

# **Management and Feeding of Holstein Steers**

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**Birth to 350 lbs**

## **Calf Health Management**

- **Purchase healthy, strong calves**
  - Colostrum
  - Agile
  - Dry navel cord
- **Transport calf in draft-free, clean vehicle**

## **Housing should be dry and draft-free**

- **Confinement facilities**
  - 7-10 cu ft/min/calf in winter
  - 60 cu ft/min/calf in summer
  - low humidity and ammonia
  - 55-65 F initially
- **Hutches**
  - adv: portability, exposure to sun, calf separation
  - disadv: freezing of liquids, higher fat milk replacer

## **Sanitation**

- **All-in-all-out for calves in facility, espec when co-mingling occurs**
- **Pen/crate floor and pail areas are sources of contamination**
- **Wash with disinfectant and dry**
- **Repeat washing and drying**
- **Idling of facility can break sequential contamination**

## **Disease Prevention and Treatment**

- **Develop a program (see page 9) with a veterinarian who has calf-raising experience**
- **Prepare for sick calves; it will happen**
- **Identify calves and observe carefully**
- **Take temperatures; treat promptly and sustain treatment**
- **Pneumonia and scours are common causes of calf death**

## **Milk Replacer Feeding**

- **Milk replacer - milk protein sources preferred**
- **Fat - 10-22%**
- **Antibiotic and coccidiostat**
- **Feed consistent amounts at regular intervals**
- **Offer clean water, after milk replacer**

## **Calf Starter**

- **Corn, oats, soybeans and molasses**
- **Offer good quality hay in limited amounts**
- **Diet should contain 20-15% crude protein**

## **Weaning**

- **Wean after starter intake is 1.5 lbs/hd daily for previous four days**
- **Decrease milk replacer powder gradually over 4-5 days while offering same volume of liquid**
- **Weaning at 5-6 weeks of age is typical**

## **Castration and Dehorning**

- **Use a heated dehorning device**
- **Knife castration is preferred**
- **Cryptorchids become stags**
- **Implant for accelerated growth, if you are selling a “commodity” animal**

## **Group Housing**

- **Holsteins have thin hides so more shelter is needed**
- **Allow calves to choose location which is dry and draft-free**
- **Vented roof ridges for escape of humidity**
- **Treat for removal of internal and external parasites**

## **Feeding the Weaned Calf**

- **Objective: Sell calf at 350 lbs**
  - Maximize growth rate
  - Minimize ownership time and interest expense
  - High-energy, 15% CP with high rumen escape value
- **Objective: Feed calf to slaughter wt.**
  - Allows for use of higher forage diet
  - Early, slow growth can be compensated by later, faster growth

## **350 lbs to Finish**

### **Health Management**

- **With purchased calves, vaccinate promptly against IBR, PI3, BVD and BRSV, which cause shipping fever**
- **Vaccinate against clostridial diseases**
- **Palpate scrotums, castrate stags**
- **Dehorn, if not yet dehorned**
- **Consider use of a long-acting implant**

## Feeding Programs

- Two-stage program: moderate forage or pasture for middle weights, followed by low forage-high corn for heavy weights
- Single-stage program: low forage-high corn from 350 lbs to slaughter
- Design a feeding program that fits your labor, land, facility and equipment resources

## Why Feed a High-Energy Diet?

- Holsteins and other high-milk breeds have higher energy requirements for maintenance than low-milk breeds
- Growth rate is determined by amount of energy consumed in excess of maintenance requirement
- High-energy diets maximize growth rate, and minimize the number of days to reach the desired slaughter weight



## Energy Concentrations

<u>Feed</u>	<u>NEg (Mcal/cwt DM)</u>	<u>Ratio to Corn</u>
Corn, dry	68.2	100
Corn, hi-moist.	73.6	108
Ear corn, grnd	61.4	90
Barley	63.6	93
Oats	50.4	74
Corn silage	52.7	77
Alf., mid-blm	30.9	45

## Cost per Unit of Net Energy for Gain

<u>Feed</u>	<u>unit</u>	<u>DM, %</u>	<u>\$/unit</u>	<u>\$/Mcal NEg</u>
Corn, dry	bu	85	2.00	0.062
Corn, HM	bu		2.00	0.057
Corn silage	ton	35	20.00	0.054
Alf., mid blm	ton	88	50.00	0.092

- Corn is a less expensive energy source than hay.
- Although the costs of corn silage and corn energy are similar, the moisture content of corn silage limits the amount of DM, and therefore energy, that steers consume.

