

Monitoring Growth in Dairy Heifers

Much can be learned about the success of a calf and heifer rearing program by measuring height and weight of these animals. Most dairy farmers, extension agents, feed industry people, and veterinarians are able to recognize underconditioned or overconditioned animals. However, few can judge by sight whether a heifer's height or weight is normal for her age. Measuring and weighing allow a comparison to standards or breed averages and can indicate some problem areas that should receive attention.

Figure 5 [below] depicts the results of measuring a large number of heifers in Pennsylvania. The graph lists the average of all heifers measured and represents good growth ranges for the breed. Holstein breed standards developed from the measurements are listed in Table 24 [left]. The graph in figure 5 points out that

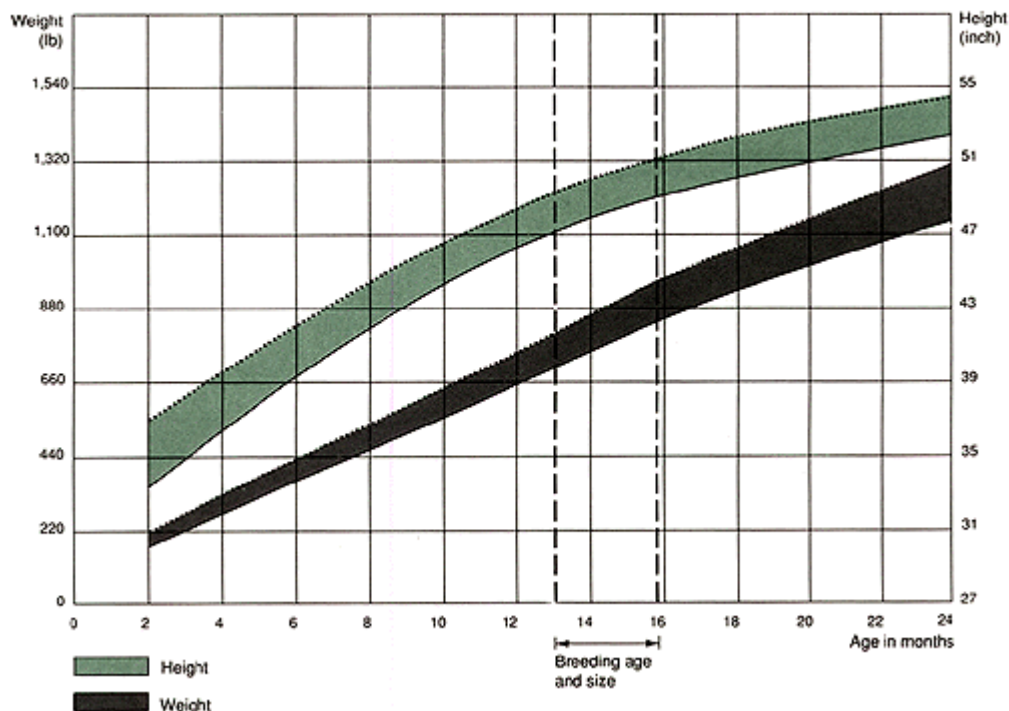
the variability of height at the withers is greatest in the younger heifers. In general, the variability of weight increases with age. The overall goal of a heifer raising program should allow for a relatively constant rate of growth. Holstein heifers should reach 750 to 800 pounds and 48 to 50 inches by the desired breeding age of 13 to 15 months. Beyond this, heifers should be calving at 1137 to 1296 pounds and measuring 52 to 54 inches tall when they are 24 months of age.

Table 24. Range of recommended Holstein heifer weights and heights developed from Penn State measurements.

Age (mos)	Weight range (lb)	Height range (inch)
1	133-155	31.7-33.2
2	178-209	33.5-35.2
3	225-263	35.2-37.1
4	272-319	36.9-38.8
5	320-374	38.4-40.4
6	368-430	39.8-42.0
7	417-486	41.1-43.3
8	466-541	42.3-44.5
9	514-597	43.4-45.7
10	563-652	44.5-46.7
11	611-707	45.4-47.6
12	659-761	46.3-48.5
13	706-814	47.1-49.3
14	752-866	47.8-50.0
15	798-917	48.5-50.6
16	812-966	49.1-51.2
17	885-1014	49.7-51.7
18	926-1061	50.2-52.1
19	966-1106	50.6-52.6
20	1005-1148	51.0-53.0
21	1041-1189	51.4-53.3
22	1075-1227	51.7-53.7
23	1107-1263	52.0-54.0
24	1137-1296	52.2-54.3

Source: Journal of Dairy Science 70:653-660, 1987.

Figure 5. Holstein calf and heifer growth chart.



The accompanying growth charts should represent the type of Holstein heifers that are being raised today in many parts of the United States. While every heifer may not conform to these standards, the majority of heifers should be somewhat near these standards in order to be large enough to breed at 13 to 15 months of age and, subsequently, to calve at 24 months of age. The only real way to tell how heifers are growing is to weigh and measure them several times a year. Once or twice a year is better than not at all.

Measuring height.



Measuring weight.



The materials needed to weigh and measure calves and older heifers are a weight tape, a measuring stick, a piece of paper, and a pencil. It works best with three people: two to do the weighing and measuring and one to do the recording of numbers. Twenty animals per hour can be done in any reasonable restraining facility.

Some important points to remember when taping animals:

- Make measurements with the animal standing straight on a level hard floor surface and with weight equally balanced on all feet.
- Watch for excess manure and dirt on the underside of the heifers which could bias the tape measurements.

Growth charts should be used to evaluate the performance of a heifer management program and to spot any major problems that may be occurring. These charts will show problem areas where whole groups of animals are either undersized, underweight, or overweight—all good indicators of improper feeding or poor overall management.