Maximise the return on your investment in sexed semen

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Sexed semen has many uses in today's dairy industry – improving herd quality, expanding the influence of a herd's best animals more quickly, creating internal herd growth and allowing for more voluntary culling. The dairy producers who are truly realising these benefits in their herds are those that pay close attention to the details when incorporating a sexed product into their breeding program.

In order to experience greater success with sexed semen, it is important to understand that sexed semen goes through a strenuous production process. The strenuous process of sorting male and female sperm results in semen that is less fertile than conventional semen, hence the importance of paying attention to all the details within a breeding program.

In most herds, the improved chance of producing a calf of the desired sex offsets the 12-15% lower fertility levels of sexed semen compared to conventional semen.

Most sexed semen products available around the globe produce 90% of the desired sex.

However, in addition to a 90% sexed product, Cooperative Resources International (CRI) also offers a 75% sexed semen product – CRI GenChoice 75 – that has a 75% chance of producing a heifer calf.

Raise the canister just high enough to grasp the top of the cane with tweezers.

Thaw the straw of semen at 35°C for at least 45 seconds.

The 75% sexed product is generally available on higher genetic merit sires and is marketed at a more favourable price than the 90% sexed product. Expect similar conception rates between 90% and 75% sexed products.

For best results

To maximise the return on investment in sexed semen, it is important to first monitor the status of a herd's reproductive program.

For instance, if a herd is not already achieving average to above average conception results with conventional semen, then the producer should take time to analyse and identify changes that can help increase overall conception rates.

Make the necessary changes to improve average conception results before incorporating sexed semen.

Use semen selectively

Sexed semen should be selectively used on the most fertile animals in a herd. Selective use means breeding specific females with sexed semen, rather than all animals in the group. The goal is to maximise investment by breeding those females most likely to conceive. Selective use can apply to heifers or cows.

Some considerations are to breed with sexed semen for only the first service or only the first and second services; use sexed semen on animals with an ideal body condition; use sexed semen if a female is sired by a high Daughter Pregnancy Rate bull; or use sexed semen on younger cows that previously calved without any problems and conceived on their first service as a heifer.

Know the signs of heat

Improving heat detection is a good way to increase return on investment since the best sexed semen conception results are seen in young, healthy animals bred after being observed in standing heat. Accurate heat detection and a thorough understanding of the signs of heat are important to this success.

Most cows and heifers show behavioural changes beginning in the early stages of oestrus and continuing throughout the entire period of heat.

The primary sign of heat is when the animal stands and allows herself to be mounted by herd mates. However, there are other indicators, called secondary signs of heat.

Some secondary signs of heat include riding other cows, bellowing or bawling, displaying signs of nervousness, sniffing the vulva or urine of other animals, having a pink and swollen vulva with a clear mucous discharge, having a rough tailhead, chin rubbing, or they seem to be searching for something.

Often, deciding if a female is a good choice for sexed semen is determined by the strength of her heat.

The inseminator or heat detector can tell the strength of heat through the animal's reproductive tone or through the use of an effective heat detection aid. If an activity system is used for heat detection, for best results use sexed semen on those females with very high activity levels.

Heat detect accurately

The majority of mounts last for six to eight seconds. This makes it difficult for 'casual' observers, or those individuals completing other chores such as feeding, scraping alleys

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and moving cows, to observe all mounts. In addition, these casual observers are often not in a location to correctly identify the cow in heat. Misidentifying the cow in heat is just as bad as not seeing the heat in the first place.

The individuals in charge of heat detection need to dedicate time specifically to the task. They should position themselves in locations with good footing so animals will gather to show mounting activity. The observer should be positioned so the animals' identification markers are easy to read.

Heat detection should occur two to three times per day for at least 20 minutes each time.

Detect at the right time

Research indicates more than 70% of mounting activity takes place between 7pm and 7am. Factors such as high temperature, humidity, wind and rain tend to inhibit the expression of heat during midday hours.

Therefore, out of the two or three times heat detection is conducted each day, one should be in the late evening hours and one in the early morning hours.

This ensures heat detection takes place at times when cows are most likely to show signs of heat.

Handle semen carefully

Sexed semen is fragile and requires extreme care when handling. Therefore, another way to ensure the best results when using sexed semen is to use correct semen handling techniques.

Inseminators should review the semen handling checklist included below to ensure they are doing everything they can to protect the semen straw and its contents:

- Store the liquid nitrogen tank in a location that allows you to see clearly into the neck tube and is dust free and dry.
- Measure liquid nitrogen weekly; level should not drop below 7.6cm.
- Maintain an accurate semen inventory to lessen the risk of semen exposure.
- Raise the canister just high enough to grasp the top of the cane with tweezers – 12cm from the top of the tank.
- To maintain semen quality, do not allow the canister or cane to remain in the raised portion in the neck tube for more than 10 seconds.
- Place the straw immediately in a warm water bath, at a temperature of 35°C for a minimum of 45 seconds.
- Semen should be placed into the cow as quickly as possible (within 15 minutes after the semen is removed from the tank).
- The straw should be handled by the tweezers, not the fingers.
- To protect the thawed semen, place the insemination straw into a folded paper towel.
- Dry the straw and check for proper sire identification before loading the gun. Load only one gun at a time.
- Prepare removal of the sheath through the resealable end of the sheath package.
- Warm the gun prior to placing the insemination straw inside.
- After the insemination straw is loaded into the insemination gun, make a clean, straight cut across the straw just below the crimp.
- Wipe the cutting edge of the scissors with a paper towel, to prevent future straw contamination.
- Place the sheath over the insemination gun, seat the straw in the sheath tip and secure it into place.
- Prime the insemination gun by pushing the plunger until semen is moved to the end of the sheath.
- Place the loaded insemination gun in a clean plastic glove. Then place it inside your clothing to transport to the cow.

Place the gun inside clothing to warm it before inserting the thawed semen.

Pay attention to detail

Paying close attention to the details of a breeding program is the surest way to realise success with a sexed product.

Start with a strong reproductive program, heat detect correctly, breed selectively, and handle semen correctly to maximise the return on investment in sexed semen and achieve a higher profit potential. ■

Case study:

With a successful reproductive program already in place, Mike Verhasselt of Verhasselt Dairy Farm in Kaukauna, Wisconsin, USA, has utilised CRI sexed semen for genetic improvement since it became available.

"We understand producing heifer calves from our current heifers is a great way to speed up the process of increasing genetic gain," Mike told International Dairy Topics.