

Equine Reproductive Center: A A Legacy of Excellence



Presentation of the CREC



Historic:

Founded in 2011 in Tivoli Terme, near Rome. The center was bought by Dr. Clariza, who started with very few horses, clients, and pieces of equipment.

Over time, she gradually signed more contracts, and the center became a major reference in the technique of embryo transfer, a technique she learned while working in the US. Dr. Bianca Clariza reached this level of recognition with the help of her team of veterinarians and nurses. While some vets specialize in reproduction, others are specialized in internal medicine, treating the horses at the center. The center has a capacity of about 350 to 400 horses, divided between recipient mares used for embryo transfer (The Center offer to his clients a herd of more than 50 mares), owners' mares for breeding, stallions for semen collection, and foals. The facility spans approximately 100 hectares.

The Technique of Embryo Transfer

The center is widely specialized in the technique of embryo transfer. This technique was already widely developed in the US but was not very common in Europe at the time. Dr. Clariza was one of the first vets practicing this technique in Italy.

What is Embryo Transfer?

Embryo Transfer is a non-invasive procedure in which an embryo is collected from a mare (called the Donor) 7-9 days after insemination via a uterine flush and transferred to a different mare (the Recipient) who will carry the pregnancy to term.

Benefits of the Procedure

- Increases the reproductive output of mares with high genetic value.
- Enables breeding of mares involved in competitive sports.
- Optimizes the fertility of older mares or those with fertility or anatomical issues.
- While a mare typically produces only one foal per year, Embryo Transfer allows for multiple foals from the same mare, using different stallions.



The technique of the embryo transfer

Services:

- Synchronization of donor and recipient mares;
- uterine flush and embryo recovery;
- transfer in the recipient mare;
- rent of the recipient mare (from the day of the transfer until the foal is weaned);
- transfer of embryo found in other structures.

Why do owners use this technique?

Embryos can come from specific cross-breeding planned by the center or its partners. Some owners want to breed their mares using artificial insemination with semen from stallions at the center or abroad. However, they also want their mares to remain non-pregnant so they can continue training and competing. In these cases, embryo flushing is performed to collect the embryo and transfer it to a recipient mare.

What's the business model of embryo transfer?

Owners pay to rent a recipient mare that will carry the embryo throughout the pregnancy. There are separate charges for the embryo flushing (the technique used to collect the embryo) and for the embryo transfer. The transfer fee is only applied if the embryo survives beyond 14 days.

The technique of the embryo transfer

Success Factors:

The success of the procedure depends on several factors:

- The age and fertility of both the donor and stallion.
- The quality of the recipient mare.
- The synchronization of the mares.
- The size and morphology of the embryo.

Embryo recovery rates vary based on semen quality and the age of the donor:

80%

success rate with young mares.

30%

success rate with older mares.

60-70%

of transferred embryos result in pregnancy

Ideal Candidates for the Procedure:

- **Young mares** with strong competitive results and high genetic value.
- **Older mares** with excellent pedigrees that are unable to conceive due to anatomical issues.
- **Mares** suffering from reproductive health problems (such as cervix fibrosis or endometrial degeneration) that prevent pregnancy.



Breeding center

SERVICES

- Insemination using fresh, cooled, or frozen semen
- Deep insemination with a small number of straws
- Assessment of the mare's reproductive potential
- Management of mares with fertility issues, including diagnostic tests and specific treatments
- Evaluation and processing of incoming cooled semen, especially when quality is low
- Assistance in selecting the appropriate stallion for breeding

Fresh Semen, Cooled Semen and Frozen Semen

Definition	collected from a stallion used immediately or within a short period (usually within 24 hours) after collection	has been chilled to a lower temperature (4-5°C) to slow down sperm metabolism preserve it for a longer period (typically 24-72 hours).	processed and stored in liquid nitrogen at -196°C, allowing long-term storage for future use.
Storage	No freezing required; semen is kept at body temperature during transportation and use.	Stored in special containers (e.g., shipping containers with ice packs) for transport.	Stored in cryogenic tanks for years, enabling preservation of genetic material indefinitely
Advantages	High motility and fertility, as the semen is in its natural state.	Can be transported over greater distances than fresh semen, providing flexibility in breeding.	Long-term storage, allows breeding with stallions located anywhere in the world, and can be used many years after the semen is collected.
Disadvantages	Limited shelf life, transportation challenges over long distance	Reduced motility compared to fresh semen, and must be used within a specific time frame to ensure viability.	Lower sperm motility post-thaw, and may require advanced techniques for successful insemination.

Stallions

SERVICES

- Phantom mare training
- Production of frozen semen and freezing tests
- Evaluation of semen quality in the laboratories
- Management of stallions with fertility issues
- CREC is an affiliated laboratory of Select Breeders Services (SBS)
- Stallion management throughout the breeding season

Foaling assistance

Services:

- monthly ultrasound checkup;
- vaccine administration;
- foaling assistance;
- first care to the foal;
- 24-hours blood tests and IgG evaluation



Foaling assistance

Foaling Assistance Unit

- Pregnancy Monitoring & Foaling Assistance
- **Timing of delivery monitoring:** Using the Foal Alert system and 24-hour video surveillance to respond quickly to emergencies (e.g., red bag or dystocia).
- **Veterinary team on-site** to assess the foal's health using the Apgar Score and monitor post-birth events:
 - Placenta expulsion
 - Umbilical disinfection
 - Anti-tetanus serum administration
 - Assistance with standing and feeding.
- **Overnight observation** of the foal to ensure regular feeding.
- **Enemas** are administered if needed to aid meconium expulsion (especially in colts).
- **Colostrum quality** is tested with a refractometer, and if insufficient, heterologous colostrum from the Center's frozen reserve is provided to ensure proper immune transfer.
- **Complete hematological screening** at 24 hours to assess antibody levels and overall health, with plasma administration if necessary.
- **Monthly ultrasound checks** for pregnant mares, either at the Center or in their stables.
- Regular vaccinations:
 - EHV 1,4 at 5/7/9 months
 - EI+TE at 10 months
- **Last three weeks of gestation:** Mares are housed in spacious, rubber-floored boxes designed for delivery.

State-of-the-Art Facilities & Technology

Technology

The CREC is equipped with cutting-edge technology and modern facilities designed to provide the highest standard of care and innovation in equine reproduction.

Advanced Diagnostic Imaging Imaging

High-resolution ultrasound and endoscopy for precise reproductive assessments.

Specialized Laboratories

Fully equipped for semen analysis, embryo handling, and cryopreservation.

Dedicated Foaling Stalls

Spacious, monitored stalls with integrated alert systems for safe deliveries.



Neonatal Care

At CREC, our commitment to equine health extends to comprehensive neonatal care, ensuring every foal receives the best possible start in life. Our dedicated team provides specialized attention from birth through the critical first weeks, focusing on health, development, and early intervention.



Immediate Health Assessment

Comprehensive physical examination and vital sign evaluation within the first hours of life to identify any initial concerns.



Continuous Monitoring

24/7 observation, including video surveillance, to detect subtle changes and provide prompt intervention for any health deviations.



Colostrum & Immunity Management

Thorough colostrum quality testing and administration of supplemental heterologous colostrum or plasma if needed to ensure vital immune transfer.



Early Intervention & Specialized Treatment

Prompt addressing of common neonatal issues such as meconium impaction, infection, or developmental anomalies, with access to advanced diagnostics and critical care.

Sources & Acknowledgements

All textual content and images featured in this presentation are directly sourced from the official Equine Reproductive Center (CREC) website. Further insights and details have been enriched by direct experience and observations at the CREC facility.

Thank you for your attention.