

DAIRY PIPELINE

**Genetic merit of AI bulls is tied to semen price.**

Most producer meetings or dairy publications today include something about estrus synchronization. Everybody wants help getting cows bred. Heat detection is tough in high producing herds housed primarily on concrete because the cows aren't very active. Timed AI is attractive because there are plenty of other uses for the labor that visual heat detection requires. Medication for estrus synchronization can run from \$12 to \$20 or more per cow. Unfortunately, too many producers get to the end of that investment and use inexpensive semen to breed the cow. Inexpensive doesn't necessarily mean \$10 semen here, but half of that or less in too many cases. Perhaps, if the protocol is new and untested on a farm, or if the cows themselves are problem breeders, lower cost semen for one or two groups is justified. As a routine practice, one has to wonder if synchronization is worth it when inferior bulls are used. Semen price and genetic merit aren't perfectly related, but they do tend to move together. The table below is from the February 2003 USDA genetic evaluations. Prices are "suggested retail", subject to negotiation, but are in line with what producers would pay AI suppliers.

Price per unit of semen	Number of Holstein bulls in this price range and above the 80 <sup>th</sup> percentile for Net Merit	Percent of all Holstein bulls in this price range that are above the 80 <sup>th</sup> percentile for Net Merit
\$40 and up	11	65%
\$30 to \$39	20	47%
\$25 to \$29	35	47%
\$20 to \$24	60	41%
\$15 to \$19	36	18%
Less than \$15	11	7%

The table shows the number of active AI Holstein bulls in the top 20% of their breed for Net Merit, an index that uses production, longevity, Somatic Cell Score, and type to predict lifetime economic merit. Of the 148 Holstein bulls with semen priced at \$15 or less, only 11 are in the top 20% for Net Merit, and they may not be available from a supplier or not suit a breeding program for other reasons. Not interested in using bulls that high up the Net Merit scale? Only 15 of the bulls in the last category are above the 70<sup>th</sup> percentile, and dropping standards to the 60<sup>th</sup> percentile adds just 11 more. Two thirds of the bulls priced below \$15 are in the bottom half of active AI bulls. Young sires currently in major AI sampling programs are a better bet for genetic improvement than bulls below the 50<sup>th</sup> percentile. Dairy cows have to get pregnant to be profitable and obviously, many dairy farmers are willing to go to considerable trouble to get them pregnant. Just keep in mind that pregnant is good for the cow, but pregnant to a good AI bull is good for the cow AND the herd in the years to come.

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**Grouping lactating dairy cows into two or more feeding groups can reduce output of nitrogen and phosphorus.** The trend over the last 10 to 15 years is for feeding one group of lactating dairy cows. The reasons are many but center around keeping feeding simple, cheap feeds, and herd size. Interestingly the recent trend has been for grouping of dry cows into two groups, far-off and close-up. When feeding one group of lactating dairy cows we tend to balance the ration for the higher producers in the group. This is with limitations because it is difficult to balance energy in rations for more than 100 lbs. of milk per cow per day. The high producing dairy cow will use body fat deposits to make up

any shortage. This is not the case with protein, so we sometimes feed high amounts for high producers resulting in overfeeding of lower producers. This directly results in more nitrogen being excreted in the urine and feces. The same is true for phosphorus except most is excreted in the feces. Phosphorus is many times over supplemented according to a recent Virginia survey and the 2001 NRC publication. Both nitrogen and phosphorus can be problems in the environment. Feeding two or more rations to lactating dairy cows will result in a better match of ration nutrient concentration and the cows' requirement resulting in less nitrogen and phosphorus being excreted. A cow will many times drop in production when switched from a high group ration to a low group ration. One suggestion is to not change nutrient density by more than 15%. This translates to 15.7% protein when a high group ration of 18.5% protein is fed. Early lactation cows should be kept on the high group ration for at least one to two months to achieve milk production potential. After this time they should be grouped by production considering reproductive status in some cases. Another way to consider ration formulation is to balance rations for 30% above average for one-group herds, 20% for each group of a two-group herd, and 10% for each group of a three-group herd. These numbers are based on lead factors we developed in the 1980's for computerized ration formulation. The more groups we have the more similar the production within each group and the more similar the nutrient requirements. As we develop nutrient management plans for dairy farms it may be advantageous to consider grouping the lactating cows in order to reduce nutrient excretion.

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### **\*\* Upcoming Activities\*\***

Dairy Technology and Conservation Tour, <i>Rockingham County</i>	June 19
Dairy Conservation Field Day <i>Cedar Springs Farm</i> , Madison Co.	July 22
Farm and Family Showcase <i>Kentland Farm</i> , Virginia Tech	Sept. 4-6

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