1986

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Jeffrey F. Keown

University of Nebraska - Lincoln, jkeown1@unl.edu

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At What Weight Should Holstein Heifers Freshen?

Jeffrey F. Keown, Extension Dairy Specialist

This guide offers research findings on the appropriate weights for Holstein heifer freshening and suggests producers be aware of economic considerations involved in heifer freshening.

Most producers realize that the weight of a heifer at freshening affects the amount of milk produced during the first lactation. Heifers not fed balanced nutritional diets before freshening will not produce at an optimum level since they do not have the body reserves to maintain peak production. Likewise, a heifer that freshmen very heavy will not produce as much as she should because she is too heavy. There must be a break-even point at which a heifer should weigh to optimize first lactation production.

A research project was conducted by Keown and Everett at Cornell University where the weight of heifer freshmen were compared with first lactation production. The 618,366 heifers, from New York and New England, had their tape measure body weights recorded on the first test date after freshening. These measurements were recorded to the nearest 10 lb. These weights were recorded after freshening so the effect of the weight of the calf is not included.

Table I lists the average weight at first test date after freshening and the increase in milk production associated with each 50 lb. increase in weight. Those heifers that freshmen from 901-950 lb. produce 432 lbs. more milk than those that freshmen at 900 lbs. or less. Likewise, a heifer that freshmen between 1201 and 1250 lbs. of weight produces 1777 lbs. more milk than one freshmen at less than 900 lbs.

The difference in milk production for each 50 lb. difference in body weight increases until a heifer is between 1201-1250 lbs. After the 1250 lb. point, the increases are not as great. At weights beyond 1450 lbs., milk production actually begins to decrease.

A producer raising Holstein heifers should aim for a weight at first test day of between 1200-1250 lbs. if milk production is to be maximized. Raising heifers that weigh more than this cannot be justified in the extra milk production produced for the 50 lb. increase in body weight.

In our study the records were all adjusted for the herd year in which the cow freshmen to compensate for any differences in yearly herd practices. These records were also adjusted for the age and month of freshmen so the weight of freshmen influence could be dealt with separately. In fact, additional analysis of the data showed that the weight at which a heifer freshmen has more influence on the milk produced than the age and month of freshmen. Given this information, a producer should breed Holstein heifers by weight so they weigh, after freshmen, near 1200 lbs.

A heifer being fed a good, balanced ration should be expected to gain 1.5 lbs. daily during the gestation period. Therefore, a good rule of thumb would be to breed your Holstein heifers between 800 and 850 lbs. of weight. This, coupled with a good feeding program, should see your Holstein heifers freshmen near the 1200-1250 lb. range.
Custom Rearing Guidelines

The production presented in Table I are becoming more important as herd size increases in the United States and profit margins are squeezed. With the ever-expanding use of custom growers for raising heifers, this table should be used as a guide to be certain that the growers are properly feeding and managing heifers to enter the milking herd at optimum condition. The extra milk produced by raising heifers properly can make a significant difference in the first lactation, thereby increasing net returns and profit to the dairy operation. Why not add the information presented in this table to your incentive program when raising heifers? A deduct could be included if they do not meet these guidelines.

Conclusions

Given the cost of grain, each producer needs to calculate the cost benefit ratio of raising heifers to freshen at different weights. Regardless of the cost, the initial rearing of a heifer to an acceptable weight is money well invested. A stunted heifer will never reach her maximum potential. Proper feeding, housing and veterinary care of heifers is an essential part of any dairy enterprise. Research shows that Holstein heifers that give the most milk freshen between 1200-1250 lbs. of weight.

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Revised October 2005