## Corn Silage in Holstein Steer Diets (430 - 1100 lbs)

<u>Corn: Corn silage</u>	<u>60:40</u>	<u>75:25</u>	<u>90:10</u>
Days on feed	229	202	194
DM intake, lb/d	16.2	16.5	16.6
Daily gain, lb/d	2.95 <sup>a</sup>	3.25 <sup>b</sup>	3.5 <sup>c</sup>
DM feed/gain	5.9 <sup>a</sup>	5.4 <sup>a,b</sup>	5.2 <sup>b</sup>

<sup>a,b,c</sup> P<0.05

Alfalfa haylage fed from 430-500 lbs;  
corn silage fed from 500-1100 lbs

## Forage

- When 0-2 lbs of long hay is fed, cattle will crave fenceposts and boards
- Small amounts of long forage are able to stimulate cud-chewing, which is good
- Fresh bedding, like straw, will be consumed as a forage source; fresh bedding can decrease grain consumption

## Feeding Methods

- **TMR and fenceline bunk**
  - adv: more feedstuff choices, more feed blend choices, observation of feed intake and health
- **Self-feeder (steer stuffer)**
  - adv: low labor, low equipment cost

## **Avoiding Acidosis**

- **21-28 day adaptation to high-corn diet**
- **Consistent daily intake of high-corn diet**
- **Fine feed particles increase risk of acidosis**
- **Include an ionophore in diet**
- **Minimum of 5% plant matter in diet, more is safer**

**Whole Corn Plus Pellet (WCP) Diet Fed with  
or without Access to Long Hay for 259 d**

	<u>WCP</u>	<u>WCPLH</u>	<u>WCPFC</u>
Initial wt, lb	343	343	344
Final wt, lb	1150	1124	1128
Daily gain, lb/d	3.12	3.02	3.03
DM, lb/d			
Wh. corn	13.35	13.30	13.75
Pellet	2.65	2.65	2.70
Long hay	0	0.7	1.00
Total	16.00	16.65	17.45
DM/gain	5.15	5.53	5.78

**Chester-Jones et al., 1993**

## Chester-Jones et al., 1993

- Dietary regimen did not affect ( $P>0.05$ ) daily gain, feed intake or feed conversion efficiency
- Maximum intake of hay available free choice was 2 lbs/steer daily
- Authors stated that free choice hay improved consistency of feed intake

## Components of Finishing Diet

- Energy source(s)
- Forage source(s)
- Protein source(s)
- Calcium, potassium, trace-mineral salt
- Vitamins A,D and E
- Rumensin/Tylan or Bovatec/OTC
- Aureomycin (CTC) or Terramycin (OTC) for coughing

## Supplemental Protein Sources

<u>Source</u>	<u>CP%</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>\$/%CP</u>
38% Pellet	42	Cwt	13.00	0.31
44% SBM	49	Ton	170.00	0.17
Urea	288	Ton	400.00	0.07
Soybeans	40	Bu	4.20	0.18
Corn gluten	22	Ton	90.00	0.20

## CP Sources in Dry, Whole Corn Diets

		<u>Urea</u>	<u>Raw</u>	<u>Roasted</u>
Period 1	End wt, lbs	497	480	514
	Gain, lbs/d	2.45	2.29	2.58
Period 2	End wt, lbs	829	791	821
	Gain, lbs/d	3.38	3.17	3.14
Period 3	End wt, lbs	1189	1222	1258
	Gain, lbs/d	2.25	2.61	2.65
Overall	Gain, lbs/d	2.62	2.66	2.76
	DM/gain	6.17	6.11	6.07

Initial wt = 222 lbs

Fox and Ketchen, 1991

## Proposed Diet Ingredients

- Long hay, 2 lbs/day
- Corn, whole or cracked
- Soybeans, whole or cracked
- Balancer pellet
  - Ca, K, vitamins, ionophore, antibiotic

## Summary

- Dry, draft-free housing conditions
- TMR with bunk offers more choices
- Consider using home-raised soybeans or purchased by-products as supplemental protein sources
- Feeds must remain uniformly mixed