter FEED Native Pasture Vet & MeD. Trucking Order Buyer Cost Sales Comm. Taxes Mach. Fuel & Lube	CWT. Tons LBS. CWT. Aums HD. CWT. HD. HD. HD.	1.00 1.14 8.83 0.42 0.25 1.00 10.05 1.00 1.00 1.00	4.75 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	4.750 1.138 8.830 0.420 0.250 1.000 10.050 1.000 1.000 1.000	74.90 37.50 0.08 7.10 5.00 2.02 0.25 1.60 3.00 2.25	355.77 42.67 0.71 2.98 1.25 2.02 2.51 1.60 3.00 2.25 3.47
PACHINERY REPAIR COST Equipment repair Total operating cost						0.92 0.94 420.10
RETURNS TO LAND, LABOR, CAPITAL, MACHINER OVERHEAD, RISK, AND MANAGEMENT	Y,				<b>- 10</b>	-38.34
CAPITAL CCST ANNUAL CPERATING CAPITAL MACHINERY INVESTMENT ECUIPMENT INVESTMENT TOTAL INTEREST CHARGE			PRICE 0.100 0.100 0.100 0.100	AMOUN 159.94 12.68 26.52	T 7 3 1	VALUE 15.99 1.27 2.65 19.92
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAD, RISK AND MANAGEMENT						-58.26
CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE) PACHINERY EQUIPMENT TOTAL CWNERSHIP COST	DOL. DOL.		· · · · · · · · · · · · · · · · · · ·			2.29 3.70 5.99
RISK AND MANAGEMENT						-64.25
LABCR COSTS MACHINERY LABOR EQUIPMENT LABOR LIVESTOCK LABOR TOTAL LABOR COST			PR ICE 3.000 3.000 3.000	HDUR 1.39 0.17 1.08 2.65	S 2 9 0 1	4.18 0.54 3.24 7.95
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT	****					-72.20
STEER BUYING & SELLING PRICE 140 DAY ADG, .39 LB.	- 10 YR.	SEASONALL	Y ADJUSTED	AVERAGE	MADER	
ENTERPRISE 14 AREA AND COUNTY 28 DETAI GRACE 3 MACH. CCMP. 12 IND. NUMBER 0 P ANNUAL CAPITAL MONTH: 3	L DO SPE RICE VEC	CIES 1 AGE T 2 EQUIP.	E & SEX <u>3</u> COMP <u>12</u>	, , , ,		

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EERMUDAGRASS HAY STOCKER, 140 DAYS GRAZE OVERSFEDED BERMUDAGRASS, 63 DAYS PAR, 29 TC MAY 31, 1978

PRODUCTICN STRS (6-7)CH TOTAL RECEIPTS	UNITS CWT.	QUANITY 0.98	WEIGHT 6.44	PRICE VALU 70.500	E/UNIT 454.02	VALUE 444.94 444.94
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT. TONS	1.00	4.75	4.750	74.90	355.77
SALT & MIN. STARTER FEED	LBS. CWT.	12.71	1.00	12.710 0.420	0.08	1.02
VET & MED. TRUCKING	HD. CWT.	1.00	1.00	1.000	2.02	2.02
ORDER BLYER COST Sales CCMM. Taxes	HD. HD. HD.	1.00 1.00 1.00	1.00 1.00 1.00	1.000 1.000 1.000	1.60 3.00 2.25	1.60 3.00 2.25
O.S. BERMUDA MACH. FUEL & LUBE MACHINERY REPAIR COST EQUIPMENT REPAIR TOTAL OPERATING COST	AUMS	1.44	1.00	1.440	14.00	20.16 4.07 1.25 0.94 441.78
RETURNS TO LAND, LABOR, CAPITAL, MACHINE OVERHEAD, RISK, AND MANAGEMENT	RY,					3.16
CAPITAL COST ANNUAL CFERATING CAPITAL MACHINERY INVESTMENT			PRICE 0.100 0.100	AMDUNT 230.126 15.010		VALUE 23.01 1.50
EGUIPMENT INVESTMENT TOTAL INTEREST CHARGE			0.100	26.521		2.65 27.17
RETURNS TO LAND, LABCR, MACHINERY, OVERHEAC, RISK AND MANAGEMENT						-24.01
CWNERSHIP COST: (DEPRECIATION, TAXES, INSURANCE)						
PACHINERY Ecuipment Total Ownership Cost	DOL. DOL.			• •		2.08 3.70 6.38
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT						-30.38
LABCR COSTS PACHINERY LABOR			PRICE 3.000	HOURS		5.33
EQUIPPENT LABOR Livestock Labor Total Labor Cost			3.000	0.179 1.400 3.355		0.54 4.20 10.06
PETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT						-40.45
STOCKER ADG .39 LB. O.S. BER EST. COST CF O.S. BERMUDA IS COSTS ARE PRORATED BY AUM UN	MUDA ADG	1.81 LB CM BASIS A 2 MO. PI	ERIOD 02	2/21/79	MADER	
ENTERPRISE 14 AREA AND COUNTY 28 DET GRADE 3 MACH. COMP. 12 IND. NUMBER 7 ANNUAL CAPITAL MONTH: 5 PROCESSED BY DEPT.	PRICE VE	ECIES 1 AGE CT 2 EQUIP	E & SEX <u>3</u> • COMP <u>12</u> DKLAHOMA ST/	ATE UNIVERSITY		

