



Beyond®

The extender for long-term storage of chilled stallion semen



long-term storage



high-grade ingredients



GMP-certified production



With Beyond®, semen storage is finally possible for up to 14 days at +5°C.



Game-changer for the horse breeding industry



What is new about Beyond®?

Today, the storage of chilled stallion semen is limited to 3-4 days with the available extenders. Timing is therefore very important in every step of the equine artificial insemination (AI) process. Semen must be processed and shipped quickly, and insemination has to be perfectly synchronized with the mare's ovulation.

The development of **Beyond®** marks a revolutionary new method of preserving stallion semen **for up to two weeks** after collection. More than just being a storage medium, Beyond® contains many high-grade ingredients that **maintain the fertility of the sperm**.

Beyond®, 100 ml ready-to-use extender **13570/0100**

What are the benefits of long-term storage with Beyond®?

- More flexibility in the timing of inseminations
- Less frequent collections of the stallion
- Longer storage time reduces the number of shipments of insemination doses
- Semen from "poor coolers" – stallions that do not respond well to chilling and freezing – can be stored at +15°C for up to 7 days



5 steps to extend the shelf life of stallion semen with Beyond®

1. Semen collection and evaluation
2. 1 to 1 dilution with pre-extender*
3. Centrifugation with or without CushionFluid
4. Final dilution to 50-100 million sperm cells/ml with Beyond®
5. Storage for up to 14 days**

* milk based with antibiotics e.g. EquiPlus

** depending on stallion and temperature

EquiPlus, semen extender with antibiotics, **13570/0263**
used for centrifugation, 100 ml



Field study results of Beyond®

To evaluate our newly developed formulation, we compared storage of ejaculates of 25 different stallions from two stud farms in a split-sample study and found that motility is conserved at a high level for up to 14 or 7 days of storage at +5°C or +17°C, respectively.

Beyond® extends the storage time significantly (see figures 1 and 2). This was also observed with “poor coolers” and stallions with low initial semen quality. Beyond® opens up a whole new perspective for the horse breeding industry, allowing longer storage and shipping times. A shipment of semen from Germany to Colombia has already taken place and resulted in embryos being produced from 5 day old semen stored at +5°C, although ovulation occurred only at day 6. Beyond® also reduces the number of weekly semen collections from highly demanded stallions, which is an important improvement in stud farm efficiency and animal welfare.

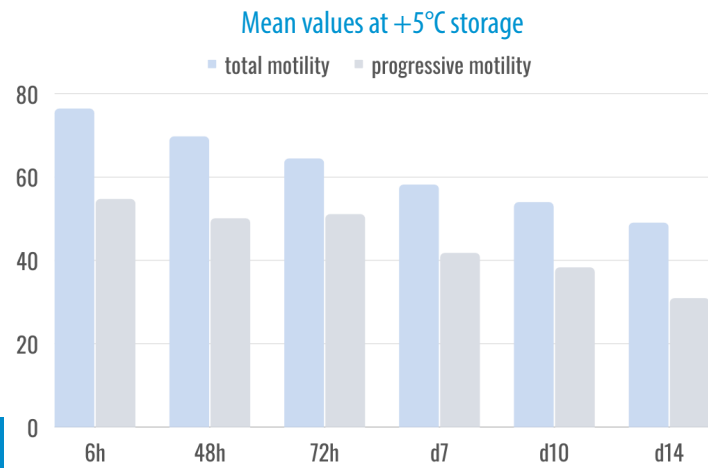


Figure 1: mean values of total and progressive motility during a 14 days storage at +5°C; n=25 ejaculates

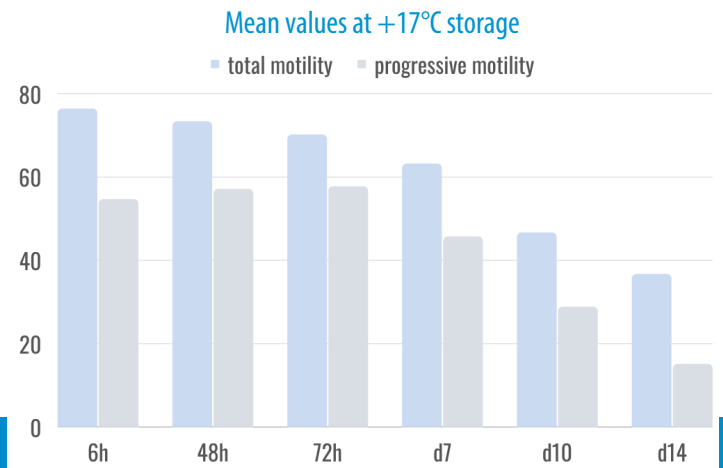


Figure 2: mean values of total and progressive motility during a 14 days storage at +17°C; n=25 ejaculates



Your benefits at a glance

- Chemically defined, purely synthetic extender
- Ready-to-use in 100 ml bottles
- Semen storage and transport at +5°C
- Suitable for “poor coolers” with optional storage at +15°C
- Less collections and more flexible AI logistics
- Lower risk of causing uterine inflammation
- Produced and quality controlled under GMP-certified guidelines



