



# Dairy Calf & Heifer Association Gold Standards II

*Production and performance standards established for Holstein heifers, from 6 months of age to freshening, across the United States.*

## I. Mortality

A. Given calves that are healthy without morbidity from earlier age, **total death loss** from all conditions, but primarily pneumonia, should be:

1. 6 to 12 months of age: <1%
2. 12 months to freshening: <0.5%

## II. Morbidity

A. Defining **pneumonia** as a case of respiratory disease which requires individual animal treatment with an antibiotic (does not include use of feed-grade medication fed with regular ration), target morbidity rates are:

1. 6 to 12 months of age: <3%
2. 12 months to freshening: <1%

B. Target rates for morbidity (disease condition which requires treatment) from all other causes, **including pinkeye, mastitis, heel warts, diarrhea, bloat, BVD, hardware disease** and **accidental injury** are:

1. 6 to 12 months of age: <4%
2. 12 months to freshening: <2%

## III. Growth Rate and Nutrition

A. **Target growth rate** is 1.7 to 2.0 lbs. average daily gain. Weigh checks should be performed routinely; ideally, at least every three months.

B. **Total ration protein** content should be:

1. 6 to 9 months of age: 15-16%
2. 9 to 13 months of age: 14-15%
3. 13 months of age to freshening: 13.5-14%

C. Work with a **nutritionist** to help formulate rations and monitor/consult routinely.

D. Keep the herd veterinarian informed of rations for all ages of heifers.

E. By **13 to 15 months of age**, strive to achieve:

1. **Weight** of 825 to 900 pounds
2. **Hip height** of >50 inches
3. **Wither height** of >48 inches

[Or 55% of the weight of mature cows in the herd]

F. **Target weight** immediately precalving is 1,350 pounds (or 85% of the weight of full-term, pregnant, mature cows in the herd).

G. **Target body condition score** at freshening is 3.5 (on a 5-point scale).

**continued >**

# DCHA Gold Standards II (continued)

## IV. Housing

### A. Feeding space

#### 1. Target feeding space

- |                                    |                    |
|------------------------------------|--------------------|
| a. 6 to 12 months of age:          | 18 inches per head |
| b. 12 to 18 months of age:         | 20 inches per head |
| c. 18 months of age to freshening: | 24 inches per head |
| d. 3 weeks prior to freshening:    | 30 inches per head |

#### 2. Stocking density and pen assignments

- Free-stall or open-lot housing should provide total bunk space inches to allow all animals to eat at the same time.
- Feeding systems with headlocks or slants should provide an animal:stall stocking density of 1:1, or be stocked at a rate to accommodate target feeding space above (example: heifers three weeks prior to freshening in 24-inch stalls should be stocked at 80%).
- Pre-fresh heifers should be housed separately from close-up, adult cows.

### B. Housing environment

- Heifers should have **protection from direct sunlight** any time the Temperature Humidity Index (THI) (Fig. 1) meets or exceeds:
  - 77 for heifers 6 to 12 months of age
  - 72 for heifers 12 months of age to freshening
- Heifers should have **shelter from wind and precipitation** any time wind chill temperatures (Fig. 2) are 20°F or lower.
  - Heifers 6 to 12 months of age should have overhead shelter in these conditions.
  - Heifers 12 months of age to freshening should have a windbreak in these conditions.
- Housing environment for heifers of all ages always should be **clean, dry and draft-free, with good air quality.**
- Target resting space**
  - 6 to 12 months of age: 45 square feet per head, or one free stall per animal
  - 12 to 18 months of age: 50 square feet per head, or one free stall per animal
  - 18 months of age to 2 to 4 weeks pre-freshening: 60 square feet per head, or one free stall per animal
  - 2 to 4 weeks pre-freshening: 100 square feet, or one free stall per animal
- Target free stall space**

a. 6 to 9 months of age:	30 x 54 inches
b. 9 to 12 months of age:	34 x 60 inches
c. 12 to 18 months of age:	36 x 69 inches
d. 18 months of age to 2 to 4 weeks pre-freshening:	40 x 84 inches
e. 2 to 4 weeks pre-freshening:	43 x 96 inches

