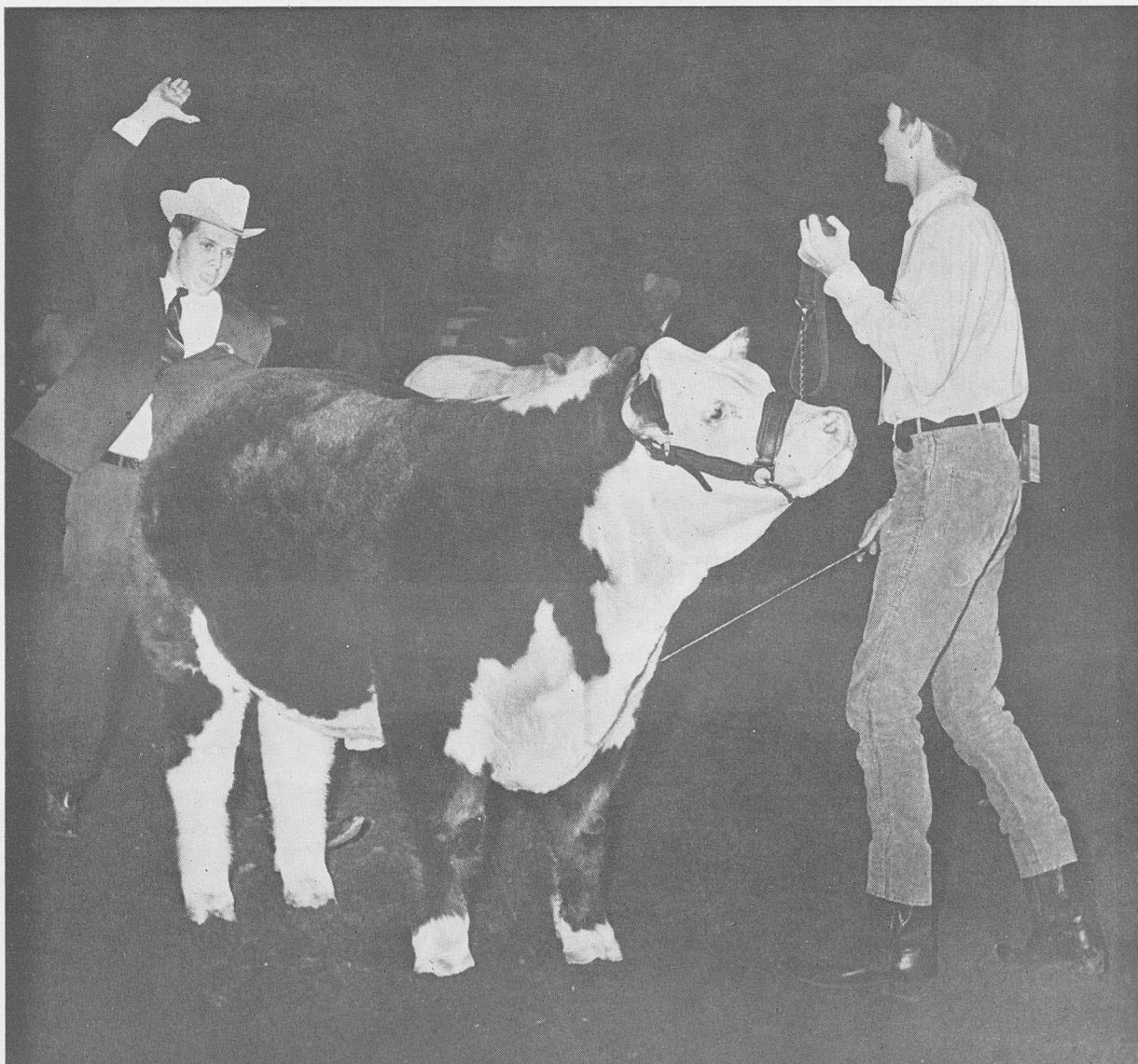


Feeding Beef Calves FOR SHOWS



ON THE COVER

1968 Houston Livestock Show and Rodeo Grand Champion Steer of show. Owned by Henry Musselman, Albany, Texas

ACKNOWLEDGMENT

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Feeding Beef Calves for Shows

