

FACT SHEET

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KEYS TO FEEDING CATTLE FOR SLAUGHTER

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Practices for maximum production of slaughter cattle are explained in this publication to assist cattle feeders. Many marketing and management decisions including cattle buying and selling, feed costs and health practices are important for success. Suggestions are made to aid in decision making for some areas, while others may require local, specific, individual recommendations. A feeding program will depend on individual capital, labor, facilities, kind and quantity of feed produced and feed availability and price.

Buying Feeder Cattle

Special buying knowledge is highly correlated to the enterprise's success. Use of commission men may be a good investment for some owners. Some alternatives are listed.

- Buy Good to Choice feeder grade 600-pound steers and full feed a finishing ration until they weigh 1,000-1,100 pounds, or as long as feed conversion rate is favorable.

- Buy Good to Choice stocker grade 400-pound steers. Place on fall and/or spring grazing and grain feed 1 percent of body weight, or feed a growing ration in drylot until they weigh 600 pounds and sell, or full feed to approximately 1,000 pounds.

- Buy Good to Choice feeder grade 400 to 500-pound heifers and full feed a finishing ration until they weigh approximately 850 pounds.

- Buy Standard to Good feeder grade steers weighing 600 pounds and full feed a finishing ration until they yield a slaughter grade of Good. This may be 800-900 pounds, depending on gain rate and feed conversion.

- Buy Standard to Good feeder grade 400-pound heifers and full feed a finishing ration until they yield a slaughter grade of Good or weigh about 800 pounds.

- Lightweight, 250 to 350-pound, low grade feeder calves may be full fed in drylot, but are usually high risk cattle because of higher death losses. Initial investment makes the venture enticing. See L-820, *Understanding Livestock and Meat Marketing News*.

Carcass Desirability Characteristics

Feedlots should produce fed cattle with the following characteristics:

- Carcasses should possess no more than .06 inch of fat covering per hundredweight of carcass over the

ribeye when measured three fourths the distance from the chine bone on the eye muscle.

- A minimum dressing percentage of 60 percent.

- Carcasses should have a quality grade of USDA low Choice or better and a cutability grade of 2, with a sprinkling of 1's and 3's in a lot.

Selling Slaughter Cattle

Slaughter cattle are sold by private treaty on a live-weight basis, and some on a dressed-weight basis. Therefore, feeders should become familiar with marketing or use special company representatives. Present demands are for 1,000 to 1,100-pound cattle of Choice grade. Sell lower feeder grade cattle at lighter weights or as they reach the Good slaughter grade. Lower grades tend to require more feed per pound of gain than higher grade cattle after reaching 800 pounds. See MP-494, *Livestock Marketing Handbook*.

Cattle Health

Many health problems can be prevented if locally raised animals are available in sufficient number to meet requirements. If not, a high incidence of pneumonia and diarrhea is likely during the first 2 or 3 weeks animals are in a lot. However, a carefully executed conditioning program will minimize loss from these causes.

TREATMENT ON ARRIVAL AND FIRST 24 HOURS

- Place in pen and feed free choice 10 percent crude protein hay.
- Do not allow water until cattle have started consuming hay.
- Visually cut out "sicks." Any having 103 degrees F. temperature or more should be treated according to veterinarian recommendations and separated from other cattle.
- Castrate, dehorn or tip horns after 12 to 24 hours rest.
- Treat for specific feedlot diseases as prescribed locally by veterinarian.
- Treat for both external and internal parasites — lice, grubs, common stomach worms, etc.
- A good grass pasture may be used in lieu of suggestions 1, 2 and 3.

TREATMENT FOR NEXT 3 WEEKS

- Continue free choice hay for 1 week.
- Allow stock salt free choice.
- Allow free choice mineral supplement with a calcium to phosphorus ratio of no more than 2:1.
- Feed twice daily a mixture containing at least 80 percent concentrates and 20 percent roughage with 5 to 10 thousand I.U. of vitamin A per head per day according to cattle weight. Refer to vitamin and antibiotic sections of this publication.
- Check daily for "sicks." Remove to sick pens and treat accordingly.

VETERINARY TREATMENT

Veterinary treatments which may be considered depending upon cattle involved are: Blackleg, Malignant Edema, Clostridium Novyii, Red Nose and Bar 3.

