

GROW From Within[®] with ABS Sorted Female Semen

What is gender sorted semen?

Gender sorted semen goes through a flow cytometry sorting process to sort X (female) from Y (male) bearing cells based on the gender preference of a dairy or beef producer. Sperm gender sorting procedures using the flow cytometer were first studied in U.S. government research labs in the 1970s. In 1990s, the first gender selected calf using this procedure was born and since then, researchers have been working to increase the efficiencies of the semen sorting technique. ABS is currently utilizing the flow cytometry technology to sort semen at the DeForest, Wisconsin, facilities. This opportunity will allow producers to select progeny gender and also allow producers to choose from a wide range of reliable ABS genetics.

How does the semen sorting take place?

The flow cytometer is able to detect a three to four percent difference in DNA content between male and female sperm. The first step in this procedure is to dilute sperm to a very low concentration and stain them with a fluorescent dye. The sample is then sent through the flow-cytometer at 60 mph under 40 to 60 psi of pressure. As sperm pass through the internal laser beam, the fluorescent dye is excited. Because of the larger X chromosome, female sperm emit slightly more fluorescence than Y chromosome bearing male sperm. Detectors measure the amount of fluorescence and assign positive or negative charges to each droplet containing a single sperm. Charged deflector plates then split the single stream into three streams: positively charged particles containing one sex go one way, negatively charged particles containing the opposite sex go the other, while uncharged droplets containing multiple sperm or sperm with unidentified sex pass straight through.

What percent heifers can I expect using ABS Sorted Female semen?

Based on thousands of observations using sorted flow cytometry semen, about 85 to 90 percent of the calves will be female. Fewer calving observations will result in greater variation of the heifer ratio. As additional calves are born, ABS will update the statistics for ABS Sorted Female product.

Is the ABS Sorted Female semen packaged differently?

All Sorted Female semen has a 529 stud code versus the traditional 29 so that it is not confused with the (standard) non-gender sorted product. It is packaged in a red 1/4 ml straw. It is clearly identifiable by the red color and 529 stud code to ensure proper identification and handling.

Can this process affect my ability to get animals bred?

This process may affect your ability to get animals bred. Conception rates are approximately 75 to 90 percent of conventional semen. Sorted Female semen is recommended for use on virgin heifers only.

Will there be any difference in Calving Ease (CE)?

According to USDA-AIPL calving ease data on 1.6 million first calvings using non-sorted semen, the overall calving ease is 7.24 percent. When a bull calf resulted CE was 9.81 percent and when a heifer calf resulted it was 4.68 percent. Although we expect the spread and differences to be the same, it will be some time before enough comparisons are available on gender sorted semen from highly reliable proven sires to accurately determine the calving ease difference between male and female calves. A majority of the sires offered are superior for calving ease.

Will ABS Sorted Male semen also be available?

Sorted Female semen is now available. Sorted Male semen from the ABS beef line-up will be available late 2006.

Are there differences in fertility, handling and use of ABS Sorted Female semen?

There are fundamental differences between sorted semen and conventional semen. The sorting process discards unknown cells and those of the undesired gender. Due to this process, there are fewer live sperm cells available to be packaged in each straw compared to conventional semen. The lower sperm concentration does affect semen fertility. The sorting process may also compromise the ability of the sperm cells to impregnate animals. Thus, it is essential to follow recommended protocols to maximize results. ABS has several basic use recommendations to achieve the highest possible results:

- Use only on well grown, well managed virgin heifers that are at least 13 months old
- Use on virgin heifers 12 hours after observed heats
- Carefully follow the published guidelines for semen thawing and handling
- Handle the 1/4 ml Sorted Female straws with the same care as traditional 1/2 ml straws
- While thawing and handling standards are identical, the margin for error is greatly reduced
- Whenever possible, highly experienced trained ABS Professionals should be utilized
- Even with proper care and handling, conception rates will average 75 to 90 percent of conventional semen

Why does ABS Sorted Female semen cost more than non-sorted conventional semen?

Inefficiencies in the sorting process (only 20% of the cells are utilized) including the discarding of non-gender sorted cells and supply-demand factors impact pricing on all products.

How will you benefit from ABS Sorted Female semen?

- **Control Replacement Costs**
- **Increase Heifers from Within**
- **Reduce Disease Risk**
- **Improve Your Business Management**

