

Appendix

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- III. Feeding Your 4-H Steer (optional)
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Appendix I

FRAME SCORE

This is the measurement of the height of the animal being fed, and will determine the number of days the animal needs to be fed to achieve the desired grade (finish). Frame score is a score based on an actual measurement of hip height. This score is related to harvest weights at which cattle should attain a given quality grade or attain a given amount of fat thickness.

Once the 4-H Member has selected the animal, then the frame score should be estimated to determine how best to feed the animal.

Example, A Steer, born on March 15, 2002, with a hip height of 46.6 inches on October 15, 2002.

- H (Height) = 46.6 inches
- Age = 214 days (7 months)
- Frame Score = 6 (~ 6.25) from the chart.

Frame Score is closely related to Maturity Type.

- Small framed animal – Early Maturing (FS 1-2)
- Medium framed animal = Moderate Maturing (FS 3-5)
- Large framed animal = Late Maturing (FS 6-8)
- Extreme framed animal = Very Late Maturing (FS 9-11)

Frame (1-2)

- Generally very short.
- Lack rapid growth potential.
- Low carcass weight.
- 330-396 lbs, at 9-12 mm fat.

Frame (3-5)

- Average growth rate potential.
- Good muscle development.
- Generally reach market at 440-770 lbs, at 9-12 mm of fat.

Frame (6-8)

- High growth potential.
- Some cattle will lack muscle expression.
- Market carcass weights range from 770-990 lbs, at 9-12 mm fat.
- These tend to be cattle that are fed for a long time in the feedlot.

Steers Age (months)	Frame Score								
	1	2	3	4	5	6	7	8	9
5	33.5	35.5	37.5	39.5	41.6	43.6	45.6	47.7	49.7
6	34.8	36.8	38.8	40.8	42.9	44.9	46.9	48.9	51
7	36	38	40	42.1	44.1	46.1	48.1	50.1	52.2
8	37.2	39.2	41.2	43.2	45.2	47.2	49.3	51.3	53.3
9	38.2	40.2	42.3	44.3	46.3	48.3	50.3	52.3	54.3
10	39.2	41.2	43.3	45.3	47.3	49.3	51.3	53.3	55.3
11	40.2	42.2	44.2	46.2	48.2	50.2	52.2	54.2	56.2
12	41	43	45	47	49	51	53	55	57
13	41.8	43.8	45.8	47.8	49.8	51.8	53.8	55.8	57.7
14	42.5	44.5	46.5	48.5	50.4	52.4	54.4	56.4	58.4
15	43.1	45.1	47.1	49.1	51.1	53	55	57	59
16	43.6	45.6	47.6	49.6	51.6	53.6	55.6	57.5	59.5
17	44.1	46.1	48.1	50.1	52	54	56	58	60
18	44.5	46.5	48.5	50.5	52.4	54.4	58.4	58.4	60.3

Hip Height (Inches)

Extreme Frame (9-11)

- Huge cattle, extremely high growth potential.
- Very late maturing.
- Generally very lean.
- May not become fat enough for quality market.
- Carcasses will >990 lbs, if desired fat can be achieved.
- At early stages of physical maturity, growth rates are similar.
- Large frame cattle continue high growth rates for longer time and mature at a slightly older age and a heavier weight.
- The higher the frame score, the longer to finish the animal.
- From the earlier example of a 7 month calf with a H (height) of 46.6 inches, we determine the FS was 6.25.
- This calf would finish with an estimated weight of about 1275 pounds.
- If the calf weighed 675 pounds when weigh in occurred and there were 5.5 months to feed the calf, then the ADG would be calculated as follows:
 - $1275 - 675 = 600$ pounds of gain
 - $5.5 \text{ months} \times 30 \text{ days/month} = 165$ days
 - $600 \text{ pounds} / 165 \text{ days} = 3.64$ pounds per day of gain

Estimated carcass slaughter weight

- The frame score will aid in determining the final carcass weight (this can be estimated from the following table). This will estimate the final finished weight of the animal.
- Knowing the starting weight, final weight and number of feeding days, the required Average Daily Gain (ADG) can be determined.