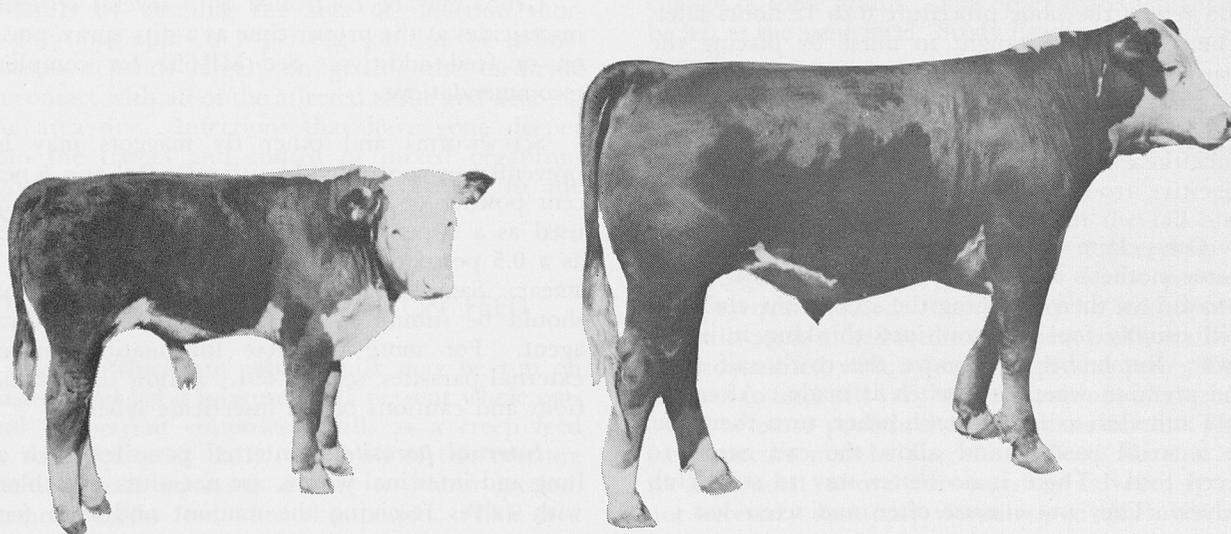
UEL D. THOMPSON, *Extension Animal Husbandman*
Texas A&M University

Selection of calves to be fed for show takes place while the calves are nursing and after weaning. Calves selected before weaning are left on their mothers or are nursed on foster mothers. They should be weaned by 7 to 8 months of age or at least a month prior to show. These calves may be creep fed to get maximum growth and development. Good pasturage while the calf is nursing will aid in its development. Calves of this age are more easily trained if hand fed each morning and night. Beginning 4-H Club members can more easily train and care for calves of this age than older calves.

Weaned calves which have been creep fed are ready to eat prepared rations. Calves which are just weaned and have not been accustomed to feed require 2 to 4 weeks to get on full feed.

Select calves, figure 1, which have good weight for age and growth potential, straight legs, width between hind legs, ample bone, length and width of body, trimness of dewlap, brisket and underline, muscling and symmetrical balance. Maximum thickness of body should be through the round at a point midway between the tailhead and the twist as viewed from the rear, indicating muscularity. The calves should be of USDA Prime or Choice Feeder Grade. They should come from herds having performance records. Ask for characteristics such as cutability, ribeye size, fat thickness, weight per day of age or daily gain during a 140-day feeding trial, feed conversion and carcass grade. Complete the 4-H Club Record Book for Meat Animal Projects, D-92, on each calf fitted for show.

Fig. 1. These Llano County calves are potential champion steers.



Calf feeders should endeavor to have steers reach the desired finish at the time of the show for which they are being fed rather than reaching the desired finish 1 or more months before the show. Reaching an early finish necessitates holding or even shrinking steers to attain or maintain the correct finish, which is extremely costly. Normally, this will be detrimental to the final quality grade of the carcass. Steers should be in a constant gaining state at show time rather than being at a standstill or even declining in weight.

HANDLING CALVES IN TRANSIT

Avoid injury to calves while they are being moved to new homes. Use a halter that fits well and tie each calf in the truck. Calves may be partly halter broken by this means on the way home.

Place the nursing calf in his shed or stall without feed or water and allow him to rest about 12 hours before attempting to get him to nurse.

The weaned calf should be confined in his pen and allowed good hay, limited water, salt and bonemeal for the first 3 days. Creep fed weaned calves may be given the same treatment, except continue feeding the same feeds which they have been eating.

