

Central Washington Animal Agriculture Team



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Monitoring Your Steer's Progress

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Raising quality livestock for junior fairs and shows requires a combination of a good feeding program, a good animal health program and good overall management. These programs should not be treated as separate subjects, particularly when feeding market steers. When you have a market project animal, you must also remember you are raising a food animal and your goals should include producing a safe, wholesome and high quality product for consumers.

The first step in producing a quality end product is the selection of a healthy feeder steer with plenty of growth potential. Selecting a steer in the right weight range for your market steer project is critical. However, you must remember show steers are being fed for a particular date, rather than weight and finish (like in the beef industry). It is difficult even for experienced producers to determine the exact date a steer will be ready to go to market. Therefore, it is necessary to monitor the steer's weight and back fat, adjusting diet and exercise accordingly. If the steer is not in the right weight range, often it is either "held back" or "pushed" to meet the weight limits of the show or fair. This often leads to questionable practices that are not in the best interest of the steer and reflect poorly on the image of the youth projects and the beef industry. Humane care is essential in providing a quality, wholesome product for the consumer. Therefore, when selecting your steer, check with the beef producer to see if a scale is available to help take the guesswork out of selecting a steer of appropriate weight.

Depending on breed and frame size of the steer, most animals will achieve the desired level of back fat or finish (between 0.35 and 0.45 inches) at a live weight between 1,100 to 1,350 pounds. The USDA yield grade of a beef carcass is defined as the percent of lean red meat from the round, loin, rib and chuck and is designated by a grade 1.0 to 5.9. USDA yield grade 1 represents lean, muscular animals and 5 represents extremely fat, wasty animals. Market steers are typically considered correctly finished when they achieve a yield grade in the high "ones" or "twos".

How much your steer should weigh at the time of selection is determined by knowing how much it should weigh at show time, estimating how much it will gain, and then doing a simple calculation. One of the most difficult things in the selection process is to predict how fast your steer will gain because of the many variables that influence rate of gain. An average of 2 to 3 pounds per day should be expected for healthy, growthy steers on a finishing ration. However, some steers may gain in excess of 4 pounds a day. A fast growing show steer should average at least 2.5 pounds of gain per day. Steers will often grow at a slightly slower rate of gain during the summer because they tend to eat less during extremely hot weather. Also, many of you will be exercising and working with your steers to prepare them for fitting and showing which requires energy and decreases average daily gain. Most steers reach the correct weight and finish for market between 14 and 20 months of age.

It is important to remember each fair may have different weight limits and many have both a minimum and maximum weight limit. Even if there isn't a upper weight limit, remember that many judges may consider steers over 1,400 pounds too heavy to be competitive. Once you know how many days until the show or fair, what the target weight or weight limits are for the show, and you've predicted a reasonable expected weight gain, you can calculate a good weight range for selecting your feeder steer. For example, if you select a growthy, medium-framed feeder steer on March 1, and the show weigh-in date is August 18, the steer has about 170 days to grow. At an average daily gain (ADG) of 3.0 pounds per day and a target weight of 1,200 pounds at show time, the steer must weigh 690 pounds at the time of selection. This is calculated by multiplying the number of days times the expected gain and subtracting that from the target ending weight; $1,200 - (3.0 \times 170) = 1,200 - 510 = 690$. You may want to follow this same procedure with several rates of gain and ending weights so you feel comfortable with a weight range.

If you are a new steer project member, you may want to give yourself a little more leeway. Therefore, you may want to project only a 2.0 pounds per day gain and a target weight of 1,200 pounds. With this example, you would select a 860 pound feeder steer = $1,200 - (2.0 \times 170) = 1,200 - 340 = 860$. It is important to avoid selecting a steer that is too big or too old that the rate of gain must be limited by severe feed restrictions or could result in an undesirable carcass.

Adequate facilities are another crucial factor in making sure your market steer project gains well. Your steer's performance will be improved by providing it with plenty of pen space and shelter from the sun and weather. Keep your steer's pen, feeder and water trough clean. You should provide your steer fresh, clean, cool water (water should be kept out of the direct sun so it stays cooler) and trace-mineralized salt at all times.

When you purchase your feeder steer, be sure you ask for and write down critical information pertaining to the animal you selected. Effective and accurate record keeping is becoming more critical each day because of the demands from domestic and exports markets and the U.S. government for disease control and surveillance. Ask the producer you are buying from for the steer's birth date, animal/premise identification, bill of sale, brand transfer slip and the health care history. Knowing the health care history will help you

design a health program of your own, including: when and what booster shots you need to give your steer; how soon to treat for internal and external parasites; and if medication is needed in the feed. Be sure the steer has been castrated correctly. Clostridial vaccinations should have been completed before weaning. If not, vaccinate with 7-way at the time of purchase followed by a booster as indicated by the label.