PROGRAM DEVELOPED BY DEPT. OF. AGRI. ECON. OKLAHOMA STATE UNIVERSITY CATE PRINTED:02/21/79 BERMUDAGRASS HAY STOCKER TO 530 LB. 140 DAYS GRAZE D.S. HERNUDA 63 DAYS (MAR 29 TO MAY 31) AD LIB FINISH COMM. FEEDLOT 117 DAYS (MAY 31 TO SEPT 25, 1978)

PRODUCT ICN	UNITS	QUANITY	WEIGHT	PRICE V	ALUE/UNIT	VALUE
SLTR STRS TOTAL RECEIPTS	CWT.	0.98	10.09	54.600	550.91	539.90
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.75	4.750	74.90	355.77
BERMUCA HAY	TONS	1.14	1.00	1.138	37.50	42.67
SALI & MIN.	LOS.	12.11	1.00	12./10	7 10	2 09
NATIVE PASTURE	AUMS	0.25	1.00	0.250	5.00	1.25
VET & MED.	HD.	1.00	1.00	1.000	2.02	2.02
TRUCKING	CWT.	21.28	1.00	21.280	0.25	5.32
ORDER BUYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES CCMM.	HD.	1.00	1.00	1.000	3.00	3.00
D S RERNICA	ALIMS	1.44	1.00	1.440	2.25	2.20
C.S. HILLS	CHT.	534.25	0.01	5.343	3.25	17.36
CCRN	CWT.	2017.88	0.01	20.179	4.29	86.57
S.B. MEAL	CWT.	361.75	0.01	3.618	8.50	30.75
SUPPL EMENT	CWT.	153.25	0.01	1.532	4.29	6.57
FEED MARGIN	DAYS	117.00	1.00	117.000	0.15	17.55
MACH CHEL C LUDE	UATS	11/.00	1.00	11/.000	0.05	5.07
MACHINERY REPAIR COST						1.25
ECUIPMENT REPAIR						0.94
TOTAL OPERATING COST						608.95
RETURNS TO LAND.LABOR.CAPITAL.MACHIN OVERFEAD.RISK.AND MANAGEMENT	ERY,					-69.06
CAPITAL COST			PRICE	AMOU	NT	VALUE
ANNUAL CPERATING CAPITAL			0.100	398.2	46	39.82
MACHINERY INVESTMENT			0.100	15.0	10	1.50
ECUIPMENT INVESTMENT			0.100	26.5	21	2.65
TUTAL INTEREST CHARGE						43 • 98
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAD, RISK AND MANAGEMENT						-113.04
CWNERSHIP COST: (DEPRECIATION,						
TAXES, INSURANCE)						
PACHINERY	DOL.					2.68
TOTAL OWNERSHIP COST	DUC					5.70
RETURNS TO LAND, LABOR, DVERHEAD, RISK AND MANAGEMENT						-119.41
LAECR COSTS			PRICE	HOU	RS	
PACHINERY LABOR			3.000	1.7	76	5.33
EQUIPMENT LABOR			3.000	0.1	79	0.54
TOTAL LABOR COST			3.000	3.3	55	10.06
RETURNS TO LAND, OVERFEAD RISK AND MANAGEMENT						-129.48
ADG: STOCKER39 LB					MADER	
ADG: O.S. BERMUCA 1.81 LB						. •
ADG: FEEDLOT 3.12 LB	÷ .		02	2/21/79		
GRADE 3 MACH. CCMP. 12 IND. NUMBER 8	AIL DO SPE PRICE VEC	CIES 1 AGE	E & SEX <u>3</u> . COMP <u>12</u>			

