Artificial Insemination with Frozen-Thawed Semen

Over the last 15 years members of the Select Breeders Service Network of Affiliated Laboratories have collected data and published scientific papers that have allowed the equine breeding industry to benefit from its experience on many aspects of the use of cryopreserved semen.

Dr. Sandro Barbacini
SBS Italia

From its establishment in 1987, Select Breeders Services has worked diligently to promote the use of frozen semen through the collection of clinical data that could increase knowledge in the application of this method of breeding. Indeed, one of SBS’s major concerns has always been to give its clients as much reliable information as possible to allow them to better market or use this reproductive technique. The fact that the International Network of SBS Affiliate Laboratories includes some of the most prestigious equine reproductive centers certainly made this task easier. Over the last 15 years the SBS management created a program with a goal to collect field data on mares inseminated with frozen-thawed semen to better understand the real potential of this reproductive technique. Data collected over this period of time has been presented by SBS members in scientific papers or as invited lectures at international meetings. This article will summarize some of the conclusions from these studies.

EVA

Erin Bishop, MS
Select Breeders Southwest

Equine Viral Arteritis (EVA) is primarily a respiratory-borne viral disease of equids which is frequently though not exclusively transmitted through direct or indirect contact with the nasal discharges of acutely infected animals. Clinical signs of the disease can include: depression, loss of appetite, elevated temperature, as well as dependent edema, especially of the lower limbs, mammary glands, scrotum, sheath, and around the eye. Infected animals may appear lethargic, exhibit stiffness in movement, a nasal discharge, “pink eye” and a possible skin rash.

Over the years data has been collected in many countries to determine whether the causal agent, equine arteritis virus (EAV), is present in their respective equine populations. Evidence of infection has been reported from very many of them with the notable exception of Iceland and Japan. EVA was first recorded in the United States following an outbreak near Bucyrus, Ohio in 1953. However, for over 30 years, the disease caused little concern among many horse breeders until 1984, when an extensive occurrence took place in Kentucky that involved 41 Thoroughbred breeding farms. Since 1985, the states of Kentucky and New York mandate annual vaccination of all Thoroughbred breeding stallions against EVA.

Historically, the highest rates of infection have
Fertility of frozen-thawed semen

Many reports published by SBS members taking into consideration field data collected since 1994 clearly demonstrate that good fertility results can be achieved using frozen semen. It was shown that pregnancy rates of 45-50% per cycle and 75-80% per season can be achieved when a mare is inseminated with good quality frozen-thawed semen.

Impact of Mare’s Reproductive Status on Fertility

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Maiden mares are generally considered to be of equal fertility as foaling mares however in these studies, maiden mares had lower fertility than foaling mares. A possible explanation for this discrepancy was that most of the maiden mares involved in these field trials were Warmblood Sporthorse mares. It is well known that Warmblood mares tend to stay in training and competition longer than Thoroughbred, Standardbred or Quarter Horse mares, resulting in a greater number of “old maidens” in this breed. Older maiden mares have long been reported to be difficult to get in foal and this data supports that theory.

There are many anecdotal reports within the breeding industry that suggest barren mares are poor candidates for artificial insemination with frozen-thawed semen. A retrospective study conducted by SBSItalia on 285 barren mares inseminated in Northern Italy reported per cycle and seasonal pregnancy rates of 37% and 71%, respectively when these mares are bred with frozen semen. This study demonstrates that, although fertility is lower than other categories, barren mares can be bred successfully with frozen semen.

It is well known that fertility decreases in older geriatric mares when fresh semen or natural mating is used. Data published by SBS in 2005 and 2007 reported no significant effect of mare age on pregnancy rates with frozen semen for mares aged 3 to 16 years. A sharp decline in fertility however was observed for all mares older than 16 years of age included in these studies.
Time of Insemination and Effect of Sperm Number and Frequency of Insemination

It is generally recommended that frozen stallion semen be inseminated within 12 hours prior to, or up to 6 hours post-ovulation. The presumed shorted life-span for frozen-thawed stallion spermatozoa in the mare reproductive tract combined with the "by the dose, no guarantee" system of marketing semen has led many veterinarians to the practice of 3 to 4 times per day examinations in an attempt of inseminating the mare with a single dose of semen during the peri-ovulatory period. This usually requires that mares are boarded at a clinic or that late night farm calls must be made by the practitioner to insure that the post-ovulation insemination is performed within the critical 6 hour window after ovulation. Stallion owners who sell semen by the dose for hundreds or even thousands of dollars or euros are forcing the mare owners to utilize this type of protocol because the cost of the veterinary care is less than the cost of the additional semen required to inseminate a mare more than once per cycle. However, many stallion owners provide multiple doses per cycle and are paid per pregnancy; in this case using frozen semen is just another mechanism to achieve a pregnancy.