Frame Score	Estimated in pounds
2	850
3	950
4	1050
5	1150
6	1250
7	1350
8	1450
9	1550

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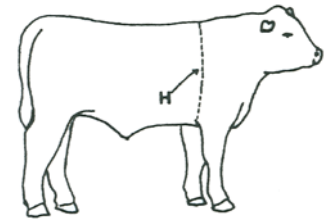
Appendix II

TAPE MEASURING

One method which you can use to estimate the weight of your animal is the tape measure. Any tape measure may be used, but there are specially marked tape measures which you can purchase at most livestock and farm supply outlets.

Remember that it only gives you an estimate of the animal's weight. Variations from the actual weight may be due to the length of the body and, or the legs.

Measure the circumference of the heart girth as indicated in the diagram below. Stand the animal with the head in the normal position and the four legs set squarely under the body. Pass the tape tightly around the body just back of the shoulders at the smallest circumference. "H" is the heart girth.

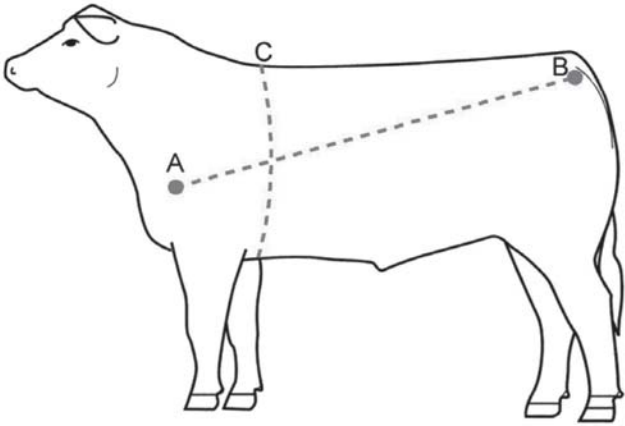


Imperial Measurements

Heart Girth (in)	Heart Weight (lb)	Heart Girth (in)	Heart Weight (lb)	Heart Girth (in)	Heart Weight (lb)	Heart Girth (in)	Heart Weight (lb)	Heart Girth (in)	Heart Weight (lb)
30	91	42	236	54	484	66	834	78	1,288
30.5	95	42.5	244	54.5	496	66.5	850	78.5	1,310
31	99	43	253	55	509	67	869	79	1,332
31.5	103	43.5	262	55.5	522	67.5	886	79.5	1,353
32	108	44	271	56	535	68	903	80	1,374
32.5	113	44.5	279	56.5	548	68.5	921	80.5	1,396
33	118	45	288	57	562	69	939	81	1,418
33.5	123	45.5	297	57.5	575	69.5	957	81.5	1,440
34	128	46	307	58	589	70	975	82	1,463
34.5	133	46.5	317	58.5	603	70.5	993	82.5	1,485
35	139	47	327	59	618	71	1,011	83	1,508
35.5	145	47.5	337	59.5	632	71.5	1,030	83.5	1,531
36	151	48	347	60	647	72	1,049	84	1,555
36.5	157	48.5	358	60.5	661	72.5	1,068	84.5	1,578
37	163	49	369	61	676	73	1,087	85	1,601
37.5	169	49.5	379	61.5	691	73.5	1,107	85.5	1,624
38	176	50	390	62	707	74	1,127	86	1,648
38.5	183	50.5	401	62.5	722	74.5	1,147	86.5	1,672
39	190	51	412	63	737	75	1,167	87	1,697
39.5	197	51.5	424	63.5	753	75.5	1,186	87.5	1,721
40	205	52	436	64	770	76	1,205	88	1,745
40.5	212	52.5	448	64.5	786	76.5	1,226	88.5	1,770
41	220	53	460	65	802	77	1,247	89	1,796
41.5	228	53.5	472	65.5	818	77.5	1,267	89.5	1,821

Source: *Level One 4-H Beef Project - Welcome to the 4-H Beef Project*

Here's another way to estimate the weight of your steer.



Beef Cattle

1. Measure the length of body, from the point-of-shoulder (A) to the point-of-rump or pin bone (B).
2. Measure the circumference or heart girth (C). Measure from a point slightly behind the shoulder blade, down the fore-ribs and under the body behind the elbow all the way around.

After these measurements are made in inches – use the following formula.

