U.S. dairy producers continue to focus on calving heifers at an earlier age, but as with any goal, there’s still room for improvement.

According to the 2007 National Animal Health Monitoring System dairy survey, the average age at first calving in the U.S. dairy herd is 25.2 months. This is down slightly from 25.4 months in 2002 and six months better than the average age of 25.8 months in 1996.¹

Research shows time and again that calving heifers into the herd between 22 and 24 months of age provides multiple benefits to the dairy, including:

• Generating income sooner
• Producing greater lifetime milk yield to maximize profits
• Increasing the asset turnover ratio and financial efficiency of a dairy, because fewer replacements are needed to meet internal replacement needs²
• Generating greater economic returns. In a California study, heifers had the largest economic return when calving between 23 and 24.5 months of age.³

To achieve the goal of earlier calving, producers must manage heifers to reach breeding size sooner.

AGE IS JUST A NUMBER
Although age at breeding and calving are vitally important factors, the driver behind earlier calving is getting the animal to breeding size (height and weight) in a timely fashion.

The onset of puberty is not age-related, but size- and development-related. Puberty depends on a heifer’s plane of nutrition and average daily gain. Puberty, therefore, may be delayed or accelerated based on how heifers are fed and managed. Plane of nutrition or variation in feeding programs, along with levels of specific nutrients like protein and energy, can accelerate or decrease growth rates.

Body condition scoring (BCS) is a useful tool in determining how heifers are developing. Heifers should not be allowed to exceed a body condition score of 2.5 to 2.75 (on a five-point scale) from three months of age to puberty. Large scores may lead to fat deposition in the mammary gland. After puberty and up to the time of breeding, a BCS of 2.75 to 3.0 is desirable for optimal fertility. At calving a body condition score of 3.25 to 3.5 is acceptable; larger BCS can lead to fat deposits in the pelvic canal and potential problems at calving.⁴

FOCUS ON GROWTH
Nutrition advances, thanks to high-protein diets and improved management skills, enable producers to grow heifers more rapidly than previously possible—and have them reach puberty earlier, as well.

The key is to breed these larger animals at the optimum size so that you take maximum advantage of their faster growth and earlier entry into the herd.
For Holstein heifers, first estrous cycles normally occur at about 50% to 55% of mature weight, or generally between 550 to 650 pounds. In addition, Holstein heifers should be between 48 to 50 inches tall at the withers at breeding. (For breeding height recommendations based on percentiles for all breeds, visit “Monitoring Dairy Heifer Growth” from Iowa State University.)

Since breeding goals should be based on a percentage of an heifer’s mature body weight, as well as height, breeding decisions will vary by herd, depending on the average size of mature cattle.

To determine what’s normal in your herd, use third-lactation animals as the standard, since cows generally reach mature body weight and height by this time.

FOCUS ON SUCCESS
Don't guess on your heifer performance. Use scales, weight tapes, tape measures, hipometers or other measuring devices, as well as herd records, to ensure heifers get bred in a timely manner and calve sooner.

How heifers are managed plays a critical role in their success. Use these management recommendations to decrease age at first calving:

- **Keep your nutrition program on track.** Ensure heifer diets deliver proper levels of protein, which drives structural growth, not just weight gain.
- **Group heifers by size, not age.** Keep size of heifers as uniform as possible to minimize dominance at the feed bunk.
- **Avoid overcrowding.** Recommendations for young stock include providing at least 18 inches per head at the feed bunk, 200 square feet in the corral or pen and 20 square feet of shade per animal.  
- **Ensure good pen hygiene.** Clean pens regularly and avoid build ups of mud and manure.
- **Make healthy heifers a priority.** Set up and follow vaccination and heifer health protocols.

Finally, work with your management team, including your veterinarian and nutritionist, to assess performance and develop strategies to bring heifers into your herd sooner. Back in 2002, 10% of heifers calved at 30 months of age or later, and today we’ve made great improvements. By continuing to focus on nutrition, health and management, even greater improvements can be realized.