Beyond® applications
under field conditions

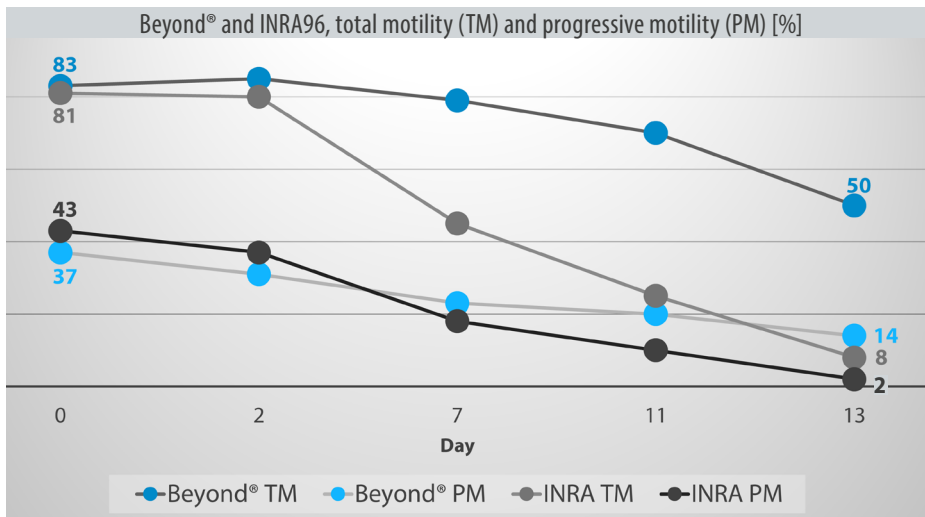


In vivo and in vitro study results of Beyond®

Semen samples were collected from 6 warmblood stallions and divided into an in vitro (n = 5) and an in vivo group (n = 2).

The ejaculates for the **in vitro** test were divided into 2 portions; one portion resuspended in **Beyond®** and the other portion resuspended in INRA96 and evaluated on days 0, 2, 7, 11 and 13. Total and progressive motility were assessed by computer-assisted sperm analysis (CASA; Minitube).

At day 13, average motility was 52% in Beyond® and 6% in INRA96.

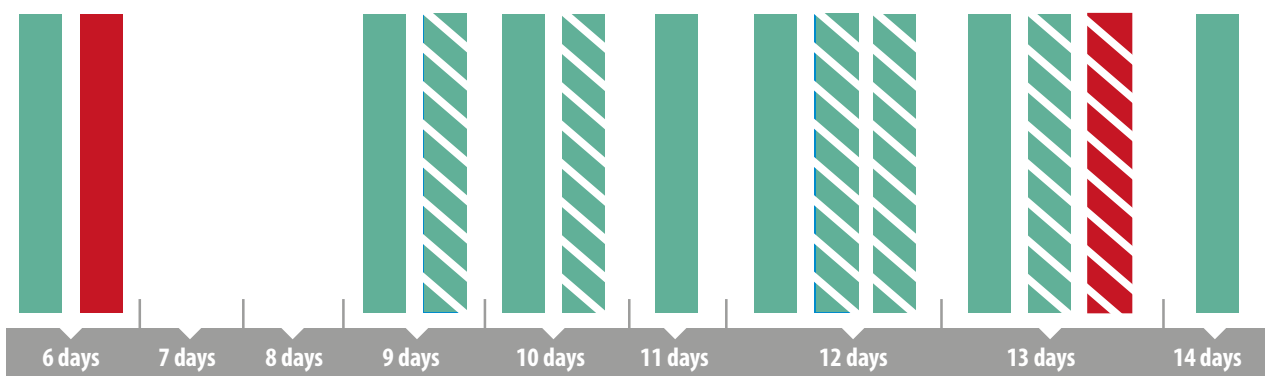


The ejaculates for the **in vivo** test were divided into 7 doses per stallion (n = 2) and inseminated before ovulation in the mares (n = 14). Prior to insemination, the semen was stored at 5°C for a minimum of 6 to a maximum of 14 days, using **Beyond®** to preserve the doses. Pregnancy was diagnosed by ultrasound 15 days after ovulation.

In the in vivo group, a pregnancy rate of 86% (12 out of 14 inseminated mares) was achieved.

Semen cold stored in Beyond® for 13-14 days can easily result in pregnancies!

- Stallion 1
- Not Pregnant
- Stallion 2
- Pregnant



days old semen, stored at 5°C | 14 mares inseminated



Paper

EFFECT OF A NOVEL SYNTHETIC EXTENDER (BEYOND®) ON TOTAL AND PROGRESSIVE MOTILITY AND FERTILITY AFTER UP TO 14 DAYS OF COOLED STORAGE OF EQUINE SEMEN
M.D. Verbruggen, D.P. Hoekstra, E.R. van Proosdij, M.T. Wessel