

replenish lost body fluids while providing enough energy for the calf to maintain its body weight and, preferably, grow. Therefore, scouring calves should be fed more than twice daily and milk replacer should continue to be given. Consult Hoards' Dairyman (Jan. 10, 1992) for Dr. Sheila McGuirk's discussion of treating calf scours with fluids and energy sources. The following approach is based on her presentation:

- A.** Assume that a healthy, 100-lb calf receives one pint of milk for each 10 lbs of body weight, or 10 pints daily, fed as five pints in each of two meals.
- B.** At the first sign of scours, begin feeding 2.5 pints of milk at each meal four times daily with about four hours between each meal. Fifteen minutes or more after feeding the milk replacer, feed an equal volume of electrolyte solution. Any milk or electrolyte solution which is not voluntarily consumed should be force-fed via an esophageal tube. This practice provides the calf with 20 pints of fluid daily and should be continued for the first two days after scours is noticed.
- C.** Assuming that there is decreasing diarrhea, beginning on the third day the volume of electrolyte solution can be reduced and tapered down to zero by day seven. If scours recur during the treatment period, increase the volume of electrolyte offered to compensate for lost fluids. When scouring has stopped, frequency of feeding can be reduced by dividing the volume of milk replacer into three equal feedings per day for the next two days, and then normal twice daily feeding can be resumed.
- D.** For severe outbreaks of scours which do not respond to this strategy, get the help of your veterinarian.

Pneumonia in calves is also a serious concern. This is an inflammation of the respiratory tract that may be caused by stress and a variety of bacteria or viruses. A calf with pneumonia usually has a runny nose and fever, coughs, and breathes with some difficulty.

Some calves may have sub-acute pneumonia, never showing any sign of a runny nose or coughing, but after a few weeks suddenly die. Often calves with sub-acute pneumonia do not eat as much as normal and grow slowly. So it is wise to have the veterinarian check questionable calves for lung congestion. Overcrowding, drafts, poor ventilation, and poor sanitation are conditions which are apt to cause pneumonia. When treating with antibiotics, continue to give them for at least two days after the calf appears to be back to normal, with a minimum treatment duration of four days. This helps prevent a recurrence of the disease.

Arrange to work with the healthy calves before treating the sick calves. This minimizes the involvement of the calf grower in the spread of disease. Be mindful of any practices which could improve the cleanliness of people who manage the calves.

VI. Summary

Several points should be remembered for successful health management of calves:

- A.** There is no substitute for buying healthy, colostrum-fed calves.
- B.** A continuous and strict sanitation program is critical in controlling disease buildup. Consider all calves as having been exposed to disease when you get them.
- C.** Early detection, diagnosis and treatment of disease are critically important in obtaining recovery and preventing mass outbreaks.
- D.** Facilities must be disinfected and rested between groups.



Calf Nutritional Management from Birth to Weaning

Contact your extension agent and request a copy of North Central Regional Extension Publication #205 which is entitled "*Raising Dairy Replacements.*" This publication has an informative presentation on feeding milk replacer and calf starter.

I. Milk Replacer

Milk is nature's best food for the calf since its dry matter is high in energy, natural protein, calcium and other minerals. Milk replacer is used rather than milk because of convenience and cost. An excellent, brief publication on this topic is "*A Guide To Modern Calf Milk Replacers,*" published by the Bovine Alliance on Management and Nutrition. Contact your local extension agent or the University of Wisconsin-Madison Animal Sciences Department to request a copy. Modern milk replacers can be classified by protein source, energy content and presence of medication. Here are a few guidelines to follow when feeding a milk replacer.

- A. Protein level in milk replacers generally ranges from 18% to 22%, but the protein can be in a wide variety of sources.

Recommended

Dried Whey Protein Concentrate
Soy Protein Isolate

Dried Skim Milk
Protein Modified Soy Flour
Casein
Soy Protein Concentrate
Dried Whey
Modified Wheat Protein
Dried Whey Product

Acceptable

Soy Flour
Animal Plasma

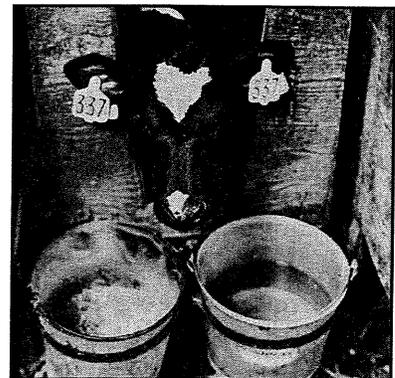
Not Recommended

Meat Solubles
Fish Protein Concentrate
Wheat Flour

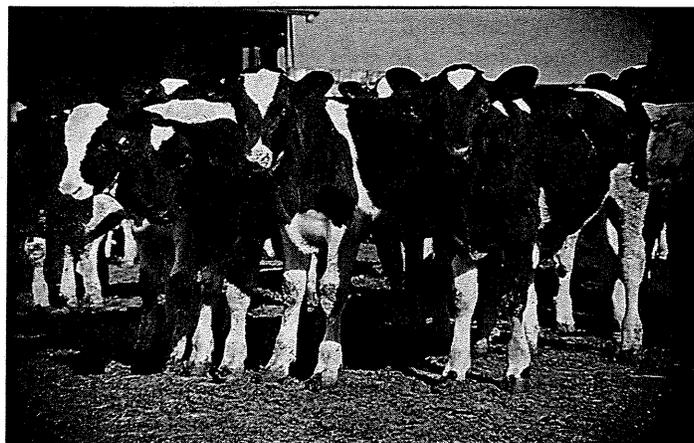
- B. Fat content of milk replacers may range from 10% to 22%. Use high fat milk replacers when ambient temperature is less than 32 degrees F, and increase the amount of milk replacer fed by 30-50%.
- C. Bacterial diarrhea can be attacked with milk replacers containing chlortetracycline, oxytetracycline and/or neomycin. Decoquinatate is included to prevent coccidiosis.
- D. Feed calves consistent amounts of milk replacer at regular intervals to avoid nutritional scours.
- E. Many "quality" problems associated with milk replacers result from choosing the wrong type of milk replacer for a particular situation. The first priority is production of healthy, rapidly growing calves; the second priority is to minimize milk replacer expense.

II. Calf Starter and Hay.

The first dry feed offered to calves is termed calf starter. It should contain 75-80% TDN and 15-20% protein. Mixtures of whole



or rolled oats and corn with molasses and soybean meal are attractive to calves and highly digestible. Calf starter should be kept fresh and offered to the calf already in the first week. When hay is offered, it should be a good quality alfalfa-grass hay and not be fed above 25% of the calf's dry feed intake. The goal is to encourage grain consumption by limiting hay consumption. Cool water should be available free choice from the time the calf is started on milk replacer. Do not feed water just before feeding milk replacer to calves less than three weeks of age.



III. Weaning

To wean, reduce the milk replacer powder gradually over 4–5 days while keeping the total liquid volume constant. A good rule of thumb is to wean the calf when it consumes 1 to 1½ lbs. of grain per day for the previous 4 days. The consumption of calf starter will increase even more after weaning. Depending upon how well the calf develops, it may be 5 to 6 weeks of age when it is weaned. Lower the barn temperature gradually, over a period of several days to 38–40 degrees if putting calves out into a cold barn at weaning.