TRAINING CALVES TO NURSE

Be cautious in getting the baby calf to nurse a foster mother. Tie the cow securely and hobble to keep her from horning, kicking or frightening the new calf. It is an advantage to use a cow which has a suckling calf at side. Ease the new calf up to the opposite side and let him nurse 1 teat. If the calf refuses to nurse take him back to his stall and repeat the same procedure 6 to 12 hours later. The calf may be taught to nurse by placing the teat in his mouth, or squirting milk on its nose. As a last resort, fill a small-necked bottle with milk and drench the calf. Limit the amount of milk until the calf can take all of the cow's milk without digestive troubles.

Cows claim their calves by smell. Covering the foster mother's calf with a tow sack, leaving it for 3 to 4 days, then switching the sack to the club calf will usually fool the cow into thinking it is her own. Remember to remove the cow's calf from the premises when the switch is made. After the cow and club calf claim each other, turn them out in a small pasture and allow the calf access to creep feed. There is no better way to start club calves. They nurse more often and scour less.

No radical changes should be made in the ration of the cow. If a change becomes necessary, make it gradually to prevent digestive trouble with the calf. A good mixture is 200 pounds yellow corn chops or ground sorghum grain, 200 pounds ground oats, 100 pounds wheat bran and 100 pounds cottonseed meal. Feed legume hay and silage when pastures are dry.

MANAGEMENT OF CALVES

Dehorning. Dehorn calves about 3 months of age to obtain well-shaped heads and to insure the least possible injury. Fly repellent, coagulant or other wound dressing may be used.

Castration. This necessary operation should take place about 3 months of age. Use a sharp knife and cut off the end of the scrotum in removing the testicles. Older calves may have more hemorrhage and wound infection. A skilled operator may use an ecraseur to remove the testicles and reduce hemorrhage. Use the same wound dressing as used for dehorning. Do not use bloodless castration methods.

Vaccination. Vaccinate calves to immunize them against blackleg and malignant edema. Local conditions may determine the immunization against anthrax, infectious bovine rhinotracheitis, bovine virus diarrhea, parainfluenza or other cattle diseases.

External parasites. Several wettable powders or emulsifiable concentrate insecticides may be used to dip or spray beef calves to control lice, flies, mosquitoes and ticks. These insecticides sponged or sprayed in the ear also control Spinose ear ticks. See Extension publication MP-691, *Texas Guide for Controlling External Parasites of Livestock and Poultry*, for specific recommendations.

Grubs may be controlled with several systemic insecticides at the proper time as a dip, spray, pour-on or feed additive. See MP-691 for complete recommendations.

Screwworms and other fly maggots may be prevented or controlled by using Co-Ral as a 5 percent powder or 0.5 percent spray. Korlan can be used as a 5 percent smear, 2.5 percent aerosol or as a 0.5 percent spray. EQ-335 may be used as a smear. Samples of any wound infesting maggots should be submitted to your county agricultural agent. For more complete information on all external parasites, see MP-691. Follow the instructions and cautions on all insecticide labels.

Internal parasites. Internal parasites, such as lung and intestinal worms, are not often a problem with calves receiving the amount and type feed

recommended. However, if internal parasites are suspected, take a manure sample to a veterinarian for diagnosis and treatment.

Bloat and scours. Digestive disturbances may be caused by infections, changes in character and intake of feeds and water, or changes in body functions due to environment. When bloat or scours occur, reduce feed intake and return to normal feed intake over a period of several days. Froth may be present in some bloated calves, and may require silicones or other wetting agents in addition to an antiferment to permit the animal to belch. If a calf bloats when lying on its right side be sure to get the calf up or on its left side. Consult your veterinarian or county agricultural agent if bloat occurs.

Non-infectious scours may be treated by correcting improper feed and/or milk intake, or by pills or liquids containing drugs such as kaolin, pectin and electrolytes. Scours caused by protozoa, viruses or bacteria, should be treated with drugs that have been found to be effective against the specific cause.

Warts. Infectious or virus-type warts usually grow on the head, neck, shoulders and occasionally on other parts of the body. Commercial wart vaccines may be helpful but are not always effective. Some warts may require surgical removal.

Ringworms. Swab lesions and surrounding area with a 7 percent iodine solution. Treat at least 1/2 inch outside the ring. See your veterinarian for other fungicide treatments.

Foot rot. The common organisms causing foot rot do not ordinarily penetrate normal skin. Injuries caused from mud dried between the toes, hard clods or sharp rocks or an object that will damage the hoof or skin allow the disease to start. In its earliest stages, foot rot often can be treated successfully by cleaning the area of infection thoroughly and apply a 7 percent solution of iodine. Success depends largely on getting the medicine in contact with all of the affected tissue and keeping the area dry. Infections that have gone deeper into the tissues and consist of mixed organisms should be treated systemically according to the extent and kind.