When giving your steer any medications or animal health products, always follow the label directions. Follow withdrawal time requirements carefully for all market steers because they will enter the human food chain. Failure to follow withdrawal times can result in illegal residues in the carcass. The misuse of drugs, vaccines, pesticides, and various other medications in meat animal production can have serious legal consequences, including civil and/or criminal prosecution. This can also result in condemnation of the carcass and loss of payment, as well as jeopardize the safety and quality of the food you are producing.

If you have a choice of the route of administration of any medication between subcutaneous and intramuscular, always choose the subcutaneous route. Intramuscular injections do affect the quality of the food product you are producing. They not only cause lesions in the form of abscesses or scars, but they can result in the surrounding muscle tissue being unacceptably tough. Therefore, if you must give an intramuscular injection, it should be given forward of the front shoulders in the neck region because this is a lower value area of the carcass.

For ruminant animals (animals with a four compartment stomach such as cattle) the Food and Drug Administration regulation, Title 21 Part 589.2000 of the Code of Federal Regulations (effective August 4, 1997), prohibits the feeding of ruminant meat and bone meal back to ruminants at any time. For example, do not use any feed that is not specifically formulated for ruminants (i.e. do not use feed or treats formulated for pigs, horses, poultry, rabbits, dogs, etc.).

Cattle are susceptible to severe digestive upset with any sudden changes in diet. Before you bring your steer home, it is always wise to ask the producer about the quantity and type of feed the steer has been fed. If you can use the same or similar feedstuffs when you first bring your animal home, you can minimize the stress the animal experiences. When you make changes in the diet, make them very slowly to avoid digestive upset that can sometimes lead to

the death of the animal.

Bloat and acidosis can be life-threatening conditions when a steer has had more than his share of grain and/or the diet has been changed too rapidly. Bloat occurs when gas accumulates and the animal is not able to belch it out. The signs of bloat are swelling high on the upper left side behind the ribs and in front of the hip bone. To treat minor bloat, keep the steer on its feet and walking, uphill if possible, with the head up; experienced producers may treat with mineral oil. In more acute cases, call a veterinarian. A large stomach tube can be passed through the esophagus to release ordinary gas bloat but is of little value in "frothy bloat".

Acidosis, sometimes referred to as "grain overload", usually results from introducing grain too rapidly into the diet. The signs of acidosis are often loose, watery feces covered with clear gas bubbles that glisten in the light. Treatment involves an oral administration of buffering compounds such as sodium bicarbonate. This treatment reduces the severity of acidosis by counteracting the effects of the acid in the digestive tract. To prevent acidosis, start grain feeding slowly and be consistent in the amount of feed and the time of day at which the animal is fed. Probiotics (a mixture of different bacteria beneficial to rumen function) and/or sodium bicarbonate are good to have on hand when feeding high grain diets to show cattle.

Monitoring the manure is a good way to determine the optimal functioning of the steer's digestive tract. A consistent, firm manure patty that does not splatter when it hits the ground indicates that the steer's digestive tract is functioning properly. A watery stool usually means that the animal is taking in too much grain or the diet has been changed too rapidly. In this situation, the grain portion of the diet should be reduced and some long stemmed forage, such as grass hay, should be fed. If this problem is not corrected, severe acidosis usually results, and the steer will go off feed and possibly die if it is not treated. If the manure is too firm and dry, the steer needs more feed and/or water or a higher energy concentration in the ration. Inadequate energy intake results in decreased weight gains and less finish, which will impact the final quality grade.

It is important to feed a balanced diet, paying close attention to energy, protein, vitamins and minerals. Macro and micro minerals are required for proper skeletal and nervous system function. Selenium is deficient in most of the Pacific Northwest, so you need to supplement it in the diet. The level and ratio of calcium and phosphorus are also important for

proper growth and health of steers. When feeding show steers, the calcium/phosphorus ratio should be approximately 2:1. A properly balanced diet should contain approximately 2 parts calcium to 1 part phosphorus. Diets high in phosphorus levels compared to calcium may cause urinary calculi (formation of stones which cause blockage in the urinary tract). High quality roughages have high levels of calcium and low levels of phosphorus, while many protein supplements and most grains are low in calcium and have moderate-to-high phosphorus levels. Therefore, show steer diets should contain some roughage.

Monitor your steer's performance by weighing it at least once a month, in the morning before feeding, and calculate its daily gain since the last weight. Record its weight and date on a chart. If its daily gain has fallen off, ask a knowledgeable adult for some help in determining why. It may be a simple matter of making a minor change in the facilities to minimize the stress on the steer; it may require changing the amount of feed given or the energy level of the ration; or it may require addressing a health related problem.