EXTERNAL PARASITE CONTROL

Obtain a copy of MP-691, *Texas Guide for Controlling Insects on Livestock and Poultry* from your county agricultural agent.

Feedlot Facilities

Cattle should have 200 square feet per head in dirt-surfaced feedlots. Clean water troughs weekly. Clean,

68 degrees F. water aids in better feed utilization. Feeding twice a day is recognized as one of the best practices. If feed is before cattle all day, stir at least twice and remove spoiled feed from trough. See MP-680, *Beef Cattle Feedlot Facilities*.

Rations

The following mixtures for growing and finishing cattle in drylot and on pasture are suggested. The combination of ingredients depends on the producer's plans, including his labor supply, feed supply and cattle grades and weights. Generally, when feeder cattle are confined in drylot, feed a ration which will give maximum daily gain and finish to grade and weight in greatest demand in shortest time.

Starting Cattle on Feed

Cattle which have been creep fed or have had grain on grass may begin in drylot on a mixture of 80 percent concentrates and 20 percent roughage. Decrease roughage by 10 percent and increase concentrate by 10 percent at the end of 1 week. Feed a mixture of 90 percent concentrates and 10 percent roughage for the remainder of finishing period.

Cattle not accustomed to concentrate feeds may begin on feed by either of two methods. Feed them a mixture of 60 percent concentrates and 40 percent roughage. Gradually, during a 2-week period, increase the concentrates and decrease roughage until they are

Suggested Mixtures³

% Protein supplement	% Grain	% Roughage	% Minerals, salt-others ¹		% Crude protein	Starting weight, lb.	Expected daily Feed, lb.	Gain, lb. ²
GROWTH AND DEVELOPMENT								
50% concentrate, 50% roughage								
20	30	50	.5	.5	10.90	300	9	1.2
						500	9	1.2
						700	21	2.0
DRYLOT FINISHING								
60% concentrate, 40% roughage								
15	45	40	.5	.5	10.20	300	9	1.5
						500	15	2.0
						700	21	2.2
70% concentrate, 30% roughage								
12	58	30	.5	.5	10.14	300	8	1.6
						500	14	2.2
						700	20	2.5
80% concentrate, 20% roughage								
9	71	20	.5	.5	10.08	300	7	1.7
						500	13	2.4
						700	20	2.5
90% concentrate, 10% roughage								
7	83	10	.5	.5	10.34	300	6	1.8
						500	12	2.5
						700	18	2.8
100% concentrate, 0% roughage								
6	94	0	.5	.5	10.86	500	6	3.0
						700	8	3.5
						PASTURE FINISHING CATTLE		
10	90	pasture	.5	.5	12.40	300	7.5	1.5
						500	12.5	2.0
						700	17.5	2.5

¹See mineral discussion

²Without hormones

³The crude protein of the suggested mixtures is calculated on the basis of 41 percent crude protein in the supplement, 9 percent crude protein in sorghum grain and no crude protein in the roughage. Feed intake and daily gain estimates are based on steers. Bulls should gain about .1 to .2 more pounds while heifers should be expected to gain about .1 to .3 less with similar feed intakes.

receiving 90 percent concentrates and 10 percent roughage. Another method is to start with a 90 percent concentrate and 10 percent roughage mixture and limit daily feed per head to 1 percent of body weight. Increase amount daily until cattle are receiving all they will eat at the end of 2 weeks. Continue feeding this mixture until cattle are finished. Daily feed requirements for all cattle weights vary from 2.5 to 4 percent of average body weight, depending on percent concentrate in the mixture.

A system practiced by some feeders of starting feeder cattle and feeding until slaughtered on all grain, grain and a protein supplement or all-concentrates with no added roughage is being studied at Texas A&M University. It is recognized that feed per 100 pounds of grain is reduced considerably, thus possibly lowering production costs. The risk of founder, liver abscesses and rumen ulcers may be reduced by including 10 milligrams of antibiotics per pound of ration. Feed all-concentrate rations no more than 120 days. Cattle may be placed on feed by feeding 1.5 percent of body weight the first day plus 1 pound increase per head per day until on full feed.

