Equine Sperm Preparation
A Quality Booster
EquiPure™ is designed to increase the quality and viability of equine sperm. This is achieved by separating the sperm by density centrifugation prior to insemination, freezing, IVF or semen sexing. EquiPure™ not only eliminates a high proportion of the abnormal spermatozoa but also removes the source of reactive oxygen species, most bacteria and many viruses (EAV). This significantly increases the sperm survival and the fertilizing potential. Studies performed on the microbial aspects of semen storage for AI demonstrate that the addition of antibiotics to extenders is often not enough to eliminate the detrimental influence of bacteria on sperm motility, viability and fertility.

Purifies and Decontaminates
• Improves fertility rates, especially in sub-fertile stallions
• Removes bacteria and other unwanted components from raw ejaculates or inseminating doses
• Reduces DNA-fragmentation
• Improves freezeability of equine sperm (table).

<table>
<thead>
<tr>
<th>Stallion (n ejac)</th>
<th>% Fertility Frozen - Colloid (n)</th>
<th>% Fertility Frozen + Colloid (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (2)</td>
<td>12.5 (1/8)</td>
<td>50 (4/8)</td>
</tr>
<tr>
<td>2 (2)</td>
<td>14.2 (1/7)</td>
<td>42.8 (3/7)</td>
</tr>
<tr>
<td>3 (5)</td>
<td>0 (0/5)</td>
<td>100 (2/20)</td>
</tr>
<tr>
<td>TOTAL n= 9</td>
<td>10 (2/20)</td>
<td>52.9 (9/17)</td>
</tr>
</tbody>
</table>

Juan C. Samper, AAEP-meeting 2010

REFERENCES
How to improve the freezability and fertility of stallion semen using silanated silica-particle solution (EquiPure™) Juan C. Samper, AAEP-meeting 2010.


Concentrator of Equine Semen
SpermFilter® is made up by a hydrophilic synthetic membrane and efficiently concentrates stallion sperm.

Preparation of Semen for Cryopreservation
Concentration of stallion sperm is often needed for the sperm cryopreservation procedures. Cushioned centrifugation is the most common procedure used, but this process can cause deleterious effects, including reduction in sperm quality as well as loss of sperm numbers and agglutination. Low concentration samples are often low quality samples and are more prone to agglutinate. SpermFilter® is a more suitable option for these samples.

EQUIPURE™ and SPERM FILTER®
Concentrating the sperm prior to EquiPure™ treatment is needed for samples with low sperm concentration. SpermFilter® concentrates and is ideal in combination with EquiPure™ which purifies.

• Re-usable after washing- up to 10 times
• Quick and simple - one step
• No additional equipment needed

REFERENCES

Comparison between centrifugation and filtration process to concentrate stallion sperm before cooling, Neto, C et al. School of Vet med and Animal Sci, Sao Paulo State University, Brazil.

For Fresh and Cooled Stallion Semen
BotuSemen® is the result of several years’ work by Brazilian researchers to provide the equine industry with an economical yet, first class extender. In addition to the combination of sugar and protein sources, BotuSemen® contains important amino-acids that help the sperm tolerate the cooling process better than other extenders. BotuSemen® also has an ideal combination of antibiotics that has no adverse effects on sperm or fertility.

Longer Storage Time and Fertility
BotuSemen® has been compared with other commercial semen extenders and has the same or better sperm longevity and viability. Thousands of mares are inseminated every year with transported fresh or cooled sperm using Botu-Semen®. When sperm are diluted to the right concentration, they can be stored for 48-72 hrs without losing their fertilizing capacity.

Dry powder – increases stability
It is important to understand that the break down process of antibiotics begins as soon as they are added to wet solutions. Supplying them in dry form ensures their stability until use.

Easy to Use
BotuSemen® is available in 100mL or 400 mL sizes. The optimal sperm concentration of non-centrifuged semen extended in BotuSemen® is 25 to 50 million sperm per mL. If initial concentration is too low, concentrate with SpermFilter or EquiPure™ before diluting with BotuSemen®.

Higher pregnancy rates
In a field trial performed in Sweden 2009-2012, the pregnancy rates increased by 15-20% when switching to BotuSemen® from another commonly used extender.

