



## Raise the ideal dairy steer

Turn Holstein bull calves into a finished product packing plants want.

by Dan Schaefer and Bill Halfman

**H**OLSTEIN steers are a significant proportion of the finished steer and heifer supply in the U.S. They are a desirable source of beef because they are available in large numbers, have a uniform genetic composition, and their carcass yield and quality grades are predictable by packer buyers.

The following are characteristics of the ideal Holstein steer:

- Weighs 1,400 to 1,550 pounds
- Has a body condition score of 7 on the beef cattle score card (3.5 for a dairy cattle score)
- Walks on sound joints and hooves
- Has a relatively clean hide
- Is hornless
- Looks healthy in terms of eyes, posture, and respiration rate

The steer should also have a youthful appearance as indicated by the look and size of its head relative to its body. The animal's body muscling score will be 2 or 3, depending upon its inherited muscle to bone ratio.

Gut fill and transportation shrink will cause its dressing percentage to be 58 to 62 percent. Due to residual feed in the steer's rumen, withholding feed in the 24 hours before harvest elevates dressing percentage without affecting animal welfare.

When these live animal characteristics are evident in a group of steers, the buyer expects USDA yield grades to be 2.7 to 3.5 and USDA quality grades to be mainly Choice with some Prime and the occasional Select carcasses.

The hides from these cattle will be free of grub holes, unbranded, and large. These are all characteristics that appeal to the tanning industry.

How does one produce ideal finished Holstein steers? Here is our advice for what to do and what not to do.

### It starts with calves

Bull calves need the same kind of attention and care that is given to heifer calves. Colostrum or a colostrum replacer must be fed in ade-

quate quantity within four hours of birth. The navel should be immersed in sufficient strength iodine solution to prevent entry of bacteria.

The calf's environment should be dry and draft free. At the level of the calf, if you are jacketless and chilled, the calf will be chilled as well. Respiratory disease is their most common affliction. Milk replacer quality and quantity, minimal calf nose-to-nose contact, and hygiene of calf equipment and workers are essential.

When one can palpate two testicles, castrate the bull calf with a knife. Knife castration is strongly recommended to eliminate stags, which are a detriment to safety and profitability in feedlots.

Introduction of calf starter feed, dehorning, weaning, vaccinations, and timing of these procedures are no different for steers than they are for heifers. Dehorning and castration can be simultaneous and timed so the calf has recovery time before weaning. The postweaning feeding of heifers and steers is not different until calves reach 350 pounds.

### The next phase

The middleweight phase is considered to be 350 to 750 pounds. During this phase, two options are acceptable. One option is to maintain steers on a replacement heifer feeding program. This involves relatively high hay or silage feeding and growth rates of only 1.75 pounds daily. This would be the choice by a farm that is seeking to use its forage inventory or is conserving corn grain for the finishing phase. Steers fed in this manner will display rapid, compensatory growth rates when transitioned onto the energy-dense finishing diet. Grazing fits this phase for Holstein steers, but they lose weight while they are learning how to graze, unless they can observe an experienced bovine.

The second option is to adjust the steers up to a diet of 62 Mcal of net energy for gain (NEg) per hundredweight (cwt.) of diet dry matter (DM) (Table 1). On a diet of this energy density, one can expect growth rates of 3 pounds daily. The first option would require 200 days to reach 750 pounds of body weight, and the second option would require 117 days.

The finishing phase takes the steers from 750

**HOLSTEIN STEERS** should weigh 1,400 to 1,550 pounds when finished. This steer grazed for 175 days, received a self-fed finishing diet, was 19 months old, and his carcass was Choice with a yield grade of 3.

pounds to 1,450 pounds and must involve a diet with an energy density of at least 62 Mcal NEg per cwt. DM. It is important to transition the steers onto the finishing diet near 750 pounds. Waiting until 1,000 pounds is a mistake since the steers will not have a body condition score of 7 until they are 1,600 pounds. This is past the optimum window for efficient feed conversion and packer buyer interest.

Likewise, a high silage or hay diet is not a finishing diet because it is too low in NEg concentration. Steers fed such diets will gain weight but not body fatness and are severely discounted when sold.

Steers can be finished by feeding the finishing diet in a fenceline bunk or in a self-feeder, though the diet fed in the self-feeder may not include silage or other wet ingredients. When the feed is provided fresh daily in the bunk and the self-feeder is never empty, feed conversion efficiency can be similar between the two feeding methods. With both feeding methods, the steers must be checked daily for well-being. The eye of the master fattens the stock.

Steers must be bedded to maintain clean hair coats and to provide insulation when lying on a cold surface. Since Holstein steers have relatively little subcutaneous fat and thinner hair coats compared to beef breeds, they are more likely to lose significantly more body heat in severely cold conditions.

If steers will be finished on concrete slatted floors, cover the floors with rubber matting. This will substantially reduce joint inflammation.

Use of anabolic implants is strongly recommended but only when the diet energy density is 62 Mcal NEg per cwt. DM or greater. When the diet energy density is high, the implant will improve feed conversion efficiency with minimal negative impact on USDA quality grade.

If steers will be implanted only once, the timing of implant placement should be done so that the duration of the implant and days to harvest coincide. Anabolic implant technology, when managed correctly, offers the highest return on investment of any technology available for finishing cattle.

Bigger is not always better, but an advantage in marketing falls to those who can market semi-load lots. This is because such a lot size is eligible for forward contracting, and forward contracting often offers a better basis than selling at an auction market.

Holstein steers can serve as a profit opportunity for dairy farmers. The key is to create a steer that is in demand by packing plants to draw a higher price. 🐄

**Table 1. Equivalencies between corn silage: high-moisture corn ratios and net energy for gain concentrations<sup>1, 2</sup>**

Corn silage Proportion (%)	Corn, high-moisture Proportion (%)	Net Energy <sub>gain</sub> Mcal/cwt DM
10	60	65
15	55	64
20	50	63
25	45	61
30	40	60
40	30	57
50	20	54

<sup>1</sup> Based on diet DM formula as follows: Corn silage proportion; high-moisture corn proportion; modified wet distillers grain with solubles, 25%; and supplement, 5%.

<sup>2</sup> NEg values for diet ingredients (NASEM, 2016) were corn silage, 44 Mcal/cwt. DM; high-moisture corn grain, 71 Mcal/cwt. DM; and modified wet corn distillers grain with solubles, 74 Mcal/cwt. DM.

The authors are a professor of animal sciences at the University of Wisconsin-Madison and an agriculture agent for UW-Extension in Monroe County, respectively.