

DAIRY PIPELINE

Using fertility evaluations: ERCR and DPR.

Dairy farmers can use two different measures of fertility to begin to offset a trend towards lower fertility seen in many dairy herds. The first of these, Estimated Relative Conception Rate or **ERCR**, is an evaluation of the fertility of semen from a bull compared to other bulls that breed substantial numbers of cows. ERCR values for the 257 Holstein bulls evaluated in February 2003 ranged from -8 to +5%. These numbers are based on 70-day non-return to service rates from first service, and bulls are required to have at least 300 services before evaluations are published. ERCR's do indicate the value of semen to a dairy herd. A Virginia Tech study by Drs. Pecsok and McGilliard published in the *Journal of Dairy Science* in 1994 showed that a premium of \$2/unit of semen could be paid per one unit difference in ERCR score. For example, two bulls nearly equal for production, SCS, PL, etc. with ERCR's of +3 and 0 would differ by \$6 per unit in value of the semen to a producer. Since bulls are very rarely "nearly equal" for anything, ERCR's could also be used to flag bulls with a history of conception problems under field conditions. ERCR's of -4 and below are most likely to cause problems, as they are in the bottom 2.5% of the 257 Holsteins on current active sire lists. The second fertility evaluation is brand new, and applies to daughters of bulls. It is called "daughter pregnancy rate" or **DPR**, and is based on the probability of a pregnancy in a 21-day cycle in daughters of a bull. Differences between bulls for DPR are smaller than differences in ERCR, as 21-day pregnancy rates are much lower than 70-day non-return rates. The average DPR on the 547 active Holstein bulls with evaluations available in February 2003 was -0.24. DPR's ranged from -4.1 to 2.6. Extremely good bulls (top 2.5% of Holsteins) for DPR would have evaluations above 1.8, while the

poorest 2.5% would have evaluations below -2.3. DPR evaluations are based on days open, often (but not always) measured by difference in calving dates minus a standard gestation length. Heritability of DPR is 4%, so accuracy of evaluations will be low, especially for bulls with only first crop progeny available. DPR are useful, nonetheless. Dairy producers should begin to discriminate against bulls with low DPR values as reproductive performance of their future daughters is expected to be poorer than daughters of bulls with better DPR ratings. So - DPR is a sire selection tool, ERCR is a semen use or semen purchase tool, and both are valuable to dairy farmers. Producers may hear some criticism of both of these fertility evaluations, as fertility traits are lowly heritable and both ERCR and DPR will probably change for a bull as new information becomes available. The evaluation procedures will improve through more research, just as they have for production traits. However, as Dr. Phil Senger, former author of the AI column in *Hoard's Dairyman* reminded me recently, "Sooner is a lot better than perfect." The bottom line, though, is that we can change fertility through selection if we are patient and persistent.

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Consider these maximums and remember combinations when formulating rations. When feeding lactating dairy cows it is best to limit amounts of certain feeds. Reasons can be problems with palatability, high oil or fat content, imbalances of certain nutrients and lack of "effective" fiber to stimulate rumination. Knowing these restrictions can prevent problems from occurring. Also combinations of some of

these feeds can be a problem if the maximums are used with no regard to type and amount of nutrients that are provided. A good example is use of whole cottonseeds with soybeans. The maximum of each would result in excessive fat in the ration. Also some of these feeds have relatively high fiber levels but it is not “effective” fiber. A certain level of forage fiber should be maintained. This is where your nutritionist can be an asset in identifying optimal relationships with consideration for cost of the ration. Below is a list of some feeds used in Virginia and suggested maximums along with a cause for caution when feeding. Remember these are maximum amounts and not necessarily optimum amounts.

	% of concentrate	lbs/ cow/ day	reason for caution
Urea	1.5	.4	NPN source
Fish meal	3	1	palatability
Blood meal	3	1	palatability
Tallow	4	1.5	fat source
Molasses, dry	6	2	sugar content
Peanut skins	---	4	tannin content
Bakery waste	---	4	starch content
Soybean hulls	20	5	effective fiber
Wheat middlings	20	5	quality
Cottonseed hulls	20	5	energy content
Whole cottonseeds	---	7	oil content
Roasted soybeans, rolled	25	7	oil content
Brewers grains, dry	25	7	effective fiber
Distillers grains, dry	25	7	lysine content
Citrus pulp, dry	---	8	effective fiber
Corn gluten feed	30	10	degradable CP
Brewers grains, wet	---	30	effective fiber

**** Upcoming Activities****

Little All American Banquet & Show April 25-26
Virginia Tech

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