IV. Castration and Dehorning

Castrate and dehorn calves in the fifth week or later after arrival but before removing them from individual pens.

Use of an electric dehorning iron to remove the horn cap is an effective and bloodless method of dehorning. Removal of both testes by knife castration is preferred. Placement of growth-stimulating implants at the

time of castration will enhance growth rates and more than cover the cost of the implant.

V. Housing

The calves can be grouped at 6–8 weeks. Managing them in an outside lot with a bedded shelter from precipitation is preferable due to improved air quality. The shelter should be managed so that its interior is dry and draft-free. Provide an opening in the roof's ridge so that warm, moist air doesn't accumulate in the building. Holsteins have thin hides so they prefer to be sheltered from brisk winter winds and to have dry bedding. Space requirements in a shelter with a manure pack on a per head basis are as follows:

Weight Range, lbs	Square Foot Allotment
150 – 300	10 – 15
300 – 500	15 – 20
500 – 1000	20 – 25
1000 – slaughter	25 – 30

VI. Economics

Shown on the next page is a calf-raising budget. Adjust the prices to fit your farm and determine if raising calves can be profitable. Record keeping is essential to good management and profitability. Know a projected cost of production before calves are purchased. Contact Packerland Packing Company to obtain an estimate of calf value in the future for calves at your specified selling weight. We want you to be in business and be able to stay in business as a constant supplier of calves. To do that, you have to be profitable.

Nutritional Management for Holstein Steers from 350 lbs to Market Weight

Numerous factors affect the profitability of raising and marketing Holstein steers including the volume of competing meat supplies, current cattle supply levels, and consumer spending. In any industry, there are operations that fail and those that succeed. It is our intent to present those practices that hopefully will make the reader a successful entrepreneur in the business of raising, feeding and marketing Fed Holsteins. This material is a combination of information gleaned from university

research and extension publications and industry literature and experience.

Design a Feeding Program

Several factors should be considered when designing your feeding program. What are relative costs of common diet ingredients? Are corn prices low in relationship to forage prices or vice versa? Do you have an abundance of forages to consume from your farm operation? Are you purchasing all of your feed or do you produce part of it? What are the prevailing interest rates? Will you be using labor, facilities and equipment that would otherwise be under-utilized? These factors affect the design of a feeding program. A very important goal is to minimize your cost of production.

We feel it advisable that you establish a close working relationship with a feed company. Since we ask the feed company to



certify your production practices in our forward contracting program, that company should have the latitude to design a feeding program which fits your resources. However, there are some feeding practices we strongly

(Continued on page 10)

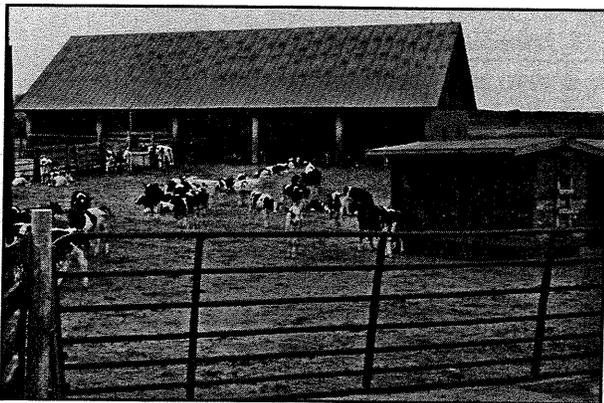
Table 1. Feeder Calf Production Budget From Purchase to 350 lb. Market Weight

Duration 0 - 8 wk				Cost	Your Cost
Calf cost	100 lb	\$ 0.75 /lb	\$	75.00	_____
Milk replacer	25 lb	\$ 0.84 /lb	\$	21.00	_____
Calf starter	50 lb	\$ 0.18 /lb	\$	9.00	_____
Protein supplement	3 lb	\$ 0.20 /lb	\$	0.60	_____
Unit corn cost	\$ 2.75 /bu	\$ 0.05 /lb			
Corn cost	10 lb	\$ 0.05 /lb	\$	0.49	_____
Death loss		5 %	\$	3.75	_____
Veterinary			\$	7.50	_____
Labor & facilities		\$ 3.00 /wk	\$	24.00	_____
Interest		10 %/yr	\$	1.15	_____
		Cost-Subtotal	\$	142.49	_____
Calf wt.	8 wk	175 lb			
		Break-even (\$/lb)=	\$	0.81	_____
Duration 9 - 18 wk				Cost	Your Cost
Protein supplement	120 lb	\$ 0.16 /lb	\$	19.20	_____
Unit corn cost	\$ 2.75 /bu	\$ 0.05 /lb			
Corn cost	400 lb	\$ 0.05 /lb	\$	19.64	_____
Death loss		2 %	\$	2.85	_____
Veterinary			\$	2.25	_____
Labor & falsities		\$ 2.10 /wk	\$	21.00	_____
Interest on cost subtotal		10 %/yr	\$	2.74	_____
		Cost-Subtotal	\$	67.68	_____
Total Cost			\$	210.18	_____
Calf wt.	18 wk	350 lb			
		Over-all break-even (\$/lb)=	\$	0.60	_____

CALF FEEDING & PURCHASING AGREEMENT EXAMPLE

This agreement is made this _____ day of _____, 19____ by and between _____ of _____ (SELLER) and _____ (BUYER).

1. SELLER agrees to start _____ baby Holstein bulls the _____ week of _____, 19 ____ to have Holstein steers to sell to BUYER at approximately _____ lbs. between _____ and _____, 19 ____ . SELLER agrees to use good animal husbandry practices in the feeding and care of said calves and will utilize the assistance of _____ of _____ in determining the animal husbandry practices to be followed. Calves will housed and fed by _____ at _____.
2. The calves will be castrated, dehorned, implanted and vaccinated at least _____ days prior to sale and delivery, with actual dates and products used for processing provided to BUYER in a form similar to the Holstein Steer Starter Certificate attached hereto. The calves will be weaned and started on a high energy diet consisting of at least 90% concentrates. The grain diet specifications are to be agreed to by BUYER and SELLER.
3. Calves delivered to BUYER will be healthy, steers of the Holstein breed, and as specified in paragraph 2 above. BUYER will have the right to inspect the calves during the growth period. BUYER will inspect calves at delivery and has the right to reject calves that do not meet the specifications contained in this agreement. Delivery times shall be agreed to by BUYER and SELLER. BUYER will take delivery at SELLER'S premises.
4. BUYER agrees to pay SELLER _____ per calf for _____ calves when this contract is signed. Further BUYER agrees to pay SELLER _____ per lb., less the _____ per calf earnest money previously advanced, for _____ lb. Holstein steer calves, plus or minus _____ per lb. for the weight above or below the _____ lb./calf weight on a load to load basis. Calves will be weighed at _____. This contract is for _____ calves that meet the specifications of this agreement. BUYER will pay SELLER for calves delivered by the end of the business day following delivery.
5. SELLER warrants it owns the calves free and clear, except for a lien against said calves for operating capital obtained from _____ (BANK). SELLER is authorized by BANK to sell said calves.