Sometimes steers that are too big early in the feeding period need to be held to a lower rate of gain for a period of time to prevent them from exceeding the proper show weight. This can be done by providing a lower energy ration with hay or roughage making up a larger portion of the diet. However, if this practice is continued throughout the feeding period, it may lead to an animal with inadequate finish or a "hay belly" so it is not competitive in the showing. If you use roughage to slow down your steer's rate of gain, consider adding roughage mid-way through the feeding period and finishing the steer on a higher energy diet during the last month before the show to give it a trimmer appearance and a more correct finish. This will usually result in a more desirable carcass. Large steers can also be limit-fed a higher energy ration in conjunction with an exercise program to hold the steer's weight gain to a minimum. If your fair or show has special weight gain and carcass competitions, it is important to know the criteria for these special awards.

Be aware that when you have your steer tagged for a junior show or fair, an infection or abscess may develop around the area the ear was pierced. Cleaning the area and treating it with a disinfectant will help clear up the infection quickly and minimize the loss of ear tags.

The days prior to the fair and during the fair can be stressful for any animal because of all the added activities and new facilities. With

this in mind, it is beneficial for your steer to be prepared prior to the actual event. Four to five days prior to the show, feed the steer in the pan that will be used at fair. If the steer has reached the desired weight, reduce the feed intake to about two-thirds of the normal intake two days before the fair. Five to seven days prior to arrival at the fair, water the steer in the water bucket that will be used at the fair. Each water source has its own distinct odor and flavor. Adding ½ cup of molasses per 5 gallons of water will mask the odor and taste

and help maintain adequate water intake during the fair. Electrolytes can also be added to mask the taste and odor of chlorinated water. Start adding molasses or electrolytes to water prior to the show and continue throughout the show. Do not feed the steer immediately upon arrival at the fair. Allow the steer to calm down and become accustomed to its new surroundings. The first show feeding should be one-half to two-thirds of the normal feed intake to help reduce stress symptoms. Gradually increase feed to pre-show amounts over the next couple of feedings.

Table 1. Projected feed intake and average daily gain of the average show steer.

Show Steer Project: Feed Projections

Purchase Date: Depends on show date

Weigh-in Date: Shows typically have 120-150 day test
Weight: 800 lbs (700-900)
ADG goal: 2.5 to 3.5 lbs/day

Show Date: Know the date of the fair
Finish Wt: 1250 lbs (1150-1400 lbs)

Some steers can perform at higher ADG levels when fed a high quality grain and forage diet. However, you must remember show steers are being fed for a particular date, rather than weight (like in the industry). It is difficult for the trained eye to determine the exact date a steer will be ready to go to market. Also, many of you will be working with your steers to prepare them for fitting and showing which requires energy use and decreases ADG performance. Therefore, it is necessary to monitor steers' weight and backfat and change diet and exercise accordingly.

Increases in the amount of grain fed must be made gradual. Do NOT make increases at end of each time period. Rather--work up to these amounts over a period of time. Increase the amount of grain fed by .5 to 1 pound per day over a 3 to 4 day period. Watch the steers' eating habits and fecal sample. Do they have left over feed? Do they have diarrhea? --If you answered YES, you are increasing the grain too fast or you are feeding him too much -- BACK OFF!

FEEDING

Date In	Comments	# Days	Grain (lbs/d)	Total Grain	Hay (lbs/d)	Total Hay	Expected ADG	Total Period Gain	End Period Wt
Day 1-6	Weaned/	6	3.5	21	9.5	57			525
Days 7-12	Purchased	6	4.5	27	10	60			535
Days 13-18		6	6	36	12	72			550
Days 19-91		73	8	584	13	949	2.25	164.25	714.25
Days 92-105		14	9	126	12	168	2.25	31.5	745.75
Day 106-113	Weigh-In	7	11	77	10	70	2.25	15.75	761.5
Day 114-120	Weigh-In	7	15	105	8	56	2.25	15.75	777.25
Day 121-127	Weigh-In	7	18	126	5	35	2.25	15.75	793
Day 128-240		113	21	2373	4	452	3	339	1132
Days 241-284	Show	44	23	1012	4	176	3	132	1264
		283		4487		2095		714	

Feedstuffs:

Grain Mix: 12-13% CP
 15% Crude Fiber
 Complete mineral and Vitaming mix

Hay: 16-18% CP

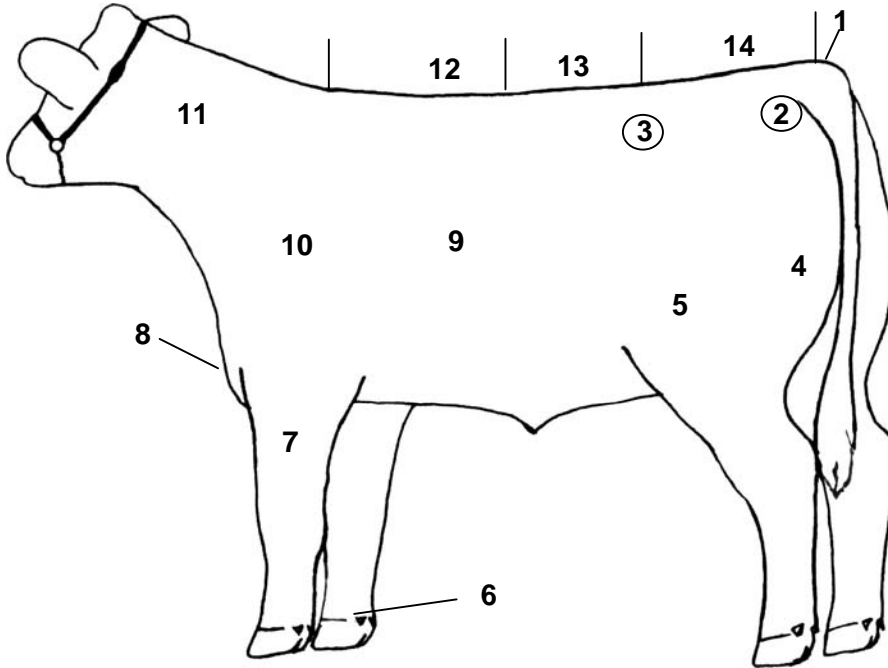
This nutrient analysis is typical of a corn, barley, and/or oat mixture with molasses. Many premixed sacked beef feeds from the feed stores contain diets with similar nutrient analysis

High Quality grass/alfalfa or alfalfa--typical of hay grown in this region. Make sure the hay is free of mold and weeds.

These calculations are AVERAGES. DO NOT use these numbers as your sole feeding guidelines. You must pay attention to feed bunk management, feed nutrient analysis, animal's genetics, level of exercise, and environmental conditions. Remember exteme hot, cold, or wet enviromental conditions will negatively impact your animal's performance.

Figure 2. Commonly evaluated body parts of a market steer.

Steer's Body Parts

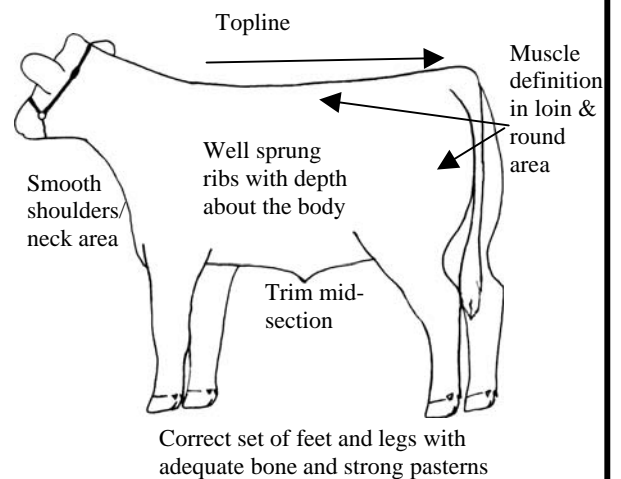


1. Tailhead
2. Pin Bone
3. Hip or Hook
4. Hind Quarter or Round
5. Stifle
6. Pastern
7. Forearm
8. Brisket
9. Ribs
10. Shoulder
11. Neck
12. Spring of Rib Region
13. Loin Region
14. Rump Region

Figure 3. Some characteristics of the ideal show market steer

Ideal Market Steer:

Structure	Muscle	Balance	Back Fat (Finish)
<ul style="list-style-type: none"> • Sound feet and legs • Strong pasterns • Level hip and square tailhead • Heavy bone 	<ul style="list-style-type: none"> • Muscle definition in loin and round • Length and depth of stifle • Depth, length and thickness of rump • Thickness of loin 	<ul style="list-style-type: none"> • Level topline • Smooth shoulder, neck, and brisket area • Square rump • Trim through the mid section • Deep ribbed or well sprung ribs 	<ul style="list-style-type: none"> • Determined by feeding and exercise program • Evaluate over topline and rib coverage • Target .35-.45 inches • Yield Grade 1.9-2.9 • Quality Grade of Choice or better



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