PROCESSED BY DEPT. OF AGRI. ECON. - OKLAHOMA STATE UNIVERSITY PROGRAM DEVELOPED BY DEPT. OF. AGRI. ECON. OKLAHOMA STATE UNIVERSITY CATE PRINTED:02/21/79

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BERMUDAGRASS HAY STCCKER, 140 DAYS GRAZE SMALL GRAINS O.S. HERMUDA, 180 DAYS MAR. 29 TO SEPT. 25, 1978

PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE VALUE/UNI	IT VALUE
STRS (8)	CWT.	0.48	8.02	61.800 495.0	
IUIAL RECEIPIS					
		RATE	NUMBER	TOTAL	
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS PRIC	CE VALUE
STR CALV(4-5)CH	CHT.	1.00	4.75	4.750 74.9	90 355.77
BERMUDA HAY	TONS	1.14	1.00	1.138 37.9	50 42.67
SALT & MIN.	LBS.	20.09	1.00	20.090 0.0	08 1.61
STARTER FEED	CWT.	0.42	1.00	0.420 7.1	10 2.98
NATIVE PASTURE	AUHS	3.60	1.00	3.600 5.0	18.00
VET & MED.	HD.	1.00	1.00	1.000 2.0	2.02
TRUCKING	CWT.	12.77	1.00	12.770 0.2	25 3.19
ORDER BLYER COST	HD.	1.00	1.00	1.000 1.0	60 1.60
SALES COMM.	HD.	1.00	1.00	1.000 3.0	3.00
TAXES	HD.	1.00	1.00	1.000 2.2	25 2.25
C.S. BERMUDA	AUHS	1.44	1.00	1.440 14.0	20.16
PACH. FUEL & LUBE					5.26
MACHINERY REPAIR COST					1.90
ECUIPMENT REPAIR					0.94
TOTAL OPERATING COST					461.36
DETIONS TO LAND LABOR CADITAL MACHINE		****			
OVERHEAD, RISK, AND MANAGEMENT	<b>KI9</b>				24.36
CAPITAL COST			PRICE	AMOUNT	VALUE
ANNUAL OPERATING CAPITAL			0.100	378.083	37.81
PACHINERY INVESTMENT			0.100	19.666	1.97
EQUIPMENT INVESTMENT			0.100	26.521	2.65
TOTAL INTEREST CHARGE					42.43
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAC, RISK AND MANAGEMENT					-18.06
CWNERSHIP COST: LDEPRECIATION,					
TAXES, INSUKANUEJ					• • •
PALHINERT	DUL.	·			3.40
EQUIPMENT COST	001.				3.70
RETURNS TO LAND. LABOR, OVERHEAD, RISK AND MANAGEMENT					-25.22
WACHINEEV LARDO			3.000	7 K44	7 43
CONTRACT LACOR			3.000	0.179	0.54
ITVESTOCK LABOR			3.000	2.040	· 6-12
TOTAL LABOR COST			51000	4.763	14.29
RETURNS TO LAND, CVERHEAD RISK AND MANAGEMENT					-39.51
ADG: STUCKER, .39 LB ADG: 1ST 63 CAYS GRAZING, 1. ADG: ENTIRE 180 DAYS, 1.46 L	81 LB		0:	MAL	DER
ENTERPRISE 14 AREA AND COUNTY 28 DETA	IL OO SPE		E SEX 3	br = br f 7	
GRACE 3 MACH. COMP. 12 IND. NUMBER 6 ANNUAL CAPITAL MONTH: 9	PRICE VEC	T 2 EQUIP	COMP 12		
PROCESSED BY DEPT.	OF AGRI.	ECON C	KLAHOMA ST	ATE UNIVERSITY	
CATE PRINTED:02/21/79	crie Ufe	MURI. ELUN	I UKLAHUMA	STATE UNIVERSITY	