6. Upon default of any conditions of this Agreement and in addition to all other remedies, legal and equitable available to the Buyer, the Buyer shall have the sole right to remove all of the remaining cattle from Seller's possession.

7. It is specifically understood and agreed that SELLER is an independent contractor engaged in the separate business of raising and feeding Holstein calves. Nothing contained herein is intended or construed to create a partnership, joint venture employment, joint enterprise or any relationship other than BUYER and SELLER.

HOLSTEIN STEER STARTER CERTIFICATE EXAMPLE

Eartag No. _____ to _____ in left ear No. Steers _____ No. Heifers _____

Mandatory practices to be completed 21 days prior to delivery of calves to feedlot.

Castrate _____	(Date)	(knife preferred)
Dehorn _____	(Date)	(electric dehorning preferred)
Implant _____	(Date)	_____ (Product)
Deworm _____	(Date)	_____ (Product)
Lice Control _____	(Date)	_____ (Product)

Implant at the time of castration with an implant product designated for calves.

Suggested Immunization Schedule^a

Vaccine	Booster	Date Given	Product Name	Administered By:
^b IBR, PI ₃		_____	_____	_____
^c Pasturella		_____	_____	_____
^d IBR, BVD, PI ₃ , BRSV	1	_____	_____	_____
^e Clostridial 7-way	1	_____	_____	_____
^d IBR, BVD, PI ₃ , BRSV	2	_____	_____	_____
^d IBR, BVD, PI ₃ , BRSV	3	_____	_____	_____
^e Clostridial-7 way	2	_____	_____	_____
^d IBR, BVD, PI ₃ , BRSV	4	_____	_____	_____

- ^a Personal communication with Dr. Herb Rebhan, New Richmond, WI is acknowledged. Consultation with your local veterinarian is strongly encouraged when establishing a vaccination schedule and when treating disease outbreaks.
- ^b Administer this vaccine intranasally when calves reach calf-growing building (day 1). Also, administer a **selenium** and **vitamin E** injection and a **B vitamin** injection.
- ^c Administer a few days after arrival; day 3 suggested
- ^d Administer in the form of a modified live vaccine, day 5 of week 1 suggested; administer a booster vaccination on days 14, 28 and 42.
- ^e Administer vaccine several days after the immunity against respiratory disease has been initiated with preceding vaccinations; day 12 suggested; give a booster dose of this vaccine just prior to weaning.
- ^f A second selenium and vitamin E injection is recommended to be given near the time of weaning.

Additional recommended practice:

Utilize feed additives which are ionophore or coccidiostat products.

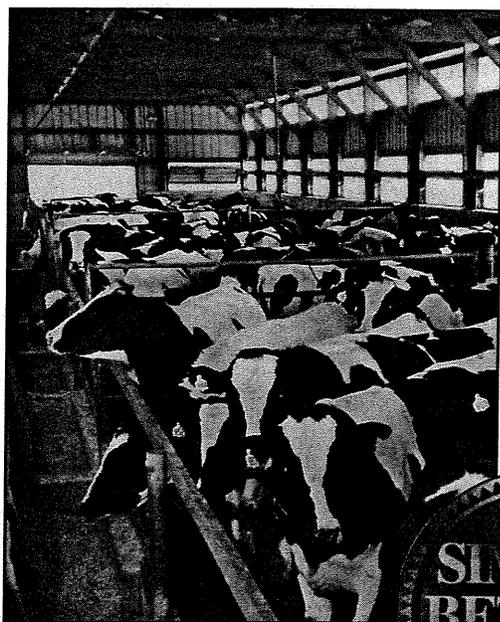
Holstein Steer/Heifer Certification

The undersigned hereby declares and certifies that the above practices, treatments and vaccinations have been carried out and administered under my supervision to all the cattle identified by this certificate.

(Name of Seller)	(Address)	(Date)
(Name of Feed Dealer)	(Address)	(Date)

recommend because of the nature of the Holstein steer and because we are interested in promoting the production of young, Choice-grading cattle.

Holstein steers have a higher maintenance requirement than traditional beef-breed steers, therefore it will be to your advantage to minimize the number of days you own and feed these steers. When pasture is available, daily gains as low as 2 lbs/day can be tolerated. But after these steers are moved into confinement, rapid weight gains are more cost-effective. Consumption of digestible energy determines the growth rate of confined cattle in most situations. Grains contain more digestible energy per unit of weight than do forages (Table 2), therefore feeding grain allows cattle to consume more digestible energy and grow faster. Alfalfa hay or haylage can be used to replace supplemental, purchased protein. Consider how your farm's legumes



could minimize the need for off-farm protein purchases. Cattle can be fed once or twice per day, but feeding needs to occur at the same time every day. The goal is to have most of the animals in a pen eating at nearly the same time, and for the pen of cattle to fluctuate very little (less than 10%) in daily feed consumption. Manage the feed bunk so that the feed offered at each meal is nearly eaten prior to feeding the next meal. Keep a record of how much feed is offered at each meal

so that intake fluctuations can be recognized.

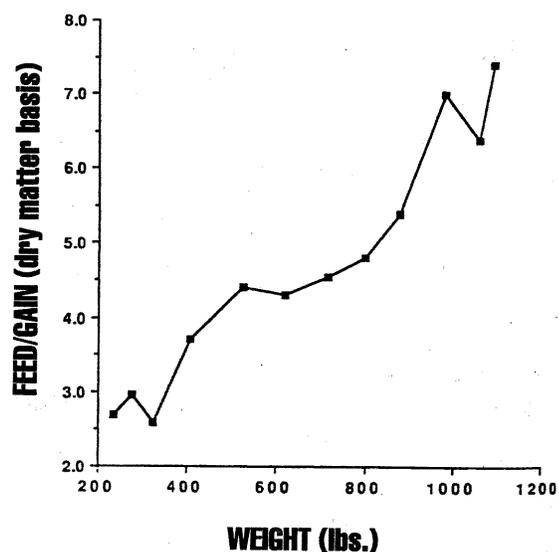
so that intake fluctuations can be recognized.

Cattle need to be adjusted gradually to diets with high proportions of grain so that founder is avoided. It is desirable to start cattle on a diet containing 50% forage and slowly decrease the forage proportion while increasing the grain proportion over a 21- to 28-day period. The recommended minimum proportion of corn silage in the diet dry matter is 10% or, if hay is the forage source, the minimum is 5%. It is easier to keep cattle eating a consistent amount of feed from day-to-day when corn, rather than barley or wheat, is the primary grain. Whole, rolled or cracked grains are less likely to cause cattle to go "off feed" than finely ground grains, especially when a high-grain diet is fed. Follow the recommendations of your feed company when feeding minerals, vitamins, an ionophore (to improve feed conversion efficiency) and an antibiotic (to reduce the incidence of liver abscesses).