STARTING NURSING CALVES ON FEED

Calves which are getting milk may be run on pasture and fed a mixture of 85 percent whole oats and 15 percent cottonseed hulls as a creep feed or hand fed twice daily. Feed all of this mixture the calf will consume during a 1-hour period. Remove excess feed after this period. This is a

growth and development period and the calf may be fed in this manner until weaned or until sufficient time prior to the show date as is needed to get to the desired weight. Estimate about 2 pounds per day daily gain. Fall and winter calves may be fed in this manner until grass grazing plays out about June. From then on, the calf may be weaned and fed on the following Master Feed Mixture:

MASTER FEED MIXTURE

30% crimped oats	5% bran
30% rolled sorghum grain	1% alfalfa pellets
15% rolled corn	3% cottonseed hulls
10% sweet feed	.5% salt
5% protein pellets	.5% trace minerals
20,000 international units of Vitamin A daily per head	

See roughage discussion, page 6.

Start daily feeding of 3 percent of calf body weight ($.03 \times 400 \text{ lb. calf} = 12 \text{ lb. feed.}$) Half should be fed in the morning and half at night. Allow about a week for the calf to get on feed and begin to remove the feed which is left after 1 hour of eating time. If all the feed is eaten, add feed until calf is taking what he will consume. Increase and decrease the feed throughout the feeding period according to appetite and development of calf. Keep the feed trough clean and keep the calf wanting feed as you enter the pen at feeding time.

The Master Feed Mixture may be changed to fit differences in calves, availability of feeds and specific shows. The principle behind this feeding program is to first grow and develop the calves and then finish to the Prime or Choice Grade. The percentage of oats may be increased or decreased to fit the calf. Sorghum grain, corn and barley are the real fattening feeds. Therefore, any changes made with oats would involve a corresponding change of these grains. The other ingredients may be left at the same level. Study *Feeding Suggestions*, page 6.

STARTING WEANED STEER CALVES ON FEED

Weaned steer calves purchased in the fall and weighing 400 pounds may be managed several ways. Winter grazing on oats, ryegrass or wheat pasture is a practical method. Calves may be fed supplementally some mixed feed to get them partly trained and acquainted with a feed trough and pen. The amount to feed will vary with the amount of grazing but 2 or more pounds should be considered. The feed mixture may be the Master Feed Mixture as recommended above for nursing calves. It is not necessary to supply vitamin A in the mixture.

Grazing may be continued until the oats, ryegrass or wheat are grazed out and the calves may be placed on improved Bermudagrass or summer Sudan pasture. Calves need about 4 to 6 months of concentrate feeding prior to show date. The Master Feed Mixture may be fed during the entire feeding period by simply increasing the amount. This is a growth and development feed mixture and will add enough finish for today's market when fed over a long enough period in sufficient amounts.

Another system of management would be to purchase weaned calves for spring and summer grazing. The same method of feeding as explained earlier may be followed. Under this system the calves would be removed from the pasture about September and fed for the winter and early spring shows.

Some years grazing may not be available after the calves are purchased. In this situation, growth gain of 1 to 1½ pounds daily per head should be made. Hays and silages may be used as the roughages and any of the grains or grain combinations may be fed along with a protein supplement. A mixture of 90 percent ground sorghum grain, 10 percent protein supplement and 15,000 international units of vitamin A may be fed at the rate of 1 percent of body weight. Roughage should be fed at the rate of 2 percent of body weight.

Weaned 400-pound calves should be grown to 600 pounds and then finished to the weight desired for the specific show.

FEEDING

Both weaned and nursing calves should be hand fed. Follow a set hour in the morning and evening daily. Variations from this time schedule and abrupt ration changes may cause scours or calves may go off feed. Gradual changes in feed mixtures may be done over a period of 1 week. Feed troughs should be kept clean and all left-over feed from any feeding should be removed after 1 hour. Teach the calf to eat in this time period and he will become accustomed to this practice. Feeds should be free of molds, off odors and dust.

FEEDING WEANED BULL AND HEIFER CALVES

Good growth and development should have more emphasis than fattening. Excessive fattening impairs breeding efficiency and lowers milk production. Rations for breeding cattle should contain a smaller percentage of heavy grains, such as corn,

sorghum grain or barley and a larger percentage of oats.