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QUAN ITY PRICE VALUE/UNIT PRODUCTION UNITS WEIGHT VALUE SETR STRS CHT. 0.98 9.81 56.400 553.28 542.22 75.00 BERMUDA HAY TONS 2.00 37.500 1.00 37.50 TOTAL RECEIPTS 617.22 RATE NUMBER TOTAL OF UNITS UNITS CPERATING INPUTS PER UNIT UNITS PRICE VALUE CWT. 1.00 4.75 4.750 74.90 355.77 STR CALV(4-5)CH BERMUCA HAY TONS 37.50 1.14 1.00 1.138 42.67 SALT & MIN. Lės. 8.83 1.00 8.830 0.08 0.71 2.98 STARTER FEED NATIVE PASTURE 0.42 0.420 3.500 CWT. 1.00 7.10 AUMS 1.00 5.00 17.50 VET & MED. HD. 1.00 1.00 1.000 2.02 2.02 TRUCK ING CWT. 14.56 1.00 14.560 0.25 3.64 ORDER BUYER COST HD. 1.00 1.00 1.000 1.60 1.60 SALES CEMM. HD. 1.00 1.00 1.000 3.00 3.00 1.00 TAXES HD. 1.00 1.000 2.25 2.25 1.400 0.S. BERMUCA C.S. HULLS AUHS 1.40 1.00 14.00 19.60 597.14 CWT. 0.01 3.25 19.41 2415.64 0.01 24.156 4.29 CORN ĊWT. 103.63 S.B. MEAL CWT. 473.77 0.01 4.738 8.50 40.27 CWT. SUPPLEMENT 183.38 0.01 1.834 4.29 7.87 FEED PRCCESSING FEED DELIVERY TONS 183.35 0.01 1.833 2.00 3.67 TONS 0.01 183.35 2.00 1.833 3.67 7.50 13.75 FEED MARKUP TONS 183.35 0.01 1.833 CUST HAY REMOVAL TONS 2.00 2.000 22.50 45.00 1.00 MACH. FUEL & LUBE 9.57 MACHINERY REPAIR COST ECUIPMENT REPAIR 2.55 1-41 TOTAL OPERATING COST 702.53 RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD.RISK, AND MANAGEMENT -85.32 PRICE CAPITAL COST AMOUNT VALUE ANNUAL OPERATING CAPITAL 0.100 418.738 41.87 MACHINERY INVESTMENT EQUIPMENT INVESTMENT 0.100 34.987 3.50 0.100 37.296 3.73 TOTAL INTEREST CHARGE 49.10 RETURNS TO LAND. LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT -134.42 CWNERSHIP COST: (DEPRECIATION, TAXES. INSURANCE) MACHINERY DOL. 6.32 ECUIPMENT DOL . 5.45 TOTAL GWNERSHIP COST 11.77 FETURNS TO LAND. LABOR, OVERHEAD. RISK AND MANAGEMENT -146.19LABCR COSTS PRICE HOURS **PACHINERY LABOR** 3.000 3.840 11.52 EQUIPMENT LABOR 3.000 0.299 0.90 LIVESTCCK LABOR 3.000 3.120 9.36 TOTAL LABOR COST 7.259 21.78 RETURNS TO LAND, CVERHEAD RISK AND MANAGEMENT -167.96 STOCKER ADG .39 LB.-FINISH ADG 2.72 LB. EST. CCST OF O.S. BERMUDA IS ON CUSTOM BASIS THESE COSTS ARE PRORATED BY AUM UNITS OVER 2 MO. PERIOD 02/21/79 ENTERPRISE 14 AREA AND COUNTY 29 DETAIL 00 SPECIES 1 AGE & SEX 3 GRADE 2 MACH. CCMP. 12 IND. NUMBER 4 PRICE VECT 2 EQUIP. COMP 12 MADER ANNUAL CAPITAL MONTH: 9