SBS showed that one insemination post-ovulation after 3-4 examinations per cycle can generate good fertility results. In fact data were collected in Italy over a four year period (1994-1997) from 559 Warmblood mares that were inseminated with a single dose of frozen-thawed semen within a 6 hour pre- or a 6 hour post-ovulation period and pregnancy rates of 43% per cycle and a 77% overall were accomplished.

Nevertheless, expanded use of equine frozen-thawed semen is dependent upon simplified breeding strategies. For this reason Select Breeders Service studied a timed insemination protocol for cost-effective management of mares inseminated with frozen semen. This protocol involves daily ultrasonographic examinations during oestrus, induction of ovulation using hCG or desolrelin following detection of a >35mm follicle and insemination at 24 and 40 hours after the ovulatory agent injection. Using this insemination schedule, mares that ovulate 18-52 hours after administration of hCG or desolrelin will have spermatozoa deposited in the mare’s reproductive tract within 12 hours prior to ovulation or within 6 hours after ovulation or both. Two studies published in 2003 and 2005 reported fertility results for mares inseminated with this protocol. The 2003 paper, a controlled study conducted by Colorado State University workers in collaboration with the Italian SBS laboratory clearly showed that two inseminations timed to occur before and after ovulation yield comparable pregnancy rates to a single post-ovulation insemination (76% vs. 71%). The main SBS laboratory based in Maryland examined retrospectively two data sets collected during the 2002 and 2003 breeding seasons and reported, in a paper published in 2005, similar pregnancy rates for mares inseminated once or multiple times in a given cycle (51.5% versus 51.7% for 2002 and 47.1% versus 46.1% for 2003). These data support the concept that two inseminations timed to occur before and after ovulation yield comparable pregnancy rates to a single post-ovulation insemination. In 2005, the Italian SBS laboratory reported excellent fertility obtained using the timed insemination protocol even when the insemination dose was reduced from 800 million to 400 million total sperm per insemination. A total of 193 cycles from mares highly selected for fertility were used and per cycle pregnancy rates of 61 and 69% for mares inseminated with 400 million and 800 million sperm per AI were obtained. Based on all these data published by SBS members on the use of multiple inseminations for breeding mares with frozen-thawed semen, it is clear that a two-dose timed insemination protocol allows a practitioner to examine mares once daily during normal hours without compromising fertility. With this protocol, mare management is very similar to what is generally used for cooled semen. Use of multiple inseminations per cycle may however not be appropriate for all breeding situations.

For example, mares that are susceptible to post-breeding endometritis such as older or barren mares may require a more intense management scheme in order to minimise invasion of the susceptible uterus.

Post-Al Fluid Accumulation

Post-breeding uterine fluid is the result of a normal physiological inflammatory process that clears the uterus of foreign material such as excess spermatozoa, seminal plasma, bacteria and debris introduced during mating. Persistent post-breeding uterine fluid accumulation has been associated with a decrease in fertility after natural mating or artificial insemination. Normal mares are able to expel this uterine fluid quickly, whereas susceptible mares accumulate fluid in their uterine lumen for more than 12 hours after breeding or insemination. Many practitioners believe that insemination with frozen-thawed semen leads to greater post-insemination fluid accumulation than insemination with fresh or cooled semen or after natural mating. In the retrospective study published in 2006, members of the SBS Affiliate Laboratories reported the incidence of post-breeding fluid accumulation to be 23% for 536 mare cycles bred with frozen semen. This incidence was no greater than that observed for mares bred with cooled semen (32%, 272 mare cycles). In 2001 a study conducted in collaboration between Elaine Watson’s group at the University of Edinburgh (Scotland) and the SBS Italian laboratory reported a post-breeding fluid accumulation rate of 16% in mares inseminated with frozen-thawed semen. This is identical to that reported for natural mating in a study conducted by Kentucky researchers in 1998. Finally, it has been suggested that inseminating twice during the cycle with frozen-thawed semen may result in a higher incidence of post-breeding endometritis. In 2003, researchers from Colorado State University in collaboration with the SBS Italy laboratory demonstrated that performing two inseminations per oestrus with cryopreserved semen did not increase the incidence of this pathology.
Introducing our newest Select Breeders Affiliate Laboratory…