3. $(\text{Heart girth} \times \text{heart girth} \times \text{body length}) \div 300 = \text{weight in pounds.}$

Example:

Heart girth (76") X heart girth (76") X body length (66")
divided by 300 = 1,270 pounds.

$$76 \times 76 = 5,776$$

$$5,776 \times 66 = 381,216$$

$$381,216 \text{ divided by } 300 = 1,270 \text{ pounds}$$

Tips for increasing Accuracy and Safety

- Make certain the animal is standing squarely on level ground.
- Have someone stand on the opposite side to help with the girth measurement. Make sure the tape lays flat and is not twisted.
- Pull the tape snug.
- When using a weigh tape, position the tape according to the manufacturer's directions.
- A cloth measuring tape is preferred.
- Be calm, don't rush in. Make sure the animal is comfortable with the measuring tape.
- When monitoring an animal's weight over time, it is best to have the same person using the same method.
- By following a set procedure you will be able to monitor change that can be used as an indicator of health.
- The weight estimation formulas and weigh tapes may be used effectively for many animals, but are not highly accurate for pregnant animals or those with extreme conformational irregularities.
- Keep a record that you can refer back to over time.

Appendix III – Optional

FEEDING YOUR 4-H STEER

STARTING PHASE – this phase will last 2-3 weeks, depending on your calf.

When you first start your steer on feed you will feed him 1.5 to 2 lb of grain in the morning and again in the evening every day, plus all of the good quality hay that he will eat. Once your calf eats all the grain provided, you can slowly increase the amount by 1 pound every second day, until he is eating 1% of his body weight in grain, plus all of the hay he can eat. To calculate how much grain to feed him, multiply his weight by 1 and divide by 100.

For example, Steer “A” weighs 600 lbs: $\frac{600 \times 1}{100} = 6$ lbs of grain

So, you would feed Steer “A”, 3 lbs of grain in the morning and 3 lbs of grain in the evening plus all the hay he can eat. It can take 1 week to get your steer safely eating 1% of his body weight in grain.

Now, for the calf:

_____ x $\frac{1}{100}$ = _____ lbs of grain per day
(Your steer’s weight at weigh-in)

Your calf will eat a total of 2.5% of his body weight in dry feed everyday.

For example, a 600 lb steer would eat $\frac{600 \times 2.5}{100} = 15$ lbs of dry feed everyday.

This 600 lb steer would eat 6 lbs of grain and $15 - 6 = 9$ lbs of hay everyday.

Keep the amount of grain constant and the hay free choice. Make sure the hay feeder is not empty between feedings.

Now, for your calf:

_____ x $\frac{2.5}{100}$ = _____ lbs of feed per day
(Your steer’s weight at weigh-in)

Total pounds of feed he eats everyday

Minus

The pounds of grain he eats everyday

Equals

The pounds of hay he eats everyday.

GROWING PHASE

Now that you have successfully started your calf on grain, he is in the Growing Phase. During this phase you want your calf to eat approximately 1.5% of his body weight in grain.

To calculate how much grain to feed him, you first have to estimate his weight. (Let's assume that he has gained 1.5 lbs per day since weigh-in:)

	+		=	
Weight from weigh-in		(# days since weigh-in x 1.5 lbs/day)		Estimated Weight

Now let's calculate how much grain your calf should be eating:

	x $\frac{1.5}{100}$ =		lbs of grain per day*.
His Estimated Weight			

* Divide this amount by 2 and that is the amount you will feed morning and night.

Every 2 days you can increase the amount of grain your calf is getting by 1 lb until he is eating the amount you calculated above. Start mixing in ¼ cup/head/day limestone* with each feeding so he is getting the right amount of calcium to balance with the phosphorus.

Your steer will eat a total of 2.5% of his body weight in dry feed every day.

	x $\frac{2.5}{100}$ =		lbs of dry feed per day.
His Estimated Weight			

Your animal should be gaining 2.5 pounds per day.

Total pounds of feed he eats everyday	
<i>Minus</i>	
The pounds of grain he eats everyday	
<i>Equals</i>	
The pounds of hay he eats everyday.	

*Limestone is needed when higher amounts of grain – more than 10 pounds per day is fed to the steer. At this point, include ¼ cup of limestone into the ration per day.