BERMUDAGRASS HAY STOCKER 140 DAYS FED GRAIN AD LIB CN GRASS TO FINISH. 166 DAYS MAR. 29 TO SEPT. 11. 1978

# RERMUDAGRASS HAY STOCKER TO 530 LB. 140 DAYS AD LIB FINISH COMMERCIAL FEEDLOT MAR. 29 TO AUG. 24, 1978-148 DAYS

PRODUCTION	UNITS	QUANITY	WEIGHT	PRICE V	ALUF/UNIT	VALUE
SL TR STRS	CWT.	0.58	9.98	57.800	576.84	565.31
TOTAL RECEIPTS						565.31
		RATE	NUMBER	TOTAL		
CPERATING INPUTS	UNITS	PER UNIT	OF UNITS	UNITS	PRICE	VALUE
STR CALV(4-5)CH	CWT.	1.00	4.75	4.750	74.90	355.77
BERMUDA HAY	TONS	1.14	1.00	1.138	37.50	42.67
SALT & MIN.	LBS.	8.83	1.00	8.830	0.08	0.71
STARTER FEED	CWT.	0.42	1.00	0.420	7.10	2.98
NATIVE PASTURE	AUMS	0.25	1.00	0.250	5.00	1.25
VET & MED.	HD.	1.00	1.00	1.000	2.02	2.02
TRUCK ING	CWT.	20.03	1.00	20.030	0.25	5.01
CRDER BLYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWT.	683.76	0.01	6.838	3.25	22.22
CCRN	CWT.	2520.76	0.01	25.208	4.29	108.14
S.B. MEAL	CWT.	628.51	0.01	6.285	8.50	53.42
SUPPLEMENT	CWT.	202.01	0.01	2.020	4.29	8.67
FEED MARGIN	DAYS	148.00	1.00	148.000	0.15	22.20
FEEDLOT CHARGE	DAYS	148.00	1.00	148.000	0.05	7.40
MACH. FUEL & LUBE						3.47
FACHINERY REPAIR COST						0.92
EQUIPPENT REPAIR				•		0.94
TOTAL OPERATING COST						644.65
RETURNS TO LAND.LABOR.CAPITAL,MACHI	NERY,					-79.34
CAPITAL COST			PRICE	AMOU	INT	VALUE
ANNUAL CPERATING CAPITAL		,	0.100	372.7	193	37.28
MACHINERY INVESTMENT			0.100	12.6	83	1.27
EQUIPPENT INVESTMENT			0.100	26.5	521	2.65
TOTAL INTEREST CHARGE						41.20
RETURNS TO LAND, LAPOR, MACHINERY, OVERHEAC, RISK AND MANAGEMENT						-120.54
CUNERCUID COST. (DERRECIATION						
LWNERSHIP CUSI: UPPRECIATION.						
MAES, INSURANCES	0.01					2 70
PACHINERT	000.					2.27
TOTAL CHARDENED COST	DUL.					5.00
IUTAL UNNERSHIP CUST						
RETURNS TO LAND. LABCR, OVERHEAD. RISK AND MANAGEMENT						-126.53
			00100			
LABLE CUSTS			PRICE	HUL	102	4 10
MACHINERY LABCK			3.000	1	92	4.18
EQUIPMENT LABOR			3.000	0.1	19	0.04
LIVESTUCK LABUR			3.000	1.0	100	7.05
TOTAL LABOR CUST				2.0		1.95
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT		-	2000 - 2000 2000 2000			-134.48
ADG: STOCKER, .39 LB ACG: FEEDLCT, 3.16 LB					MADER	
ENTERPRISE 14 AREA AND COUNTY 28 DE GRADE 3 MACH. COMP. 12 IND. NUMBER Annual Capital Month: 8	TAIL QQ SPO 9 PRICE VEC	ECIES 1 AGI CT 2 EQUIP	02 E & SEX 3 . COMP 12	2/21/79		