<table>
<thead>
<tr>
<th>Year</th>
<th>Inseminations (n)</th>
<th>Pregn. rate (%)</th>
<th>Extender used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>20</td>
<td>95</td>
<td>BotuSemen</td>
</tr>
<tr>
<td>2011</td>
<td>22</td>
<td>82</td>
<td>Commonly used extender</td>
</tr>
<tr>
<td>2010</td>
<td>20</td>
<td>50</td>
<td>Commonly used extender</td>
</tr>
<tr>
<td>2009</td>
<td>21</td>
<td>76</td>
<td>Commonly used extender</td>
</tr>
</tbody>
</table>

Field trial, Stall Phen, Gothenburg, Sweden, 2009-2012

EQUIPURE™ and BOTUSEMEN®
BotuSemen® is an ideal extender for semen to be processed with EquiPure™. Even sperm that are sensitive to shipping, perform well when centrifuged with EquiPure™ and resuspended in BotuSemen®.

REFERENCES
Comparison between two extenders to cool equine semen for 24 hours before freezing. Melo, C. et al. ; Vet. e Zootec. v.15, n.2, pp.325-331. 2008
A novel and innovative formulation
BotuCrio® is the result of years of research and fertility trials at the State University of São Paulo, Brazil, and multicentre field testing. This extender combines the optimal components to protect cells from the damage caused by freezing, and to protect their fertility after thawing.

Better Motility Parameters
BotuCrio® contains a low concentration of Glycerol, which in combination with one of several amides, results in better sperm integrity, sperm viability, better post-thaw total and progressive motility, as well as sperm velocity, compared to other commercially available freezing extenders.

Better Fertility Rates
Studies have indicated that stallion sperm frozen in BotuCrio® are more fertile compared with other extenders. These in vitro results have been confirmed in field experiments which shows higher pregnancy rates after insemination.

Less Inseminations per Pregnancy
The higher pregnancy rates achieved with semen frozen in BotuCrio® results in a higher pregnancy rate per cycle and less inseminations per pregnancy. This reduces the cost to breed a mare.

Well Proven in the Field
BotuCrio® is used for both good and poor freezing stallions in freezing centers in Australia, The Middle East, North and South America as well as in Europe.

EQUIPURE™ & BOTUCRIO®
The combination of Nidacon’s product EquiPure™ and BotuCrio® provides ways to freeze semen from stallions that were previously unable to have commercially frozen semen.

REFERENCES
Post-thaw characteristics and fertility of stallion semen frozen in extenders with different cryoprotectants. J.C. Samper et al.; Veterinary Reproductive Services, 2943 216 Street, Langley, BC V2Z 2E6, Canada.
Effects of concentration of seminal plasma on cryopreservation of equine spermatozoa. A.S. Rocha et al. Acta Scientiarum Veterinariae. 38 (Supl 3); p. 690, 2010

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Description</th>
<th>Volumen</th>
<th>Art. no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EquiPure</td>
<td>100mL</td>
<td>EPB-100</td>
</tr>
<tr>
<td>SpermFilter</td>
<td>1pcs</td>
<td>BTF-001</td>
</tr>
<tr>
<td>BotuSemen (powder only)</td>
<td>100mL</td>
<td>BTSP-100</td>
</tr>
<tr>
<td>BotuSemen (powder only)</td>
<td>400mL</td>
<td>BTSP-400</td>
</tr>
<tr>
<td>BotuSemen with water</td>
<td>100mL</td>
<td>BTS-100</td>
</tr>
<tr>
<td>BotuSemen with water</td>
<td>400mL</td>
<td>BTS-400</td>
</tr>
<tr>
<td>BotuCrio</td>
<td>25mL</td>
<td>BTC-025</td>
</tr>
</tbody>
</table>

Anna Niläng Laessker
Product Specialist
Tel: +46-31-703 06 38
E-mail: anna@nidacon.com

Nidacon, Flöjelbergs gatan 16 B,
SE-431 37 Mölndal, Sweden
Tel: +46-31-703 06 30, Fax: +46-31-40 54 15
E-mail: contact@nidacon.com, www.nidacon.com