The suggestions, pages 5 and 6, for Starting Weaned Steer Calves On Feed may be used to start weaned bulls and heifers on feed. A calf creep fed before weaning may be hand fed the creep mixture after weaning. Gradually reduce the creep mixture by ¼ pound daily and add the same amount of the Master Feed Mixture.

The Master Feed Mixture may be fed throughout the entire feeding period. Feed at the rate of 1½ pounds daily per head per 100 pounds calf body weight. Feed the calf twice daily. One hour after feeding the concentrate, remove any leftover feed from the trough. Make feed increases according to calf gains or about ¾ pound at 15-day intervals. Expect good growth and development rather than a high degree of finish. Allow the calf to eat all of the good quality hay it wants. Keep hay fresh.

FEEDING SUGGESTIONS

Grain. Feed good-quality grain. Avoid weevil-eaten, dusty and spoiled feeds. Calves weighing up to 400 pounds can digest whole kernel corn and oats satisfactorily but, beyond this weight, all grains should be cracked, rolled or crimped. Sorghum grains may be micronized.

Yellow corn is the best fattening grain, but it may be replaced pound for pound in any mixture by sorghum grain. Rolled or coarsely ground wheat or barley may replace up to 50 percent of the corn or sorghum grain in the ration. Since these are fattening grains, feed high percentages to finish calves in a hurry. Oats are the best growth and development grain.

Protein. Cottonseed, peanut, soybean or linseed as meals, pellets, cubes or cakes supply protein. Pea-sized cake, screenings or small pellets are more desirable than meal unless all feeds are ground. A combination of at least two of the protein feeds has some merit, particularly from a palatability standpoint. Equal parts of cottonseed and linseed meals are as good as linseed meal alone. Linseed meal in a ration tends to produce a glossier hair coat than does cottonseed meal. Availability and price may determine which to use. Commercial protein supplements which contain a variety of the oilseeds may be fed.

Roughage. Cottonseed hulls are the most satisfactory roughage for club calf feeding. More digestive troubles are encountered by feeding cane, Johnsongrass or Sudan hays. Pea-green alfalfa

usually is too expensive and too high in protein to feed more than 2 pounds daily per head. Brownish colored alfalfa hay may be fed in the same manner as prairie, common or Coastal bermuda and cottonseed hulls.

Grass hays are highly variable in their quality. High-quality hay is free of mold, smut, dust and bad odors. It is bright green, fine stemmed, leafy and practically free of seed heads, and should contain at least 10 percent crude protein.

The amount of roughage to feed depends on the feeding schedule and the individual calf. A nursing calf may be fed its roughage free choice for the first 100 days and limited thereafter to no more than 1 percent daily of calf body weight. Limit the weaned calves to no more than 1 percent daily of their body weight when on full feed. Less digestive problems are encountered when the ration fed is no less than 10 percent roughage.

The Master Feed Mixture, page 5, is approximately 10 percent roughage. Therefore, some calves would not need additional roughage. Steer calves which tend to develop too much middle should have their roughage restricted. Bull and heifer calves may need to be fed roughage in addition to that in the Master Feed Mixture.

Vitamin A. One to 2 pounds per head per day of green legume hay may supply adequate vitamin A. Due to the variability in the carotene content of these hays, 1 to 2 percent of alfalfa meal or pellets added to the mixture may replace the hay. Nursing calves grazing green pasturage get their vitamin A in the milk. Synthetic vitamin A also may be mixed with the ration at the level of 20,000 international units daily per head. Use amount recommended by manufacturer. Vitamins A, D and E are available commercially and may be fed at levels recommended by the company.

Vitamin D. Texas cattle receive ample vitamin D from sunlight.

B-complex vitamins. These vitamins need not be added to the ration.

Sweet feed. Sweet feed should contain cracked corn, rolled barley, crimped oats and molasses. This usually contains enough molasses that additional molasses does not need to be added to a feed mixture. It should be free of materials such as peanut hulls, rice hulls and corn cobs. Use no more than 10 percent in the ration.

Wheat bran. Wheat bran adds variety to the ration and is somewhat laxative, thus making a good conditioner.

Minerals. Mineral requirements, except salt, usually are supplied in the ration. Granulated salt should be available at all times. All calves should have access to steamed bonemeal. Trace minerals may be fed separately but are not generally needed. The calcium and phosphorus ratio in the mineral should be no more than 2 to 1, respectively.

Yeast. Yeast feeds are of little value to normal, healthy cattle on a good ration. They may help in cases where the stomach flora has been disturbed.

