

# Can I Reduce Costs by ‘Limit Feeding’ Heifers?

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A dairy farm that replaces 30% of its lactating herd annually with heifers that calve at 24 months of age needs approximately 67 replacements per 100 cows to maintain a stable herd size. Assuming typical diets for the various growth stages, the cost to feed a heifer from birth until calving is \$1,000 to 1,350. These costs assume that a good quality milk replacer was used and that stored forages such as hay and silage, rather than pasture, were fed. The heifer rearing strategy used by most dairy farmers in the Midwest consists of feeding weaned heifers a high quality, concentrate based diet until they are 4 to 6 months old and then switching to a high forage diet with limited concentrate. This diet is fed for *ad libitum* consumption and the amount of concentrate is altered to maintain the desired rate of growth (approximately 1.8 lb/day). Dry matter intake of Holstein heifers averaged over 5 to 24 months of age is about 18 lb/day.

An alternative method of raising heifers is to provide enough nutrients to meet their requirements and grow at 1.8 lb/day by feeding a limited amount of a nutrient dense diet, rather than allowing high intakes of less nutrient dense diets. Dry matter intake of limit-fed heifers is generally about 20% less (average about 14 lb/day) than intake by heifers fed conventional diets, but the diet must have more usable energy and protein per pound than a conventional diet. This means that the diet must be much higher in concentrate ingredients and lower in forage. These diets are typically 25 to 40% forage, with the remainder being corn, oilseed meal, and some inexpensive byproducts such as distillers grains and wheat middlings. Also, one of the reasons for limit feeding heifers when corn silage is the primary forage in the diet is to avoid heifers getting too fat. Some sample diets for limit feeding are available from Penn State University (see reference below).

With a limit feeding program, much more concentrate will be fed (approximately 3 to 5 lb/day more) and the daily cost of that concentrate will be substantially greater (\$0.25 to \$0.40/day more) than with a typical heifer raising system. When forage is very cheap (corn silage at \$40/ton and grass hay at \$100/ton) and concentrate costs are at high market prices (corn at \$6/bu and soybean meal at \$350/ton), feed costs for conventional and limit feeding are generally equal, or less for the conventional system. However, when forage is more realistically priced (corn silage at \$55/ton and grass hay at \$115/ton) and concentrates are priced closer to their historic norms (e.g., corn at \$3.50/bu), limit feeding may save as much as \$0.10/head/day.

A major factor in determining whether limit feeding will save money is the value you place on the forage. In general, if hay is less than about \$100/ton, limit feeding probably will not reduce feed costs. If heifers are pastured on land that has few or no alternative uses, then limit feeding a high concentrate diet will probably increase feed costs compared to utilizing the pasture.

Several factors other than feed costs must be considered before adopting limit feeding. To be successful, adequate feed bunk space is absolutely essential, and if additional facilities are needed to house heifers so that adequate bunk space is available, any savings in feed costs may be lost. More labor (and management time) may be needed to monitor growth of the animals to ensure adequate energy and protein is being provided, and for pushing up feed in the bunk so it can be reached by the animals (aggressive behavior at feeding may result in more feed pushed out of reach). Also, other changes in animal behavior may occur and should be monitored, e.g. increased bellowing prior to feeding, especially during the first week of switching to limit feeding. Additional information regarding managing limit-fed heifers is available from Penn State University (see reference below).



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**Bottom Line:** Providing a limited amount of a more nutrient dense diet (greater concentration of protein and energy) increases the cost per pound of diet, but because substantially fewer pounds are fed, feed costs may be reduced. However, before adopting a limit feeding regime for heifers, consider all the management factors involved.



**Reference:**

Precision Feeding Dairy Heifers: Strategies and Recommendations, Geoff Zanton and Jud Heinrichs, Penn State University,  
<http://extension.psu.edu/animals/dairy/nutrition/heifers/heifer-feeding-and-management/precision-feeding-dairy-heifers-strategies-and-recommendations>

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Additional DIBS are available on-line at <http://dairy.osu.edu>.

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