*continued* ►

# DCHA Gold Standards II (continued)

## V. Vaccination and Parasite Control

- A. Work with a veterinarian, and – in custom-rearing facilities – dairy owners, to develop a **vaccination protocol** appropriate to the disease challenges of your region and operation.
- B. **Diseases to consider addressing with vaccination** include blackleg; BRSV, brucellosis; BVD (Types 1 and 2); clostridial disease; coronavirus; *E. coli* mastitis; enteric disease caused by *Salmonella*; IBR; leptospirosis; papilloma (warts); PI<sub>3</sub>; pinkeye; pneumonia caused by *Pasteurella multocida* and *Mannheimia haemolytica*; rotavirus; trichomoniasis; vibriosis; and other diseases specific to your geographic region.
- C. Practice **internal and external parasite control** based on geography and herd veterinarian's recommendations.

## VI. Breeding

- A. **Begin breeding** at 13 to 15 months of age, with a proper weight of 825 to 900 lb., hip height of >50 inches, and wither height of >48 inches, [or at 55% of the weight of mature cows in the herd] so that heifers **freshen** at 22 to 24 months of age.
- B. At least 30 days prior to breeding, **revaccinate** all animals with a modified live vaccine.
- C. Strive to achieve >70% **first-service conception rate** with conventional semen and 7 to 12% less with sexed semen.
- D. **Inseminate** at least 80% of animals within the first 21 days of moving to the breeding pen.
- E. 85% of heifers should be **pregnant** after three heat cycles.
- F. **Pregnancy-check** all heifers to confirm pregnancy before removing them from the breeding pen.

## VII. Pregnant Heifers

- A. Some animals will **abort** after pregnancy diagnosis. Typical rate is approximately 3%.
- B. Run **clean-up bulls** with pregnant heifers if necessary.
  - 1. Perform **routine health maintenance** on bulls, including vaccination, deworming and breeding soundness exams, at six-month intervals.
  - 2. **Rotate and replace** bulls as necessary.
- C. **Reconfirm pregnancies** 70-100 days after initial check.
- D. **Reconfirm pregnancies** prior to animals leaving custom-rearing operations, and communicate correct breeding dates back to the dairy. For heifers raised on site, **reconfirm pregnancies** before heifers are moved to the pre-fresh pen.
- E. **Revaccinate** 4 to 8 weeks prior to calving when disease pressure is present and to boost colostrum antibody quality.

**continued** ➤

# DCHA Gold Standards II (continued)

Fig 1. Temperature Humidity Index (THI)<sup>1</sup> for dairy cows. Modified from Dr. Frank Wiersma (1990), Department of Agricultural Engineering, University of Arizona, Tucson.

DEG	RELATIVE HUMIDITY																					
	F	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
75															72	72	73	73	74	74	75	75
80							72	72	73	73	74	74	75	76	76	77	78	78	79	79	80	80
85			72	72	73	74	75	75	76	77	78	78	79	80	81	81	82	83	84	84	85	85
90	72	73	74	75	76	77	78	79	79	80	81	82	83	84	85	86	86	87	88	89	90	90
95	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	95
100	77	78	79	80	82	83	84	85	86	87	88	90	91	92	93	94	95	97	98	99	99	
105	79	80	82	83	84	86	87	88	89	91	92	93	95	96	97							
110	81	83	84	86	87	89	90	91	93	94	96	97										
115	84	85	87	88	90	91	93	95	96	97												
120	88	88	89	91	93	94	96	98														

Mild Stress  
 Medium Stress  
 Severe Stress

<sup>1</sup> THI=(Dry-Bulb Temp. C) + (0.36 dew point Temp. C) + 41.2



Fig. 2

## Wind Chill Chart