The Four Sixes Ranch

Glenn Blodgett
Four Sixes Ranch

Covering more than 300,000 acres, The Four Sixes Ranch in Guthrie, Texas, was founded in 1870 by Samuel Burk Burnett. The ranch became known for its outstanding cattle and is still an active working cattle ranch, running a herd of 7,000 mother cows. It didn’t take long for the Four Sixes to earn respect for its top cow horses as well. Hundreds of great team roping horses come from the 6666 brand, many crossed to the Four Sixes’ industry-leading race stallions. The Four Sixes’ Performance Quarter Horses have included sires like Joe Hancock, Hollywood Gold, Grey Badger II and Tanquery Gin. Top sires in the race-bred lineup have included Dash For Cash, Special Effort and Streakin Six. The Four Sixes offers frozen semen from most of its stallions to several continents, routinely keeping frozen semen available to Europe, Australia, New Zealand and South America. For more information on the Four Sixes Ranch go to www.6666ranch.com.

Since 1982 Dr. Glenn Blodgett has managed the Four Sixes horse division. The state of the art horse breeding and veterinary facility accommodates the ranch’s 20 stallions and breeds >1,200 mares annually. The laboratory is equipped with all of the latest technology such as a Hamilton-Thorne IVOS computerized semen analyzer, controlled rate cell freezer, Nucleocounter fluorescent sperm counting device and all other equipment required for providing state of the art semen processing. In addition to on-site breeding and mare management, other reproductive services offered by Four Sixes Ranch include cooled and frozen semen, embryo transfer and Sixes Direct, a cooled transported semen courier service that serves the Aubrey/Pilot Point and Weatherford areas of North Texas. Through its affiliation with SBS, The Four Sixes will provide semen freezing services for the stallions standing at the ranch in Guthrie as well as for stallions in the immediate surrounding area.

Contact information:  
Dr. Glenn Blodgett  
(806) 596-4424  
gb@6666ranch.com  

Four Sixes Ranch  
1102 Dash for Cash Rd,  
Guthrie, Texas 79236;  
www.6666ranch.com

SBS Ireland moves to Somerton Equine

A new stallion centre is under construction at Somerton Equine Hospital, Friarstown Kildare, Co Kildare, Ireland. The complex will become SBS Ireland’s new base. Stallion quarters include a central five, large stable barn and a completely separate two stable isolation unit. Collection area and laboratory facilities will be housed in a second barn, adjacent to the stallion quarters. Stallion turn out area includes a surface of 5 acres of fenced grassland. A lunging ring has recently been completed outside the stallion centre perimeter and the construction of an outdoor arena should take place next year. The stallion centre represents the second recent extension of Somerton Equine Hospital for dedicated equine reproductive work. A new “repro-barn” was built shortly after Dr.’s Stefania Bucca and Andrea Carli, formerly XY Equine Veterinary Services, joined the Hospital Staff and has been fully operational since May. Built in Kildare, heart of the Irish Thoroughbred industry, Somerton Equine Hospital offers reproductive routine work and consultancy to a number of Thoroughbred farms and, quite uniquely, a wide variety of assisted reproductive technologies to the sport horse breeders. The reproductive services available range from conception to foaling, including mare sub-fertility investigation, availing of full laboratory back up, hysteroscopy and Doppler ultrasound; artificial insemination with fresh, chilled or frozen semen, by conventional, deep or hysteroscopic techniques; embryo-transfer and embryo vitrification; fetal sexing, identification of the high risk pregnancy and fetal monitoring. For stallion owners, fertility assessment, semen freezing and storage are available through SBS affiliation. Routine stallion collection and semen evaluation and packaging for shipping are also available throughout the year.

Somerton Equine Hospital offers 24hrs surgical service for emergency and routine procedures, through its advanced surgical facilities with two state of the art operating theatres. Ambulatory practice, internal medicine, intensive care, lameness investigation and neonatology are amongst the other services provided.
EVA

continued from page 1

been found in the Standardbred and Warmblood breeds. A study carried out by the Centers for Epidemiology and Animal Health in 1998 found the seroprevalence in the Quarter Horse breed was only 0.6%, confirming that the breed was highly susceptible to potential future exposure to the virus. That became a reality in 2006 when four Quarter Horse stallions on a breeding facility in New Mexico became infected with EVA. As a result of cooled semen shipments from one of these stallions and the interstate transport of mares to and from the infected premise, the disease spread to 10 states with the outbreak lasting several months.