FINISHING PHASE

This phase begins about 3½ months before Achievement Day. If your Achievement Day is June 1, then the finishing phase will begin mid February. During this phase you want your calf to gain 3 to 3½ lbs/day so you need to increase the amount of grain in the ration to about 2% of his body weight.

You will have to increase the grain level slowly about 1 lb every second day. It will take about 15 days to get him up to the required amount of grain. And don't forget the limestone (½ cup per day).

$$\boxed{} \times \frac{2.0}{100} = \boxed{} \text{ lbs of grain per day}^*$$

His Estimated Weight

* Divide this amount by 2 and that is the amount you will feed him morning and night.

The remainder of your steer's ration will be hay.
Your steer will eat a total of 2.5% of his body weight in dry feed every day.

$$\boxed{} \times \frac{2.5}{100} = \boxed{} \text{ lbs of dry feed per day.}$$

His Estimated Weight

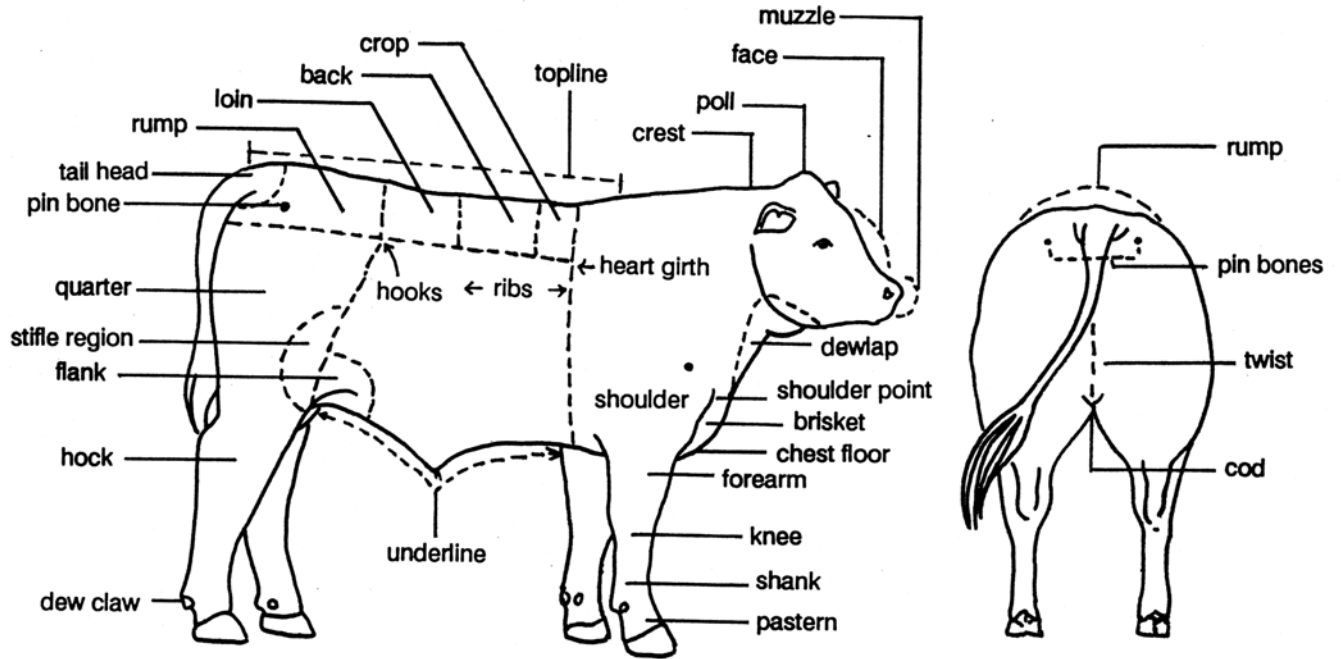
Total pounds of feed he eats everyday	<input style="width: 100%;" type="text"/>
<i>Minus</i>	
The pounds of grain he eats everyday	<input style="width: 100%;" type="text"/>
<i>Equals</i>	<hr style="width: 100%;"/>
The pounds of hay he eats everyday**.	<input style="width: 100%;" type="text"/>

** Use this information to fill in the Feed Record pages.

If the steer is receiving silage, and not hay from the calculations; 1 pound of hay is replaced by 2.5 pounds of silage. This will provide the equivalent amount of dry feed.