Cattle Feeding Budgets

It is imperative that you keep records of costs. Without knowing your costs, you can't possibly determine when to hedge your cattle

Feed Efficiency of Holstein Steers

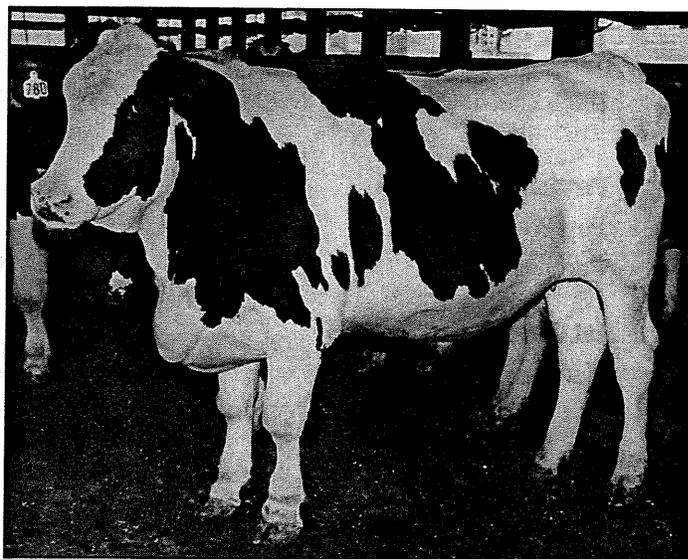


Note how the feed consumption per pound of gain rises as the animal gets heavier. It's good feed economics to finish these cattle rapidly.

profitably. Feeder cattle costs and feed costs vary seasonally and yearly. Different feeders have different fixed costs. Plug your own costs into the budgets in Tables 3 and 4, determine your breakeven level and then determine whether the hedge price in the forward contract will provide you with a desirable profit level. We consult continuously with feeders in this decision-making process. It's part of our service. Remember: We want you to be profitable; we want to keep you in the cattle business.

When should a cattle feeder hedge or forward contract?

The answer is—when you reach your marketing objective. At times you may have to forward contract to minimize losses. Successful hedgers study the markets and are students of probabilities. In other words, if the prob-



ability of the current market going down is greater than that of going up, then you "forward contract" to establish a minimum

(Continued on page 14)

Table 2. Energy Values of Common Feeds

Feed	Net Energy for Gain (Mcal/cwt, dry matter basis)	Ratio Relative to Whole, Dry Corn (%)
Corn, dry grain, 56 lb/bu	68.2	100
Corn, dry grain, 45 lb/bu	68.2	100
Corn, dry grain, ground	68.2	100
Corn, dry grain, cracked	70.4	103
Corn, 25-30% H ₂ O, 56 lb/bu	73.6	108
Corn, 25-30% H ₂ O, 45 lb/bu	70.4	103
Ear Corn, dry, ground, 56 lb/bu	61.4	90
Ear Corn, dry, ground, 45 lb/bu	55.4	81
Ear Corn, ground, high-moisture	64.6	95
Corn grain, flaked	73.6	108
Barley grain, heavy ^b	63.6	93
Barley grain, light ^b	55.4	81
Oats, 32 lb/bu	50.4	74
Oats, 38 lb/bu	55.4	81
Wheat ^b	63.6	93
Corn Silage ^c	52.7	77
Alfalfa Haylage, early bloom ^d	37.7	55
Alfalfa Haylage, mid bloom ^d	30.9	45
Alfalfa Hay, late bloom ^d	22.3	33

^a Values taken from Nutrient Requirements of Beef Cattle, National Research Council, 1996.

^b Due to prospect of acidosis, feed no more than 30% in diet unless you are an experienced feeder of this grain.

^c Assumes silage is 50% grain on dry matter basis.

^d Energy value decreases with plant maturity.

Table 3. Example Livestock Budget for Holstein Steer 350 – 1150 lb.

(90% concentrate; 10% corn silage diet; 255 days on feed; 3.14 ADG; dry matter conversion 5.5:1)

Purchase Information	Data	Per/Head	Your Costs
Pay Weight	350 lb		_____
Purchase Cost	\$70.00/cwt	\$245.00	_____
Lot Charges			
Yardage	\$0.36/day	\$91.80	_____
Yardage includes charges for:			
Facility			
Utilities			
Equipment			
Labor			
Bedding			
Vet & Med	\$7.00	\$7.00	_____
Death Loss	2%	\$4.90	_____
Interest on Operating Capital	10%	\$26.35	_____
Feed			
Whole Shelled Corn 75bu	\$2.75/bu	\$205.90	_____
Corn Silage .5/ton	\$30/ton	\$ 16.09	_____
Supplement 215 lb.	\$300/ton	\$ 32.19	_____
Total Feed		\$254.18	_____
Total Lot Charges		\$384.24	_____
Total Expense		\$629.24	_____
Economic Analysis			
Feed Cost of Gain (COG)	\$31.74/cwt		_____
Feed & Yardage COG	\$43.20/cwt		_____
Total COG (without interest)	\$44.69/cwt		_____
Total COG (with interest)	\$47.98/cwt		_____
Break-even (Live)		\$54.68/cwt	_____
Break-even (Carcass)	Dress 60%	\$91.13/cwt	_____
Projected Income			
Gross Sales (1150 lb.)	\$67.00/cwt	\$770.50	_____
Income	\$12.32/cwt	\$141.84	_____

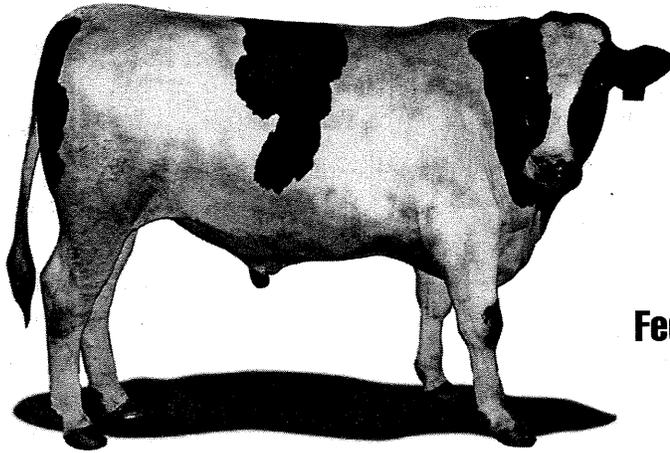
These performance values are estimates only. The actual performance of a specific group of steers may differ from these estimates.

Table 4. Example Livestock Budget for Holstein Steer 700 - 1450 lb.