If an outbreak of EVA occurs, the economic impact can be considerable. Although primarily regarded as a respiratory disease, EAV can result in widespread abortion in susceptible pregnant mares. Equine arteritis virus can set up a testosterone dependent carrier state in the infected stallion localizing in the secondary sex glands of the reproductive tract. The virus is shed constantly in the semen of such individuals and can infect mares bred with this semen unless they have been previously vaccinated or have already naturally acquired immunity from prior exposure to the virus. It is possible for some stallions to eventually stop shedding the virus in their semen. However, many stallions never cease shedding the virus and can remain carriers for life. If a stallion stops shedding the virus, there is no evidence to date to indicate that he will resume shedding at a later time.

There are only two commercial vaccines available for EVA, both manufactured by Fort Dodge Animal Health. One vaccine, Arvac®, which is available in the United States and Canada, is a modified live virus product. The other vaccine, Artervac®, is an inactivated virus vaccine which is only licensed for use in certain countries in Europe.

It is essential that a blood sample is obtained prior to vaccinating a stallion against EVA to confirm that the animal does not have antibodies to EAV prior to vaccination. The recommended protocol is:

• Collect blood from the stallion to be vaccinated and submit to a USDA approved laboratory for serological testing for EVA.
• Upon receipt of a negative test result a further blood sample should be drawn and submitted for testing (recommended to pull several tubes) at the time the stallion is vaccinated against EVA.
• An annual booster is recommended.

This protocol is highly recommended so there is proof the stallion did not become exposed to infection between the first sample and the date of vaccination. The same protocol can be used when vaccinating mares as well as young horses after 180 days of age.

In 2007, a Percheron stallion at the French National Stud was confirmed a carrier of EAV after his semen was shipped to breeding farms in five departments in France. The disease was confirmed on a total of 26 premises during that occurrence.

While EVA outbreaks can be devastating it is a very manageable disease and breeders should be diligent to discuss EVA with their veterinarian as part of an overall herd health management program. As this most recent example shows, it is not a question of if another outbreak of EVA will occur but a question of when.

Playin Stylish

1995 QH  Docs Stylish Oak – Playboys Mom

Playin Stylish passed away due to complications from an infection on August 24, 2007. During his career Playin Stylish was NCHA Horse of the Year; NCHA Superstakes Champion, Augusta Futurity Champion and earned $118,764.00 in the show pen. As a sire his offspring have earned more than $1.9 million which includes Playin Attraction (2007 Big Show Open Spectacular Champion; 2005 NRCHA Intermediate Open Futurity Champion and 2005 NRCHA Open Futurity Reserve Champion). Now the only option for breeding to Playin Stylish is with the use of frozen semen.

When the AQHA approved the use of frozen semen in 2001 Dr. Glenn Blodgett began utilizing the services of Select Breeders Southwest, Inc. to freeze semen from Playin Stylish as well as the other stallions at the 6666 Ranch. During the 2008 breeding season seventeen mares were bred with frozen semen from Playin Stylish. Eleven (65%) mares became pregnant or produced an embryo which was transferred to a recipient mare.

High Special

High Special is a 2008 colt by the Trekehner stallion Special Memories and out of a Friedensfurst mare. This handsome colt is the first foal by Special Memories born in Germany using semen frozen by SBS Maryland. High Special was invited to the Elite Foal Auction in Hanover, Germany, and tied for the second highest selling foal. The proud new owner is Burkhard Wahler who owns the famous stud farm, Klosterhof Medigen, which stands such influential stallions as Caprimond and Hohenstein.

Special Memories, an accomplished Grand Prix jumper like his sire Abdullah, is owned by Dorothy Rowland of Touchstone Valley Farm, in Upperco, MD. Both Special Memories’ and Abdullah’s semen was frozen by Select Breeders Services in Maryland. Dorothy and her daughter Jackie continue to manage Special Memories’ breedings and are very pleased with High Special and the “small, but exciting, first crop in Germany!”
Omega-3 Fatty Acids in Stallions

Dr. Ed Squires, PhD, ACT(hon)
Executive Director
Gluck Equine Research Center, University of Kentucky

The buzzword in human medicine and animal agriculture is omega-3 fatty acids. It is hard to find anyone who has not heard of the potential health benefits of omega-3 fatty acids and many people are routinely taking fish oil tablets as a source of omega-3 fatty acids. Unfortunately, the depth of knowledge pretty much stops at that point, since many people are unaware of the various types of omega fatty acids and sources of omega fatty acids.