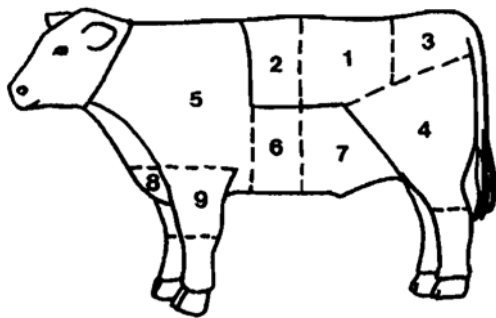
Appendix IV

PARTS OF THE BEEF ANIMAL



Appendix V

WHOLESALE CUTS OF A BEEF CARCASS



Wholesale cuts of a beef carcass

High Priced

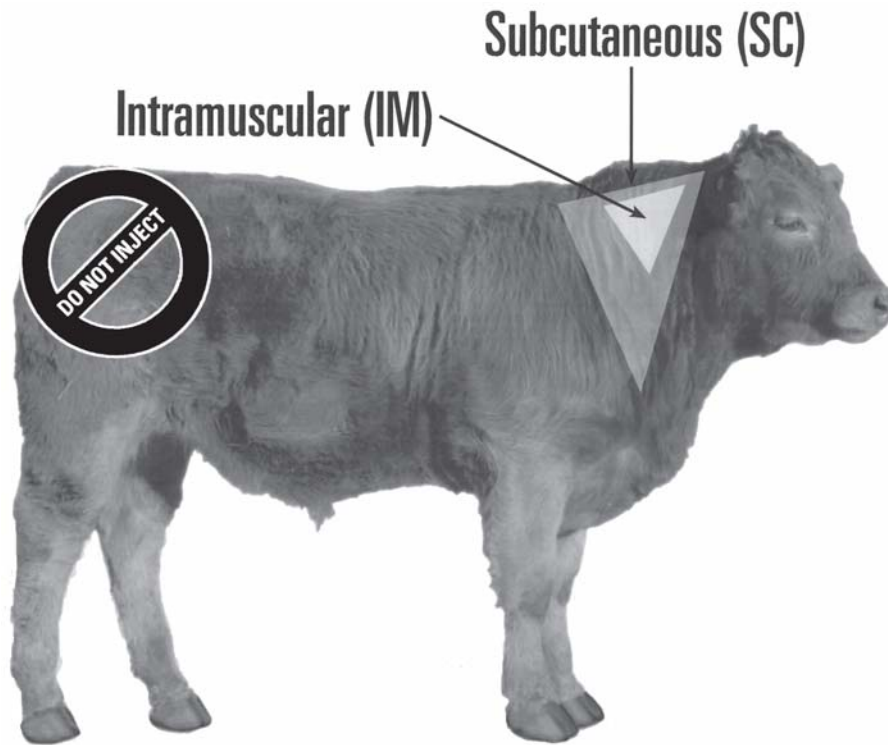
- 1. Loin 2. Rib 3. Rump 4. Round

Low Priced

- 5. Chuck 6. Plate 7. Flank 8. Brisket
- 9. Shank

Appendix VI

SITE INJECTION



- *Do not inject* into the round or the loin area.
- Give *Subcutaneous (Sub-Q)* injections under the loose skin of the neck, using the tented method.
- Give *Intramuscular (IM)* injections in the neck.
- If the label indicates a choice, use Sub-Q (under the skin) injections.

Appendix VII

SHOWMANSHIP

MOVING YOUR ANIMAL IN THE RING

When entering the ring, move clockwise, keeping an eye on the judge or ringperson for any directions. If you are the first one into the ring, move smoothly and quickly to allow room for others to follow.

Always stay far enough away from the outside of the ring, and from the animals in front and behind you, so the judge can comfortably move around your animal.

If the animal in front of you will not move, tap it gently with your show stick or hand. Do not pass another showperson unless the judge or ringperson instructs you to.

CHANGING POSITION IN LINE

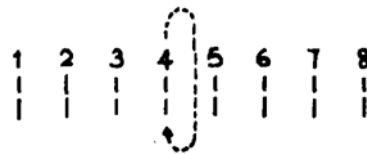
When you pull into line as requested, leave about one metre of room between you and the next animal. When lining up head to toe, leave approximately one metre between your animal and the one in front of you. Avoid moving in and out of the line unless it is necessary.