(90% concentrate; 10% corn silage diet; 275 days on feed; 2.72 ADG; dry matter conversion 7.6:1)

Purchase Information	Data	Per/Head	Your Costs
Pay Weight	700 lb		
Purchase Cost	\$60.00/cwt.	\$420.00	_____
Lot Charges			
Yardage	\$0.36/day	\$99.00	_____
Yardage includes charges for:			
Facility			
Utilities			
Equipment			
Labor			
Bedding			
Vet & Med	\$6.00	\$6.00	_____
Death Loss	2%	\$8.40	_____
Interest on Operating Capital	10%	\$44.88	_____
Feed			
Whole Shelled Corn 100 bu	\$2.75/bu	\$ 271.39	_____
Forage .7/ton	\$30/ton	\$ 21.21	_____
Supplement 280 lb.	\$300/ton	\$ 42.42	_____
Total Feed		\$ 335.02	_____
Total Lot Charges		\$ 494.30	_____
Total Expense		\$ 914.30	_____
Economic Analysis			
Feed Cost of Gain (COG)	\$44.73/cwt		_____
Feed & Yardage COG	\$57.94/cwt		_____
Total COG (without interest)	\$60.00/cwt		_____
Total COG (with interest)	\$65.99/cwt		_____
Break-even (Live)		\$63.10/cwt	_____
Break-even (Carcass)	Dress 60%	\$105.16/cwt	_____
Projected Income			
Gross Sales (1450 lb.)	\$69.00/cwt	\$1000.50	_____
Income	\$5.90/cwt	\$85.56	_____

These performance values are estimates only. The actual performance of a specific group of steers may differ from these estimates.



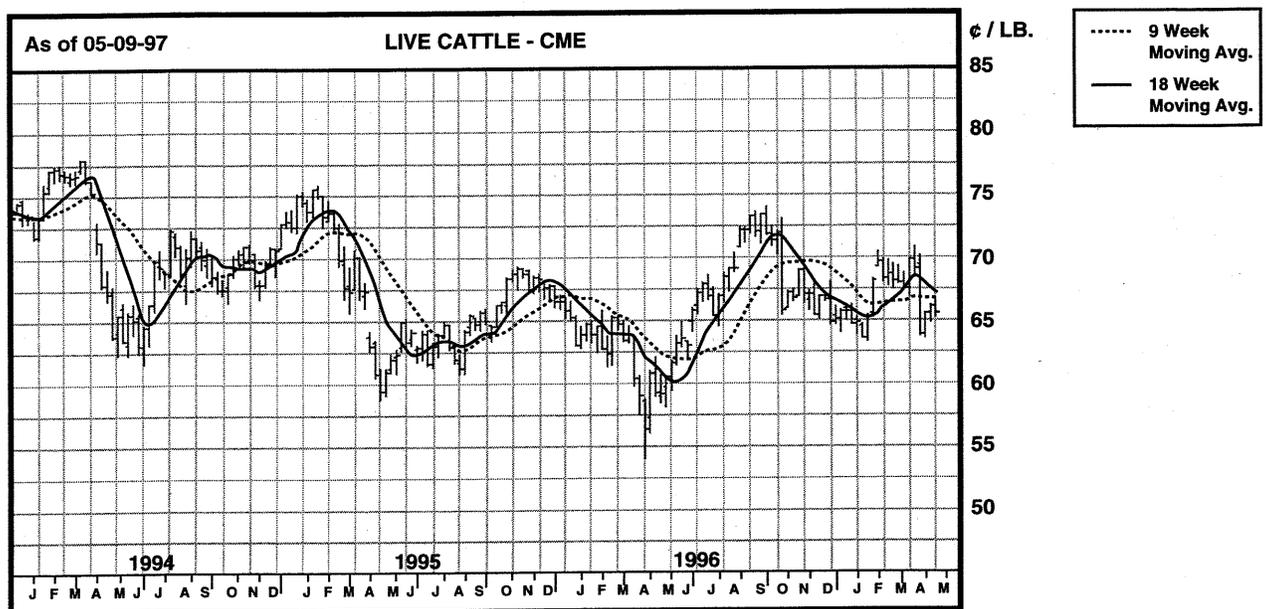
Fed Cattle Contracting

To assure itself of a supply of fed cattle, Packerland has developed a forward pricing contract. For the feeder it provides an opportunity to minimize price risk and if the market conditions are right, to lock in profits. It can be an effective marketing tool and one that allows the feeder to cover his costs with a profit assured in the future. This can be very helpful in securing financing from lending institutions.

selling price. To be a successful hedger and contractor, you need to know feeder cattle, feed, labor, housing, equipment and interest costs.

Slaughter cattle prices fluctuate every year and the variance in any one year is quite great (see chart below for live cattle prices). Compare your breakeven cost of production to the value of the futures contract for the month in which you anticipate selling cattle. Consider locking-in a futures contract price when the value of the futures contract exceeds your cost of production.

Packerland's Fed Cattle Delivery Contract is shown on the next page. It spells out the parties involved, their location, numbers of cattle, projected delivery dates, prices cattle are sold at and basis spread, any lien holders, and other contract stipulations. Thousands of cattle are delivered monthly against this very popular marketing tool.



PACKERLAND PACKING, CO., INC.
P.O. BOX 23000 • GREEN BAY, WISCONSIN 54305-3000
FED CATTLE DELIVERY CONTRACT

SELLER'S NAME: _____

ADDRESS: _____ COUNTY: _____

_____ PHONE: _____

Buyer confirms purchase from Seller today as follows:

Date: _____ Delivery month: _____ Delivery Location: Green Bay, WI ()
 Hospers, IA ()

Quantity: Holstein Steers () Quality Grade
 Holstein Heifers () USDA 70% Choice—minimum
 Balance Select

_____ Head
 No. _____ 48,000 lb. units
 No. _____ 20,000 lb. units

Delivered Price	Mercantile Live Cattle Futures
\$ _____ cwt. live wt.	Price for _____ 19 _____
\$ _____ cwt. dressed wt.	Basis Discount _____
\$ _____ % hot carcass yield	Net on Holsteins _____

DISCOUNT SCALES TO APPLY:

1. **Weight** All carcasses between 925 lbs. and 1000 lbs. shall be discounted at \$4.00 per dressed cwt. All carcasses between 1,000 lbs. and 1,100 lbs. shall be discounted at \$6.00 per dressed cwt. All carcasses over 1,100 lbs. shall be discounted \$8.00 per dressed cwt. Steer and heifer carcasses between 550 lbs. and 925 lbs shall not be discounted.
2. **Quality Grade** USDA 70% Choice balance Select. Cattle grading "Select" in excess of 30% of the contract shall be priced at the contract price minus the difference between Choice and Select on the National Provisioner. Cattle grading "Standard" shall be priced at prevailing market price on slaughter date.
3. **Carcass Damage** Carcasses damaged above a 10% allowance per unit due to yellow fat, bruises or grubs, shall be discounted at prevailing market price on slaughter date.
4. **Yield Grade** All cattle shall be 95% Yield Grade 3 or better—balance Yield Grade 4. Cattle in excess of 5% Yield Grade 4 per unit shall be discounted at prevailing cash market price on slaughter date.
5. **Carcass Yield** All cattle with hot carcasses yielding less than 60% shall reduce the applicable price specified herein accordingly. Likewise, cattle exceeding the hot carcass yield shall increase the applicable price accordingly.
6. **Other** Up to 20% liver condemnations allowable at par. Liver condemnations in excess of 20% will be discounted using liver value contribution per the U.S.D.A. byproduct value per cwt. Any cattle with branded hides will be discounted \$5 per head.
7. All cattle shall be delivered in good and merchantable condition and suitable for immediate slaughter to produce meat for human consumption. All death loss and railers shall be the responsibility of Seller. Title shall pass to Buyer after final grading.
8. Cattle shall be priced on the basis of 20,000 or 48,000 lb. units. All weight in excess of 20,000 or 48,000 lbs. shall be priced at the market price the day of slaughter and subject to the weight and grade criteria of the above paragraphs.
9. If the live weight is less than total live weight specified in this contract, and buyer's live cattle market price at time of delivery is higher than the contract price, seller shall pay buyer a price per 100 lbs. equal to the difference between those two prices, multiplied by the weight shortfall.