What are omega fatty acids?
Omega fatty acids, most commonly characterized as omega-3s or omega 6s, are labeled by the number that corresponds to the position of the double bond in their molecular structure. Long-chain and short-chain are adjectives that refer to the number of carbons in the omega-3 fatty acid structure. Long-chain omega-3 fatty acids (LC-PUFAs) are the ones that are most important for animal breeding. Omega-6 fatty acids generally are contained in sunflower oil, safflower oil, corn oil and linseed oil. Most horse diets contain a high percentage of cereals, resulting in a high omega-6 to omega-3 ratio. The short-chain omega-3 fatty acids (16 and 18 carbons) come from linseed (flax) oil, soybean oil and canola oil. These are common additives in many of the horse feeds. Long-chain omega-3 fatty acids (22 carbons) come from fish oil or other marine sources, and algae.

High omega-6 to omega-3 fatty acid ratios in semen has been associated with reduced sperm quality and fertility. Thus, it is possible that typical equine diets could have a negative impact on the quality of stallion semen and tolerance of sperm to cooling and freezing. Phospholipids in mammalian sperm have a high proportion of LC-PUFA (C22), DHA being the most prominent. DHA (spelled docosahexaenoic acid) is a long-chain polyunsaturated omega-3 fatty acid found only in marine sources. Between and within species, differences in sperm survival rates after freezing and thawing may be partially related to the amount of long-chain PUFA in sperm. Numerous roles have been reported for LC-PUFAs, including membrane integrity, treatment of mild hypertension and cardiovascular disorders, diabetes, cancer, anti-inflammatory agent, and in autoimmune disorders. There also is evidence that ingesting omega-3 fatty acids may have some effect on learning behavior and vision development.

There is a considerable body of literature in other species regarding the effect of omega-3 fatty acids on increasing fertility and litter size in sows and enhancing fertility in boars, cockerels and men. In addition, some data indicates an improvement in embryo survival in cattle and swine and improved hatchability of eggs. Maldjian et al. (2003) reported on an increase in sperm output and improved semen quality in boars fed DHA.

It is estimated that 30% of stallions have sperm that do not withstand the rigors of cooling and/or freezing. Although numerous vitamins and other supplements have been evaluated for their effect on stallion sperm, none of these have been shown to be of any great benefit. Based on the data available in the boar, human and cockerel, studies were conducted in stallions to evaluate the effect of feeding a DHA-enriched nutriceutical on the quality of fresh, cooled and frozen semen.

Harris et al. (2005) assigned six stallions, paired by seminal characteristics, to one of two diets for 90 days: 1) non-supplemented, and 2) supplemented with 21.1 g of long-chain omega-3 fatty acids (DHA) per day. They determined the percent change in various parameters from the initial evaluation prior to treatment and that at the end of 90 days. Feeding DHA increased the percentage of morphologically normal sperm in fresh semen compared to controls. The percentage of progressively motile spermatozoa was increased in treated stallions at 48 hr after cooling and in frozen-thawed spermatozoa. In addition, the percentage of total progressively motile spermatozoa in the ejaculate was significantly increased in the 48-hr cooled semen samples. They concluded that DHA supplementation may have a positive influence on morphology, motility and daily sperm output.

A second study, Brinsko et al. (2005), contained eight stallions assigned to a 2 X 2 cross-over design, the treatments being control or DHA supplemented feed. The feeding trial duration was 14 weeks. Semen was collected twice in one day and then once the following day for evaluation. At the end of the 14 weeks, the stallions were given a 14-week clean-out period and then assigned once again to a 14-week treatment period, making sure each stallion was assigned to both a control and DHA-treated group. For stallions that had less than 40% progressive motility after 24 and 48 hr of cooling and storage, those fed DHA had a higher percentage of sperm motility at both 24 and 48 hr.

A third study was conducted at Colorado State University in 2006. Ten stallions were randomly assigned to a control or DHA-supplemented diet. Semen was collected and evaluated at the beginning and end of eight weeks of treatment. The treated stallions had a greater increase in the percentage of total motile spermatozoa per ejaculate in both fresh and 24-hr cooled semen.

Each of these three experiments showed some positive effect on either semen quality, morphology or sperm numbers. In general, the percentage of progressively motile sperm in cooled and frozen semen was increased in those stallions fed DHA. Furthermore, in some of the studies, the sperm concentration was increased and the percentage of morphologically normal sperm was increased by feeding DHA. In those stallions in which DHA was measured in the sperm and seminal plasma, levels were increased compared to controls.