Always allow your animal enough room to make a comfortable turn. Turn in a clockwise direction, moving around your animal. Avoid making sharp or awkward turns.

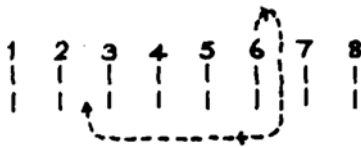
Moving from position 3 to 6:



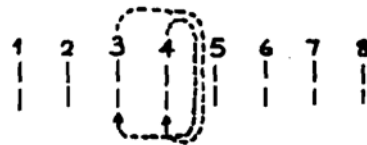
When you must set up again in the same position:



Moving from position 6 to 3



Switching positions 3 and 4 (4 would move out first)



HOW TO COMPLETE THE ALBERTA LIVESTOCK MANIFEST

Livestock Identification and Commerce Act (LICA) Came into effect January 1, 2009

Part A - Purpose of Manifest		LIS Use Only				
<input type="checkbox"/> Transport Only	<input checked="" type="checkbox"/> Transport for Sale by Owner	<input type="checkbox"/> Dealer on Behalf of Owner	<input type="checkbox"/> Inspection Only			
Check if Livestock Security Interest Declaration is by Separate Document						
Part B - Transportation and Sale Details		Date	2011/03/01			
Owner or Dealer Name	(Print Clearly & Press Hard)		Phone #			
John Smith			403-222-3333			
Owner or Dealer Address	Box 123, Angleton, Alberta, T1A 1A1					
On Account Of	TIA IAI					
Pay To (if other than to Owner or Dealer named above)						
(permitted only if there is no livestock security interest)						
Transport From Address	Address					
Box 123, Angleton, AB T1A 1A1	AA031RW34					
Transport To Name	Premises ID					
Alberta Auction Market	AA031RW34					
Transport To Address	RRI Swainsboro, AB T1S 1S1					
Part B - Description of Livestock						
Number	Colour	Kind	Brand(s) / Identifier(s)	Loc.	AV	Other Information
4	RWF	Cow	A-A	RR	N	
10	MXD	Calves	N/B		Y	
					Y/N	
					Y/N	
					Y/N	
					Y/N	
					Y/N	
Total						
14						
Part C - Parts A and B Certification						
I CERTIFY THAT PARTS "A" AND "B" ARE TRUE						
X John Smith, Owner or (if Permitted) Owner's Agent						
Part D - Inspector						
Agj Total	Inspector Signature	Inspector #	Client #			
Inspection Site #	# NOT eligible for Livestock Assurance Fund	# Eligible for Check-Off	Livestock Permit #			
Part E - Transporter						
Transporter's Name (Print)						
Aqua Trucking Company						
Transporter's Signature	Phone #	Trailer or Administrative License #	Trucking Charges			
Bob Doe	(403) 233-3919	AAA-123	\$400.00			
Part F - Livestock Security Interest Declaration						
I certify that the holder of any Livestock Security Interest in the Livestock						
Alberta Auction Market of the Livestock or if Name Indicate "NONE"						
123-4 Street SE, Calgary, Alberta T2T 3T3 county interest named above						
I CERTIFY THAT THIS DECLARATION IS TRUE			Date			
X John Smith, Owner			2011/03/01			
Part G - Destination						
Date and Time Received	Count	Placed in Pen #	Premises ID			
2011/03/01 11:00 AM	14	123	AA11AYQT			
Received and Counted By: (Print Name) / Signature SA Taylor						