10. The seller understands that Packerland will hedge its price risk on the cattle purchased hereunder by selling a Futures Contract or options on the Chicago Mercantile Exchange which will involve financial obligation on Packerland's part. If Seller shall fail for any reason whatsoever to deliver to Packerland the cattle purchased as herein set out, it is agreed the Seller shall promptly pay to Packerland all money advanced on such undelivered cattle and shall further be liable to Packerland in the amount by which the current market price, at the time and place such cattle should have been delivered, exceeds the contract price for such undelivered cattle, all as liquidated damages. Seller shall further reimburse Packerland for expenses incurred, including attorney's fees, in the collection of the liquidated damages herein provided, and for its reasonable expenses in obtaining replacement livestock together with any other incidental and consequential damage incurred by Packerland.
11. Price on "basis contracts" must be established by the 10th day of the month prior to the delivery month.
12. Seller shall confer with Packerland on the readiness of the cattle for delivery during the last week of the month prior to the month of contract expiration. Cattle shall be delivered on a day designated by the buyer or on a date mutually agreed upon.
13. All costs incurred by Packerland due to delay in delivery of the cattle past the specified contract month are the responsibility of the Seller and will be deducted from the proceeds by the Buyer unless otherwise agreed to in writing.
14. All purchases are subject to the final approval of Buyer's credit department. Seller agrees to furnish and keep updated all required credit and lien information to the credit department which shall approve or reject the credit prior to the contracts being submitted.
15. Definitions - as used herein, the following terms shall have the meaning ascribed:
- a. Live weight—the weight of the live cattle purchased at point of delivery.
 - b. Hot carcass yield percent—a guaranteed carcass yield percentage as designated herein.
 - c. Dressed price—the price computed by dividing the live price per cwt. by the par dressing percentage of hot carcass weight.
 - d. Hot carcass weight—the weight of the hot carcasses after slaughter.
 - e. All Select and Choice grades are evaluated and confirmed by the USDA.
 - f. Yield grade—identifies carcasses for differences in cutability or yield of boneless, closely trimmed retail cuts from the round, loin, rib and chuck. The yield grades are numbered 1 through 4.
 - g. Carcass yield—the yield computed by dividing the hot carcass weight by the live weight.
 - h. Unit - a quantity of cattle containing 48,000 lbs live weight or 20,000 lbs.
 - i. Live cattle futures contract price—the price of the live cattle futures contract for a given month on the Chicago Mercantile Exchange (CME).

16. **Payment** Seller shall be paid within twenty-four hours of final grading. No advance payment is made.

17. **Liens** Seller warrants that (s)he has good and merchantable title in the cattle sold hereunder and that said cattle are free and clear of all liens and encumbrances of every nature except: (if none, write "none"). If any liens exist at the time of delivery, Seller authorizes Buyer to make settlement jointly with the Seller and such party or parties in whose favor the liens and encumbrances have attached. Seller must list lienholder(s) below.

NAME AND ADDRESS OF LIENHOLDER

18. **This contract contains the entire agreement between the parties and cannot be varied orally and shall be binding on the heirs, successors and assigns of the parties. Contracts must be signed and returned within ten business days after being received.**

The undersigned Seller represents and warrants to Buyer that Seller is a Merchant as such term is defined in the Uniform Commercial Code (UCC), with respect in the cattle which are the subject of this contract. **SELLER AGREES TO SELL TO BUYER AND BUYER AGREES TO PURCHASE FROM SELLER THE ABOVE DESCRIBED CATTLE IN ACCORDANCE WITH THE PRECEDING TERMS AND CONDITIONS WHICH TERMS AND CONDITIONS ARE LEGALLY BINDING ON SELLER.**
Please sign and return.

Accepted Seller By: _____ Accepted Buyer: PACKERLAND PACKING CO.
(At Address Shown Above)

By: _____

Why Have Buying Stations Had Widespread Producer Acceptance?

- They provide a continuous dependable market for fed cattle and cull cows.
- They use competitive market prices. Each day of operation before the market opens, a price for each category of cattle is posted for all to see. You can call ahead to find out what your cattle will bring.
- They provide a market where everyone's treated alike, whether you have one head

or 100 head. The price quoted "in the meat" on a dressed carcass basis is the same to everyone on the same quality of livestock. Packerland plays no favorites. It aims to be fair and equitable.

- They provide reduced transportation costs. Trucking costs are a major expense in livestock procurement. By pooling cattle at the country assembly points, Packerland can reduce its trucking costs and pay the producer more for livestock.

Packerland's Country Buying Station Markets

Packerland participates daily in the cash market. Producers who are not interested in contracting may consider selling cattle at one of the following country buying stations.

Arcadia, WI

Vicks Livestock Market
Every Tuesday 9 a.m. to 3 p.m.
608-323-7795

Blue River, WI

Blue River Stockyards
Every Mon. & Thurs. 8 a.m. to 2 p.m.
608-537-2765

Burlington, WI

Mon., Tues., & Thurs.
608-994-2721

Chippewa Falls, WI

Former Packerland Plant
Every Mon. & Wed. 8 a.m. to 2 p.m.
715-723-9381

Cuba City, WI

Cuba City Livestock
Every Mon., Tues., & Thurs.
8 a.m. to 2 p.m.
608-744-2444

Darlington, WI

Avon Stockyards
Every Mon. & Wed. 8 a.m. to Noon
608-776-2164

Dodgeville, WI

608-935-5204

Durand, WI

Tuesday
715-672-8017

Hillsboro, WI

Hofmeister Stockyards
Monday
608-489-2422

Livingston, WI

Yelinek Stockyards
Every Mon., Tues., Wed. & Thurs.
8 a.m. to 2 p.m.
608-943-6402

Monroe, WI

Dairyland Livestock Market
Every Mon. & Wed.
8 a.m. to Noon
608-328-8398

Delhi, Iowa

Monday
319-922-3020

Osseon, Iowa

Don Witt
319-532-9260

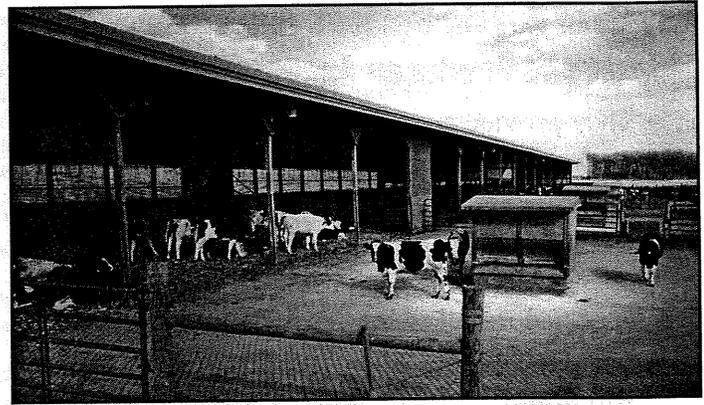
Farmers Union - Jointly sponsored collection points

Lomira, WI (Campbellsport)

Every Tuesday
8 a.m. to 1 p.m.
414-269-7066

Spencer, WI (Marshfield)

Every Tues. & Wed.
7:30 a.m. To 3 p.m.
715-659-4455
715-652-2925

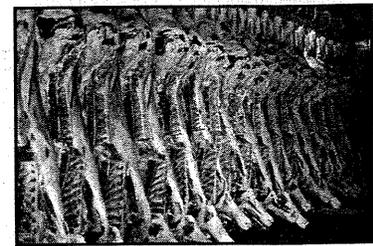


For more information, call Packerland Cattle Procurement at 800-753-7724.