### CHOICE SLAUGHTER STEERS (HXA) BUY-475 LB, SELL-958 LB, 1% DEATH LOSS CCPMERCIAL FEEDLOT FACILITIES UTILIZED

PRODUCT ION SLTR STRS TOTAL RECEIPTS	UNITS CWT.	QUANITY 0.99	WEIGHT 9.58	PRICE VALU 57.000	E/UNIT 546.06	VALUE 540.60 540.60
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL UNITS	PRICE	VALUE
STR CALV(4-5)CH STARTER FEED NATIVE PASTURE VET & MED. ORDER BUYER COST SALES CCHM. TRUCK ING TAXES C.S. HULLS WHOLE CORN 603 + FRO. SUP.	CWT. CWT. AUMS HD. HD. CWT. CWT. CWT. CWT.	1.00 C.42 O.25 1.00 1.00 1.00 19.08 1.00 299.51 2884.79 255.C8	4.75 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.01 0.01	4.750 0.420 0.250 1.000 1.000 19.080 1.000 2.995 28.848 2.551	74.90 7.10 5.00 2.25 1.60 3.00 0.25 2.25 3.25 3.25 4.29 7.88	355.77 2.98 1.25 2.25 1.60 3.00 4.77 2.25 9.73 123.76 20.10
FEED MARGIN FEEDLOT CHARGE MACH. FUEL & LUBE MACHINERY REPAIR COST EQUIPMENT REPAIR TOTAL OPERATING COST	DAYS DAYS	194.00 194.00	1.00	194.000 194.000	0.15 0.05	29.10 9.70 0.39 0.21 0.03 566.91
RETURNS TO LAND + LABCR + CAPITAL + MACHIN OVER+EAD + RISK + AND MANAGEMENT	NERY.					-26.31
CAPITAL COST ANNUAL CPERATING CAPITAL MACHINERY INVESTMENT EQUIPMENT INVESTMENT TOTAL INTEREST CHARGE			PRICE 0.100 0.100 0.100 0.100	AMDUNT 262.531 1.528 0.400		VALUE 26.25 0.15 0.04 26.45
RETURNS TO LAND, LABOR, MACHINERY, OVERFEAD, RISK AND MANAGEMENT						-52.75
CWNERSHIP COST: (DEPRECIATION. TAXES. INSURANCE) MACHINERY ECUIFMENT TOTAL CWNERSHIP COST	DOL. DOL.				- - - -	0.26 0.17 0.42
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT		- 400 400 405 400 600 600 607 400 400 400			n	-53.17
LAECR COSTS MACHINERY LABOR EQUIPMENT LABOR LIVESTOCK LABOR TOTAL LABOR COST			PRICE 3.000 3.000 3.000	HOURS 0.252 0.010 0.300 0.562		0.76 0.03 0.90 1.69
RETURNS TO LAND. OVERHEAD RISK AND MANAGEMENT				<b></b>		-54.86
FED NOV. 9 TO MAY 22, 1978 FEEDLOT ADG 2.45 LB WHOLE CORN-CGTTCNSEED HULL ENTERPRISE 14 AREA AND COUNTY 23 DE GRADE 3 MACH. COMP. 12 IND. NUMBER ANNUAL CAPITAL MONTH: 5	(194 DAYS) RATION TAIL <u>OO</u> SPE 1 PRICE VEC	CIES 1 AGE T 2 EQUIP.	02 & SEX <u>3</u> COMP 12	2/21/79	MADER	