- Part A - Purpose of Manifest**
 - Livestock Manifests can be used for transport only, transport for sale (by owner or dealer) or inspection only. One of the boxes on the first row of Part A must be checked off.
 - If a separate livestock security interest declaration is being provided, check off the box on the second row of Part A.
- Part B - Transportation and Sale Details**
 - Livestock can only be transported in the name of the owner or a livestock dealer acting on behalf of the owner.
 - Feeder Association livestock are to be transported in the name of the Feeder Association on account of the member.
 - Parts A and B of the Livestock Manifest may be completed by the owner or the owner's agent.
 - The relevant Alberta Agriculture-issued Premises Identification (PID) # needs to be entered on the Livestock Manifest.
- Part B - Description of Livestock**
 - The livestock must be described in Part B by entering the number, colour, kind (see back of manifest book), brands/identifier(s), and the location of the brands.
 - The column "AV" is to indicate whether the cattle being transported or sold are age-verified, "Y" for yes, "N" for no.
- Part C - Parts A and B Certification**
 - Part C must be signed by the owner if the sale proceeds are to be paid to a person other than the owner or a livestock dealer acting on behalf of the owner. If the sale proceeds are being paid to the owner, Part C can be signed by the owner's agent.
 - The Feeder Association member is an owner for the purpose of signing Part C of the Livestock Manifest.
 - Parts A, B and C must be completed before the livestock is transported.
- Part D - Inspector**
 - This Part is completed by the Livestock Inspector when cattle and horses are inspected as required by LICA.



Copies of the Livestock Manifest have to be retained by the owner of the livestock, the transporter dealer, the transporter and the destination for 10 years.

Part E - Transporter

- The person transporting the livestock must complete Part E and provide the "Head Office", "Livestock Inspector", and "Destination" copies of the Livestock Manifest to the person receiving the livestock at the destination and retain the "Transporter" copy.

Part F - Livestock Security Interest Declaration

- When livestock is transported for sale, Part F must be completed, signed and dated by the owner of the livestock unless the owner provides the declaration by a separate document.
- If the livestock is transported for sale by a livestock dealer on behalf of the owner, Part F does not need to be completed as the owner is required to provide the declaration to the livestock dealer.
- If there is no livestock security interest in the livestock or the Dam of the livestock being sold, the word "None" must be written in the first row of Part F.
- For Feeder Association livestock, the name of the Feeder Association is declared as the holder of the livestock security interest.

Part G - Destination

- The person receiving the livestock must complete Part G of the Livestock Manifest.
- If the livestock are to be inspected, the "Head Office", "Livestock Inspector" and "Destination" copies of the Livestock Manifest are to be provided to the livestock inspector.
- The relevant ARD-issued PID# needs to be entered on the Livestock Manifest.

For more information:


LIVESTOCK IDENTIFICATION SERVICES LTD.
 403-509-2088
 866-509-2088
www.lis-alberta.com

Ag Info Centre Toll-free at 310-FARM
www.agric.gov.ab.ca

Government of Alberta 
 Agriculture and Rural Development A national provincial innovation initiative

Version 2.0

SUGGESTED MARKING GUIDE**4-H MEMBER'S NAME:** _____**JUNIOR / INTERMEDIATE / SENIOR****CLUB:** _____**PROJECT: Market Beef****COMPLETENESS (excluding accuracy pages):**

All information should be filled in or N/A indicated	
About Me page / My Club page (4 points each page)	/ 8
Record of Project's Progress / Record of Club's Activities (4 points each page)	/ 8
Story of Your 4-H Year (4 pts) / Creed (1 pt) / Show Record (1 pt)	/ 6
4-H speech / presentation summary and judging sheets should be included	/ 4
4-H agendas and 4-H certificate (or copy of) should be included	/ 4
TOTAL	/ 30

ACCURACY

All records and calculations should be complete.	
Subtract 0.5 marks for each first time error (not accumulative)	
My Market Beef Page / Rate of Gain Page (4 points each page)	/ 8
Health Page / Financial Summary Page (4 points each page)	/ 8
Equipment Inventory Page (2 pts) / Other Costs (1 pt) / Other Project Related Cost (1 pt)	/ 4
Monthly Feed Charts and Total Cost of Feed (to a maximum of 10 pts)	/ 10
TOTAL	/ 30

NEATNESS:

Neatness is more than penmanship. It also includes spelling, punctuation, spacing (writing/numerical), and consistency (on-line/color of pen, writing/printing)
Corrections should be minimal and neat.

TOTAL / 15**PERSONALITY:**

Organization and presentation of material	/ 4
Originality and creativity	/ 4
Quality photos and pictures, titled and dated (includes project photos)	/ 6
Clipping Pages include newspaper / magazine articles about 4-H (source/date)	/ 6
TOTAL	/ 20

ATTENTION TO DETAIL:

Work is informative and highly detailed. This mark recognizes the members that have contributed extra to their project book.

TOTAL / 5**TOTAL POINTS / 100****JUDGE'S COMMENTS:**