Beef Quality and Yield Grades

Cattle feeders should know the basic practices which are used to grade carcasses because the grades assigned to a carcass determine the financial value of the carcass. Two kinds of grades are assigned by a USDA beef grader to carcasses—a quality grade and a yield grade. The quality grade is intended to categorize carcasses according to the eating satisfaction of the retail products derived from the carcass. The yield grade is used to

classify carcasses according to the proportion of the carcass weight which results in marketable retail products. As you can see, these two kinds of grades have distinctly different purposes. Quality and yield grades are assigned by a USDA grader after a carcass side has been separated



Relationship Between Marbling, Maturity, and Carcass Quality Grade*

Degrees of Marbling	Maturity** (Approximate Age, months)					Degrees of Marbling
	A*** (9-24)	B (24-36)	C (36-48)	D (48-60)	E (> 60)	
Slightly Abundant	Prime					Slightly Abundant
Moderate			Commercial			Moderate
Modest	Choice					Modest
Small						Small
Slight	Select			Utility		Slight
Traces					Cutter	Traces
Practically Devoid	Standard					Practically Devoid

* Assumes that firmness of lean is comparably developed with the degree of marbling and that the carcass is not a "dark cutter."

** Maturity increases from left to right (A through E). Approximate ages are based on Shackelford et al. 1995. J. Anim. Sci. 73:3304.

*** The A maturity portion of the Figure is the only portion applicable to bullock carcasses.

between the 12th and 13th ribs, into the fore-quarter and hindquarter. Packerland pays the USDA Meat Grading Service to assign quality and yield grades only to young cattle; grading of cow carcasses is done by Packerland personnel.

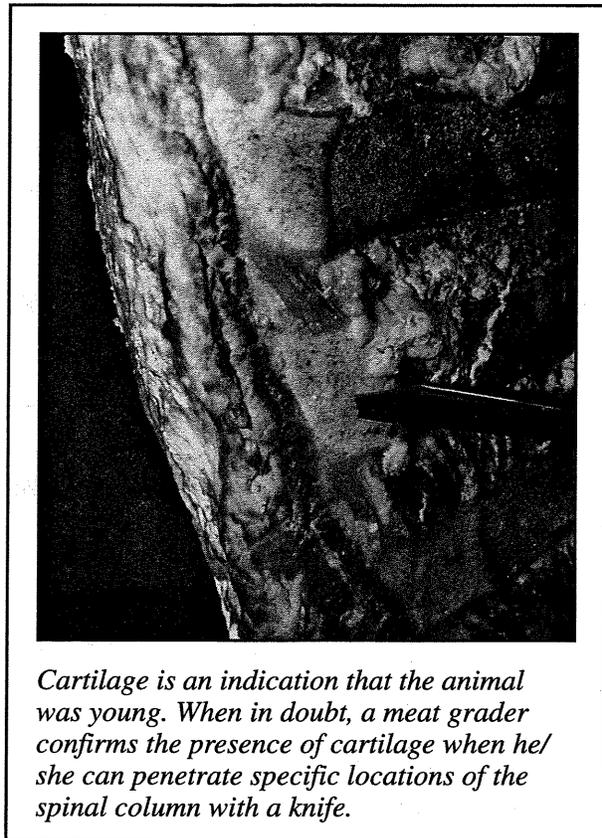
The USDA beef quality grading standards (see figure on previous page) are mainly based on the factors of marbling and maturity. Marbling is intramuscular fat seen as flecks of white within the muscle of the ribeye. More marbling means a higher quality grade and the minimum degrees of marbling needed for the Prime, Choice and Select grades are shown at the bottom of this page.

Alternative relationship between USDA Carcass Maturity Score and chronological age.

USDA Maturity Score	Chronological Age (mo)	
	Current Standards	Shackelford et al. Alternative
A	9-30	9-24
B	30-48	24-36
C	48-72	36-48
D	72-96	48-60
E	>96	>60

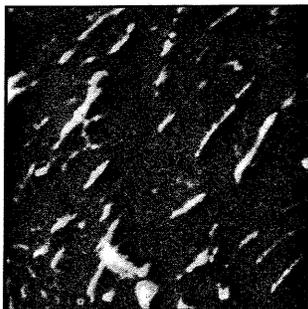
Shackelford, S.D., M. Koohmaraie and T.L. Wheeler. 1995 Effects of slaughter age on meat tenderness and USDA carcass maturity scores of beef females. J. Anim. Sci. 73:3304-3309.

Graders assess carcass maturity by looking at specific locations on the spinal column and by glancing at the shape and color of the rib bones. As an animal gets older, cartilage hardens into bone. The photo below shows white, cartilage “buttons” on the tips of three vertebrae. The softness of cartilage is evidenced by the ability to penetrate it with a knife.



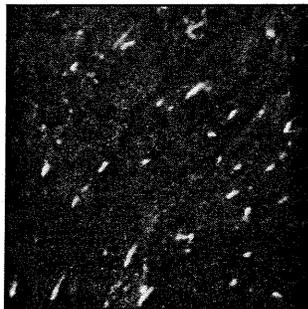
Degrees of Marbling

Slightly abundant



Minimum marbling needed to qualify for the Prime grade

Small



Minimum marbling needed to qualify for the Choice grade

Slight



Minimum marbling needed to qualify for the Select grade

The USDA beef yield grade is estimated for each carcass on the basis of the following four factors: ribeye area, fat thickness over the ribeye, hot carcass weight, and percentage of kidney, pelvic and heart fat. Meat scientists determined thirty years ago that this combination of measurements could be used reliably to predict the percentage of retail cuts which a carcass yields. Yield grades range from 1 to 5 with 1 signifying the highest yielding carcasses and 5 representing the lowest yielding carcasses. At this time, the beef industry discounts for carcasses that are yield grade 4 or 5. Fat thickness over the ribeye typically has the major influence on yield grade. Fortu-

nately, the leanness of the Holstein breed means that these cattle are very seldom discounted due to an undesirable yield grade.

