

Texas Dairy Matters

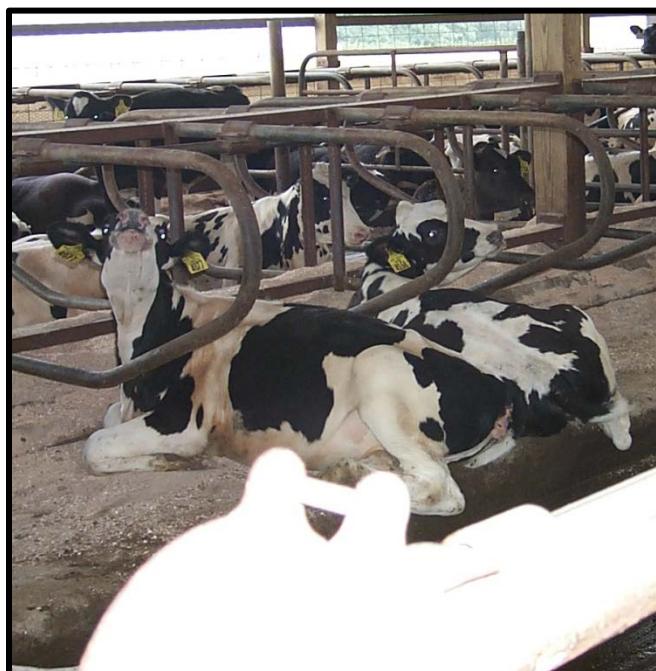
Higher Education Supporting the Industry

EVALUATING SEXED SEMEN FOR DAIRY HEIFERS

Kevin Lager, Ralph Bruno, Ellen Jordan, and Todd Bilby
Extension Dairy Team
Department of Animal Science
Texas A&M AgriLife Extension Service
The Texas A&M University System

The sex sorting of semen is a relatively new technology that has been commercially available to U.S. dairy producers since early 2006. The process of sorting semen by gender was developed in the late 1980's and has improved significantly over time. Today, most sexed semen is sorted so that 85 – 90% of the offspring are of the desired gender.

For dairy, sexed semen technology increases the chance of a heifer calf from about 50% with conventional semen to nearly 90% when sexed semen is used. Increasing the number of heifer calves born on the dairy allows a producer to rapidly expand the herd from within.



Since heifer calves tend to be smaller than bull calves, their delivery is usually easier. Thus, another benefit is fewer calving problems (dystocia).

Besides the increased cost of sexed semen, decreased conception risk (CR) prevents some producers from adopting this technology. Conception risk declines 12 to 20 % compared to conventional semen. Because of this undesirable feature, sexed semen has been primarily used and is only recommended for virgin heifers.

Producers must evaluate the economics of using sexed semen based on their herd information. To simplify comparisons,

assume all insemination costs except the price of sexed or conventional semen remain the same. First, determine the current CR and what percent of heifer calves is desired. Once this

Table 1 – Number of female offspring resulting from 100 artificial inseminations based on varying conception risk and percentage of female offspring expected information is known, the next step is to calculate how low the CR for sexed semen can be without compromising the number of heifers born. Typically this information can be obtained from dairy management software program. For example, on DairyComp 305, the command BREDSUM\CY retrieves the CR for virgin heifers. The command EVENTS FOR LACT=1\3 provides the percentage of heifers born.

	Female offspring (%)					
	50	70	80	85	90	95
25	13	18	20	21	23	24
30	15	21	24	26	27	29
35	18	25	28	30	32	33
40	20	28	32	34	36	38
45	23	32	36	38	41	43
55	28	39	44	47	50	52
60	30	42	48	51	54	57
65	33	46	52	55	59	62
70	35	49	56	60	63	67
75	38	53	60	64	68	71

With this information, you can then use Table 1 to estimate how low CR can be without decreasing the number of heifers born if sexed semen technology is adopted. For example, if the average CR (rows on Table 1) for virgin heifers is 60 % with 50 % female offspring (columns on table 1), every 100 inseminations is expected to yield 30 female offspring. If sexed semen results in 85 % female offspring, the lowest CR required to yield 30 females is 35 % (Table 1).

If you decide to adopt sexed semen for virgin heifers, some tips to maximize the CR include:

- Use the appropriate breeding gun for the straw size.
- Thaw straws according to supplier's directions, typically in a 95° F water bath for 45 seconds.
- Provide warm, draft-free semen thawing and handling environments.
- Warm all semen handling materials, such as guns and sheaths, prior to contacting straws.
- Assign only experienced technicians to breed with this product.
- Use only on heifers that are over 60 % of their mature weight by 14 months of age that are in good body condition.
- Inseminate heifers 8 to 12 hours after observed estrus (AM/PM rule).
- Breed based on observed estrus rather than at a timed insemination for best results.