### CHOICE SLAUGHTER STEERS (HXA) BUY - 475 LU., SELL - 950 LU., 1% DEATH LOSS CWNER FEEDLOT FACILITIES UTILIZED

PRODUCTION SLIR STRS TOTAL RECEIPTS	UNITS CHT.	QUANITY 0.99	WEIGHT 9.58	PRICE VA 57.000	LUE/UNIT 546.06	VALUE 540.60 540.60
CPERATING INPUTS	UNITS	RATE PER UNIT	NUMBER OF UNITS	TOTAL UNITS	PRICE	VALUE
STR CALVESTCH	CHT.	1.00	4.75	4.750	74.90	355.77
STARTER FEED	CHT.	0.42	1.00	0.420	7.10	2.98
NATIVE PASTIRE	AUMS	0.25	1.00	0.250	5.00	1.25
WET & MED.	HD.	1.00	1.00	1.000	2.25	2.25
ORDER BLYER COST	HD.	1.00	1.00	1.000	1.60	1.60
SALES COMM.	HD.	1.00	1.00	1.000	3.00	3.00
TRUCKING	CNT.	14.33	1.00	14.330	0.25	3.58
TAXES	HD.	1.00	1.00	1.000	2.25	2.25
C.S. HULLS	CWT.	291.98	0.01	2.920	3.25	9.49
HOLE CORN	CHT.	2884.79	0.01	28.848	4.29	123.76
AOT + PRO- SUP-	CHT.	247.55	0.01	2.476	7.88	19.51
EFED MARKILP	TONS	171.36	0.01	1.714	7.50	12.85
FEED PROCESSING	TONS	171.96	0.01	1.720	2.00	3.44
FED DELIVERY	TONS	171.87	0.01	1.719	2.00	3.44
MACH. FUEL & LUBE					2000	6.40
PACHINERY REPAIR COST						1.70
ECUIPMENT REPAIR						0.70
TOTAL OPERATING COST						553.97
				alaa a aasaa adadaa .		
RETURNS TO LAND, LABOR, CAPITAL, MACHINE OVERFEAD, RISK, AND MANAGEMENT	RY.					-13.37
CAPITAL COST			PRICE	AMOUN	r	VALUE
ANNUAL OPERATING CAPITAL			0.100	258.88	4	25.89
MACHINERY INVESTMENT			0.100	23.39	7	2.34
FOULPMENT INVESTMENT			0.100	16.97	5	1.70
TOTAL INTEREST CHARGE						29.93
			****			
OVERFEAD, RISK AND MANAGEMENT						-43.30
CWNERSHIP COST: (DEPRECIATION.						
TAXES. INSURANCE)						
PACHINERY	DOL.					4.23
EQUIPMENT	DOL .					2.98
TOTAL CWNERSHIP COST						7.20
RETURNS TO LAND. LARCE. OVERHEAD.			**********			
RISK AND MANAGEMENT						-50.50
LAECE COSTS			PRICE	HOUR	S	
PACHINERY LABOR			3.000	2.56	3	7.70
EQUIPMENT LABOR			3.000	0.14	7	0.44
LIVESTCCK LABOR			3.000	2.21	0.	6.63
TOTAL LABOR COST				4.92	5	14.78
RETURNS TO LAND, OVERHEAD RISK AND MANAGEMENT					g ar 18 - 6 al ès ar an an an	-65.28
FED NOV. 9 TO MAY 22. 1978 ( FEEDLOT ADG 2.49LB. Whole Corn - Cottenseed Hull	RATION (	TRUCK	02	/21/79	MADER	
ENTERPRISE 14 AREA AND COUNTY 28 DETA	IL QQ SPE	CIES 1 AGE	& SEX 3			
GRAUE 2 PACH. CUMP. 12 IND. NUMBER Z ANNUAL CAPITAL MONTH: 5	PRICE VEC	I Z EQUIP.	COMP 12	• • •		

# VITA <sup>2</sup>

# Terry Lee Mader

## Candidate for the Degree of

### Master of Science

# Thesis: CATTLE PERFORMANCE AND ECONOMIC POTENTIALS OF ALTERNATIVE STOCKER AND FINISHING PROGRAMS FOR FALL-WEANED CALVES

Major Field: Animal Science

Biographical:

- Personal Data: Born in Quinter, Kansas, April 29, 1951 and married Sheila Kay Howell, August 16, 1975.
- Education: Graduated from Jennings High School, Jennings, Kansas, in May 1969; received an Associate degree from Colby Community Junior College, Colby, Kansas, in May 1971; received the Bachelor of Science degree in Agriculture from Kansas State University, Manhattan, Kansas, in December, 1973, with a major in Feed Science and Management; completed the requirements for the Master of Science degree from Oklahoma State University, Stillwater, Oklahoma, in May 1979.
- Professional Experience: Reared on a farm in northwestern Kansas; Feedmill trainee, Winterscheidt Milling Company, Seneca, Kansas, 1972; Feedlot hand, Hoxie Cattle Co., Hoxie, Kansas, 1973; Farm Manager, Platte Valley Products Inc., Lexington, Nebraska, 1974-1975; Shift Supervisor, Tabor Milling Co., Div. of Archer Daniels Midland Co., North Kansas City, Missouri, 1975-1976. Production Manager, Gooch Mill and Elevator, Div. of Archer Daniels Midland Co., North Kansas City, Missouri, 1976; Supervisor, Oklahoma State Forage Testing Laboratory, Stillwater, Oklahoma, 1976-1978; Graduate Assistant at Oklahoma State University, 1978-1979.

Professional Organizations: Phi Theta Kappa; Gamma Sigma Delta; Phi Kappa Phi; American Society of Animal Science.