Starting Pasture Cattle on Feed

Cattle on pasture may be started on feed by two methods. First, feed a mixture free choice of 80 percent concentrates and 20 percent roughage. Change the mixture weekly by increasing the concentrates 10 percent and decreasing the roughage 10 percent. Continue this practice until cattle are receiving 100 percent concentrates. An alternate method is to feed a mixture of 90 percent ground sorghum grain and 10 percent cottonseed meal limiting the concentrate mixture to 1 percent of body weight daily per head for the first week. Thereafter, keep feed in troughs at all times. Under this method some individuals may founder.

Pasture Finishing Cattle

Cattle weighing 400 to 600 pounds may be finished to 1,000 pounds under conditions of excellent green grazing and additional grain and protein. This system depends upon maximum management in relation to producing green forage grazing in the fall, winter, spring and early summer months. Feed a free choice mixture of 80 percent ground sorghum grain, 10 percent protein supplement and 10 percent salt as cattle are placed on pasture and continue until slaughter weight is reached. Cattle will consume this mixture at approximately 1 percent of their body weight daily. Under these conditions Good to Choice grade, 400-pound feeders, should grade Good to low Choice carcasses without objectionably yellow fat. Cattle should graze and be fed from November to July. Heifers under this plan should be marketed at slaughter weights in demand for such beef.

Grains

Feed corn, sorghum grain, barley or any percent combination of these. Grain price determines usage. Wheat may be fed up to 50 percent of the grain portion of the mixture. Oats are excellent for growth and

development, but do not consider it a fattening grain. Form in which grains are fed is of economic importance. Grinding is the least preparation which may be done to all grains to improve performance. Most research supports moderately fine grinding over coarse grinding. Add 5 percent molasses to control wind loss. Dry rolling gives similar results to fine grinding.

Sorghum grain utilization may be improved through longer steaming, pressure cooking, reconstituting in air-tight silos and moist-harvested sorghum grain from air-tight silos. These treatments along with rolling, flaking or grinding, tend to significantly improve daily gain and feed required per 100 pounds of gain. Arizona research with 18 to 20 percent moisture-content sorghum grain, subjected for 20 minutes at 204 to 210 degrees F. temperature and flaked by a roller set at zero tolerance, increased gains by 10 percent and reduced feed requirements by 5 percent over that of dry-rolled grain.

Texas A&M research with cattle fed early harvested, ground-moist sorghum grain from sealed storage required 10 to 18 percent less feed on a dry matter basis than cattle fed ground-dry sorghum grain to produce a unit of gain. No significant difference in daily gain has been observed. Equally good results have occurred from dry sorghum grain when reconstituted with water and stored in air-tight silos. Popping and micronizing are dry heat processing methods that appear to have feeding value equal to other acceptable methods. Pelleted grains may increase feed efficiency by 5 percent. However, pelleting decreases feed intake, reduces gain slightly and such mixtures containing more than 50 percent concentrates have not been economical.

Protein Supplements

Any protein supplement may be fed. Cost per pound of protein usually determines usage. Multiple protein sources offer little or no gain advantage over single sources. Limit urea to provide no more than one-third of the total protein equivalent of a ration. Liquid supplements containing urea usually give near equal results as similar dry supplements.

Roughage

Roughage nutrient value has little influence on gain when the mixture contains less than 20 percent roughage. Gain is influenced significantly in rations containing 30 percent or more roughage, and higher energy roughages should be used in these mixtures. Crude protein in roughage is about 50 percent digestible except it is higher in alfalfa. Two to 5 percent alfalfa in a mixture may increase daily gains slightly. Feed hay ground or unground. Grind all low quality roughages. Generally, roughage pelleting is not economical because of high cost.

Silage is about two-thirds to three-fourths water and one-third to one-fourth dry matter. To determine the amount to feed, multiply the required pounds of dry roughage by three or four, depending on the silage's moisture content. Limit 200 to 300-pound calves to about 4 to 6 pounds of silage daily.

Additives

HORMONES such as diethylstilbestrol increase daily gain as much as 15 percent and improve feed efficiency by 10 percent. Calves weighing 200 to 500 pounds should receive one 12 or 15 milligram ear implant or be fed 5 milligrams daily per head in the feed mixture. Yearling steers respond best to 30-36 milligram implants or when fed 10 milligrams daily per head in feed mixture. Slaughter grade may be lowered slightly. The Food and Drug Administration requires cattle to be implanted 100 days before slaughter and removal of hormone feeds from the ration 48 hours prior to slaughter.