It is thought that increasing DHA in sperm could increase membrane fluidity and decrease damage during cooling and freezing. It has been shown that omega-3 fatty acids are reduced during cryopreservation and may be the reason for the reduced motility in frozen-thawed semen. Future studies should include higher levels of vitamin E as an adjunct to DHA since sperm are more susceptible to lipid peroxidation when one increases the level of DHA.

This would appear to be a very fruitful area of investigation and, more than likely, numerous applications of feeding long-chain omega-3 fatty acids will be elucidated in the near future. Most likely the types of diets we feed stallions and mares also will be more closely evaluated.
Select Breeders Southwest, Inc. Expansion

Select Breeders Southwest, Inc. is pleased to announce the opening of their new state of the art laboratory. At over 1200 sq ft, four work stations and viewing into the breeding shed from the lab, the technical venue at SBSW has taken a giant step forward. Providing an efficient work flow was utmost in the floor plan and design. Technicians are not forced into other work areas or to move semen samples about the lab. The ultimate security of the SBS quality control standards was the challenge and the effect of this effort.

The breeding shed adjoins the lab with direct access from the AV prep area. A large viewing window allows lab personnel to know the status of stallions being collected and oversight for the safety of their colleagues. Closed circuit TV connects lab personnel with stallions being prepped for collection as well as arriving clients and trailers. The new adjoining storage and distribution building has direct access to the lab. Totally enclosed between the lab and storage facility is the mobile laboratory garage and prep area. Efficiency was the driving force in the overall layout.

We invite everyone to come by for a tour and visit.

Open Range
2001 QH Zippos Mr Goodbar - Leaguers Zipanna

During the 2008 breeding season Open Range was not able to be collected for cooled semen shipments. Due to muscle soreness and his passive nature it was more difficult for him to mount the phantom for collection. The owners decided to utilize frozen semen in order to allow the stallion time to recuperate.

Many mare owners had not bred with frozen semen and were skeptical about using it instead of cooled semen. However, according to the stallion manager, Randi Moreau-Sipiere, “After the high pregnancy results, the skeptics raved about using it and said they actually prefer the frozen to cooled.” She goes on to say, “...we are lucky to have such a high quality product to give them.”

Ninety mares were bred using frozen semen that was processed and stored at Select Breeders Southwest, Inc. Of the ninety mares bred we have pregnancy status for seventy-five mares. There are fifty-four mares (72%) due to foal in 2009 which were bred with frozen semen from Open Range.

Einstiens Revolution
2002 QH Great Resolve – Fly Flash Jac

Einstiens Revolution has accomplished something no other reining horse has ever done before in the history of the National Reining Horse Association (NRHA). He has reached $330,000 in NRHA Lifetime Earnings. The horse is owned by Christian and Rosi Wagner from Germany and Ruben Vandorp from the US. The owners have stood the stallion in the US for the breeding season where the stallion has bred a large book of mares with both cooled and frozen semen. Semen frozen by Select Breeders Southwest (Aubrey, TX) was also exported to Equine Services (SBS South Germany) where it was distributed throughout Europe resulting in many successful breedings. Thanks to an efficient frozen semen breeding program Einstiens Revolution was booked full in 2008 in both Europe and US markets.
SBS Vision

In 1982 as a graduate student at Colorado State University, I froze stallion semen for the first time for a commercial client. Since then I have held a firm belief that frozen semen and other practical efficient reproductive technologies could be beneficial to breeders dedicated to producing better quality horses.

Select Breeders Service was incorporated in 1987, dedicated to the responsible development of the equine frozen semen industry. Over the past 21 years SBS has grown tremendously thanks to the hard work of our incredibly dedicated team of professionals, the support of our customers and the unwavering commitment to a set of core values that guide all of our decisions.

Paul Loomis,
Founder, CEO

Company Purpose
To develop a lasting organization that has a significant positive influence on the horse industry and advances the science of equine reproduction so that breeders can realize the full benefits of technology.

Core Values and Beliefs
• We will conduct business with honesty and integrity at all costs.
• We are committed to quality in everything that we do.
• We hold the reputation of our people and our company as our greatest asset.
• We have a responsibility to our industry that all parties are treated fairly.
• We have a responsibility to educate our customers so that they may make informed decisions about the services we provide.