Tranquilizers. Tranquilizers affect the central nervous system and the effects are highly variable. Extremely nervous animals may be calmed by injections. Such treatments are temporary and may be effective up to 36 hours. Consult your veterinarian for recommendations.

Antibiotics. Antibiotics such as aureomycin or terramycin, supplied in the feed mixture at the rate of 10 to 15 milligrams daily per 100 pounds live weight, may be effective in preventing some feedlot troubles. This low-level feeding will help control low-level infection, but has little effect on increasing gain. These may be purchased in some protein supplements.

Hormones. Hormones such as Stilbestrol and Estradiol-Progesterone increase rate and economy of gain, but usually lower the carcass grade about 1/3 grade. The hormones prepared in premix protein supplements are safe to use. Ear implants also may be used according to the manufacturer's recommendations. Certain restrictions with reference to slaughter must be followed. Cattle receiving hormones in feeds must be taken off such feed 48 hours before slaughter. Ear implants must be given at least 100 days before slaughter.

Hormones sometimes cause high tailheads and low loins, thus affecting general appearance. They have an advantage when feeding for feed efficiency and gain.

Hormones are not recommended in rations or as implants for bull or heifer calves.

Management hints. Calves up to 400 pounds do better on whole, crimped, rolled or coarse-cracked grain than on finely ground grains. Calves fed longer than 140 days have less digestive troubles when fed coarse rather than finely ground feeds.

Calves do better on twice-a-day feeding at a regular time than when self-fed. Remove leftover feed after 1 hour.

Daily mixed feed apparently is more appetizing than premix batches. Two calves eating together do better than 1. Clean the feed troughs and pens

and scrub the water trough daily. Pelleted feeds have merit, but increase feed cost.

Controlling the temperature of the feeding pen area will aid in increasing calf performance. Shade, fans, fogging devices, moist sand and insulating materials may lower the temperature as much as 10 degrees F.

Wetting calves during the hot part of the day and brushing the hair upward will stimulate hair growth. Regular brushing daily will also aid in gentling the calf.

Wash calves monthly after confining in pen until a month before show, and then wash weekly. Wash the day before showing. More frequent washing may be necessary under some conditions. Scrub clean each time and rinse out all soap.

Walk calves at least 1/2 mile daily to stimulate appetite, aid in digestion and strengthen feet and legs. This practice should start after pen confinement and continue to show day. This is a good time to train the calf to stand with a leg under each corner.

!! Cautions -- Restrictions !!

The Food and Drug Administration has the responsibility of establishing safe drug tolerances in meats consumed by humans. Certain feed additives and drugs which are fed, administered orally or by injection have pre-slaughter restrictions. It is the responsibility of the owner of the animals to know restrictions on each product used. Although a veterinarian or someone else administers a drug, it is the owner's responsibility to market a healthful product. Therefore, agents, leaders, 4-H members and veterinarians need to be mindful of these restrictions and refrain from practices which may be in conflict with United States Department of Agriculture and Food and Drug Administration regulations.

EXAMPLE OF BALANCING A DAILY HAND-FED RATION

Question: How many quarts or pounds of each feed are needed daily for a 400-pound calf in drylot?

Feed Requirements

Master feed mixture – Estimate feeding 3 percent of body weight.

Roughage – Read roughage discussion, page 6.

$$400 \text{ lb.} \times .03 = 12 \text{ lb. total master feed mixture to be fed daily}$$

Master feed mixture	Percent		Lb.		Lb.	Qt.
Crimped oats	.30	×	12	=	3.60	3.6
Rolled sorghum grain	.30	×	12	=	3.60	2.0
Rolled corn	.15	×	12	=	1.80	1.0
Sweet feed	.10	×	12	=	1.20	.8
Protein pellets	.05	×	12	=	.60	.5
Bran	.05	×	12	=	.60	1.2
Alfalfa pellets	.01	×	12	=	.12	.1
Cottonseed hulls	.03	×	12	=	.36	1.0
Salt	.005	×	12	=	.06	.03*
Trace minerals	.005	×	12	=	.06	.03*
Totals	100				12.00	10.2

*Use 1 teaspoon daily.