The transformation of live animal to retail product is summarized in the figure below. Dressing percentage is the carcass weight divided by live weight multiplied by 100. Factors such as weighing conditions, gut fill, cleanness of the hide, fatness, and muscling affect dressing percentage, which for Holstein steers is typically 57-60%. The factors described above for yield grading affect the retail product yield from the carcass. Since Holstein steers are typically yield grade 2 or 3, retail product yield is 42 to 48% of live weight.

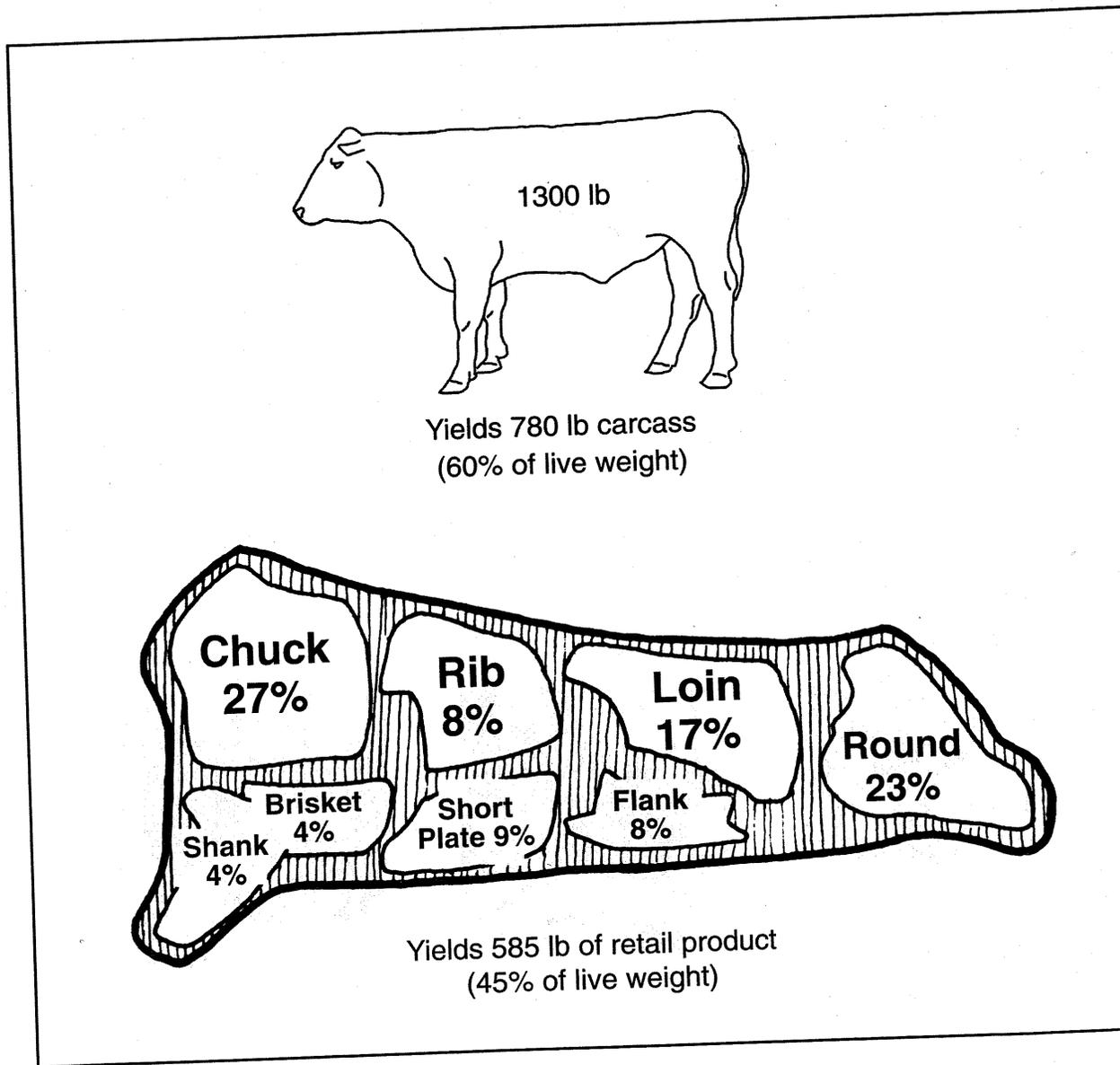


Table 5. Packerland Abbreviations Used To Describe Carcasses From Young Cattle

Breed ^a	Abbr.	USDA Quality Grade ^{b,c,d}		Gender ^b	Abbr.	USDA Yield Grade ^b		Carcass Weight, lbs	
		Grade	Abbr.			Grade	Abbr.	Abbr.	Abbr.
Holstein	HOL	Prime	PR	Steer	STR	1.0-1.9	1	500-599	5
Beef breed	(none)	Choice	CH	Heifer	HFR	2.0-2.9	2	600-699	6
		Select	SEL	Stag	STAG	3.0-3.9	3	700-799	7
		Standard	STA	Bull	BULL	4.0-4.9	4	800-899	8
		Commercial	COMM			≥ 5.0	5	≥ 900	9

^a A Packerland grader decides whether the carcass will be merchandised as a Holstein or beef breed carcass based on a visual evaluation of muscle to bone ratio. Carcasses with low muscle to bone ratios are designated as Holstein whereas carcasses with high muscle to bone ratios are designated as “native” beef carcasses.

^b A USDA beef grader decides which grade is appropriate for a carcass.

^c When the muscle tissue within the ribeye fails to bloom into a desirable, bright red color, and instead remains dark, purplish red, the carcass is referred to as a “dark cutter.” A USDA beef grader downgrades a dark cutter carcass.

^d When a steer, heifer or heiferette becomes old enough so that the cartilage in its spinal column hardens into bone, the USDA beef grader downgrades the carcass, and Packerland reports it as a No Roll on a female or Commercial on a steer.

Packerland Grading Reports

A wide variety of cattle are slaughtered at Packerland. When we buy cattle on a carcass quality and yield basis, we return to the seller a report which describes which grades their cattle received. Keep Tables 5 and 6 in a handy location so that you can translate the codes shown on grading reports you receive. If you have questions, give us a call. We want you to understand these reports because this information can possibly help you increase the economic value of future cattle you will sell. The future is important to us and we want you to be a part of our future.

Closing Comments

Information is important to the success of any business. We prepared this brochure so that you could have more information about the Holstein steer industry. If this brochure increases your understanding of this viable segment of the overall beef industry, or generates questions about how you produce or market your Holstein steers, then we have been successful.

Table 6. Packerland Abbreviations Used To Describe Carcasses From Old Cattle

Packerland Grade ^a	Abbr.
No Roll	NR
Breaking Utility	BRU
Boning Utility	BU
Canner/Cutter	CC

^a A Packerland grader evaluates the carcass for maturity, amount and color of the fat and degree of muscling and then assigns a Packerland “house” grade which designates how the carcass will be merchandised.

For additional copies of this brochure, contact Packerland Cattle Procurement at the following address:



Packerland Packing Co., Inc.
P.O. Box 23000
Green Bay, WI 54305-3000
920-468-4000
800-753-7724