Heifers receiving diethylstilbestrol hormones develop their sex organs rapidly, and price may be affected adversely. Market as 850-pound cattle. Melengestrol acetate (MGA) is a hormone fed to heifers to suppress estrus. Results indicate that 0.3-0.5 milligrams per day increase gain 10 percent and reduce feed required about 6 percent.

ANTIBIOTICS such as Aureomycin or Terramycin increase gain about 6 percent for an average feed savings of 4 percent. A 75-milligram daily level per head in the ration generally is adequate. Cattle which have not been under stress and are from the same herd normally do not need an antibiotic injected or administered orally in the feed. If infections occur, give a high level injection or oral high level (360 milligrams per day) feeding. Most experienced feeders are including 10 milligrams of antibiotics per pound of ration in the high and all-concentrate rations since it tends to decrease liver abscess incidence.

VITAMIN A is essential in all rations. Alfalfa products are considered good sources of carotene, the plant precursor of vitamin A. None of the grains except yellow corn contain this vitamin precursor. Silage is considered a fair to good source, but non-legume hays may or may not supply sufficient amounts. Some protein supplements are fortified with vitamin A and may not supply requirements. Include synthetic vitamin A in the concentrate mixture at the 5,000 International

Unit level daily per head for calves, 10,000 for yearlings and 20,000 for older cattle. Texas research shows that six million unit injections do not improve gains of yearlings when the ration already contains adequate vitamin A from natural feeds.

MOLASSES increases ration palatability, controls dust and may replace up to 10 percent grain portion of the ration, depending upon price. Five to 7 percent is sufficient to control dust and increase palatability.

FAT has an energy value 2.25 times that of grain. Do not include more than 5 percent fat in a mixture because daily gains are affected adversely. Two to 4 percent is used to control dust and reduce mixing equipment wear.

YEAST, ENZYMES, RUMEN CULTURES and **SILAGE PRESERVATIVES** have not proven economical.

Minerals

Combine minerals in the mixture or feed separately free choice. Include salt in the feed mixture at the .5 percent level or have available free choice. Include a calcium supplement such as limestone or oyster shell flour in high concentrate mixtures at the .5 percent level. A phosphorus supplement such as bonemeal or dicalcium phosphate may be included in the mixture at the .5 percent level or fed free choice. Trace mineral mixtures have not proved to increase gains when the ration contains high quality roughage and natural proteins. Supplement rations based principally on poor-quality forages with a trace mineral mixture containing copper and cobalt in an amount sufficient to supply 2-5 parts per million copper and 0.1 parts per million cobalt.

Control urinary calculi by including 1 ounce of technical grade ammonium chloride in the daily ration. Add it to the premix, concentrate or mixed feeds.

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Economic Analysis

Date in _____ Out _____ Head _____ Lot _____ Brand _____ Sex _____ Type _____ Background _____
 Origin _____ Pur. wt. _____ Avg. _____ Pur. price \$ _____ cwt. Total pur. cost \$ _____ In wt. _____ lb.
 Shrink. _____ % Death loss _____ head _____ lb. Gross final wt. _____ lb. Shrink. _____ % Sale wt. _____ lb.
 Avg. _____ Sale price _____ Total sales _____

PERFORMANCE

Head days _____ Avg. _____ Total gain _____ lb. Avg. _____ lb. Feed consumption _____ lb. Avg./head/day _____ lb.
 % of avg. wt. _____ % Conversion _____ :1
 Inged. cost _____ cwt. + milling \$ _____ cwt. + labor & mgt. _____ cwt. = total Ration cost \$ _____
 Total feed cost \$ _____ Feed cost/lb. gain \$ _____ Medicine & misc. \$ _____ Avg./head \$ _____
 Total cost \$ _____ Total cost/lb. gain \$ _____

RETURN

Gross return (sales — calf + total cost) \$ _____ Avg./head \$ _____ Interest _____ % × annual factor ($\frac{\text{days on feed}}{365}$)
 _____ × avg. invest. \$ _____ = _____ Net return (gross — interest) _____ Avg./head \$ _____
 Return on assets ($\frac{\text{net return}}{\text{annual factor} \times \text{avg. assets}}$) = _____ %

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