Answer

$$12 \text{ lb.} \div 2 \text{ times daily} = 6 \text{ lb. each feeding}$$

$$10.2 \text{ qt.} \div 2 \text{ times daily} = 5.1 \text{ qt. each feeding}$$

Feed Weights

Feeds	Weight in lb. per qt.
Alfalfa pellets	1.3
Barley, whole	1.5
Corn, whole	1.7
Corn and cobmeal	1.4
Cottonseed meal	1.5
Cottonseed hulls	.4
Minerals	2.0
Molasses, cane	3.0
Oats	1.0
Protein supplement	1.2
Salt	2.3
Sorghum grain, whole	1.8
Sweet feed	1.5
Wheat, whole	1.9
Wheat, bran	0.5

Because feeds vary in weight the feeder should weigh each feed in the coffee can or bucket he uses and write down the volume required to fulfill the poundage requirement. New purchases should be checked.

FEEDLOT FACILITIES

Proper equipment in the feedlot and the management of the calf throughout the feeding period are of prime importance.

Fence. Construct of materials which permit maximum airflow. Electric fences are excellent, net wires are good, but wood and barb wire are the least desirable.

Shed. A 6' x 8' shed is ample space for one calf. Plenty of air circulation through the shed adds to the comfort of the calf during hot weather.

Shade. A 10' x 10' brush arbor is large enough to provide shade during the heat of the day. Clean sand under this arbor, moistened twice a day, will aid in keeping the calf cool and comfortable.

Feed trough. Portable type plastic or metal feed pans are popular because they can be kept clean and the same pan taken to the show. Structures should be built around the trough to prevent feed waste and yet allow pan removal for cleaning. Calves should stand at the trough while eating with their front feet about 2 inches higher than hindfeet. Stationary troughs may be built as suggested on page 11.

Feeders located under the brush arbor are advisable in some areas, particularly during hot weather.

Hay box. A small portable box placed on the ground in the shed and holding only 1 or 2 blocks of hay is preferable. This type of box will conserve hay but should be cleaned daily. Discard all old hay.

Mineral box. This should be attached to a shed wall and should contain fresh granulated salt at all times as a lick for the calf. The box should be divided so other minerals may be fed if needed.

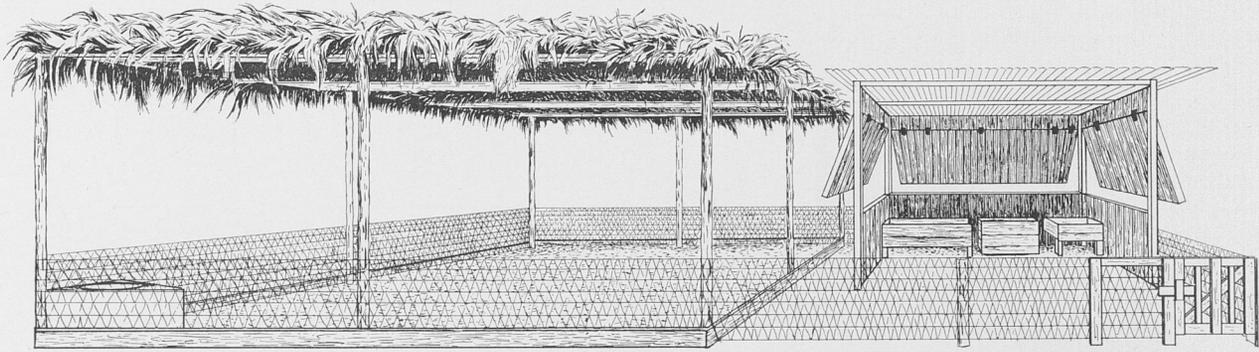
Water container. Fresh, clean water, some distance from the feed area should be available to the calf at all times. Keep the trough or container clean and about 68 degrees F. Portable or fountain drinking containers are good.

Bedding. Creek sand, if available, is best; otherwise, straw or some similar material can be used. Keep bedding clean.

Feedlot. This should be well drained and sanitary at all times. Provide at least 200 square feet of space to assure the calf some room for exercise. Fly baits aid in fly control. Flies hatch in filthy moist places. Use hydrated lime to aid in the cleaning of these areas.

Points to Remember

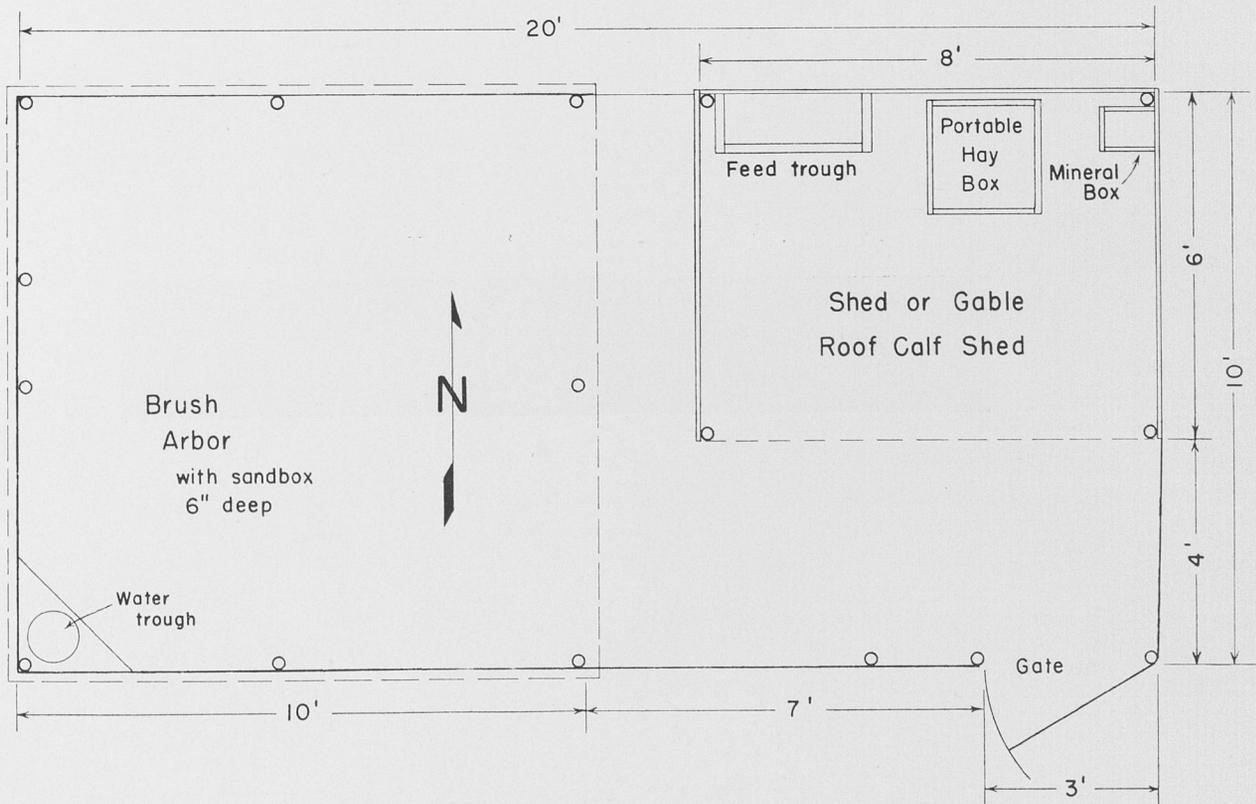
- Select Prime or Choice Grade calves from a herd known to produce good feeders.
- Be sure to dehorn, knife castrate and vaccinate calves early, being careful to avoid injury and infection.
- Treat calves promptly at first appearance of external or internal parasites.
- Consult your county agricultural agent if digestive troubles such as bloat or scours occur.
- Insure comfort for your calf by providing shelter, clean bedding, shade and moist sand. Provide fresh clean water at all times.
- There is no substitute for quality feed, both grain and hays. See that your calf gets all he wants to eat at regular hours every day.
- Brush your calf every day and wash him frequently.
- Be sure to trim the hoofs as needed.
- Get thoroughly acquainted with your calf at the start of the feeding period.
- Teach your calf to lead early and pose him regularly so that he will show to advantage.
- An open trough may be protected from birds by building a frame above and suspending heavy duck cloth or sacks down to the top of the trough.



SKETCH SHOWING MINIMUM FEEDLOT EQUIPMENT AND ARRANGEMENT FOR FEEDING ONE CALF

Pen and brush arbor	Water trough	Feed trough	Portable hay box	Mineral box	Shed or gable roof type calf shed
Pen posts 5 ft. apart. Net wire 5 ft. high. Shade 8 ft. high.	Removable type No. 2 wash tub size.	4 in. above ground 3 ft. long 2 ft. wide 8 in. deep Use 2 in. lumber. Portable pan is good.	1 x 12 lumber 2 ft. long 2 ft. wide 2 ft. deep	8 in. above ground 1 ft. long 1 ft. wide 4 in. deep	8 ft. long, 6 ft. wide 6 ft. high at plate Dirt floor. Hinged openings on sides. Insulated roof.

For each additional calf, allow 100 square feet more pen space, 1 running foot more feed trough space, 24 square feet more shed and brush arbor space, 1 running foot more hay box space and 10 gallons more water trough capacity.





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