

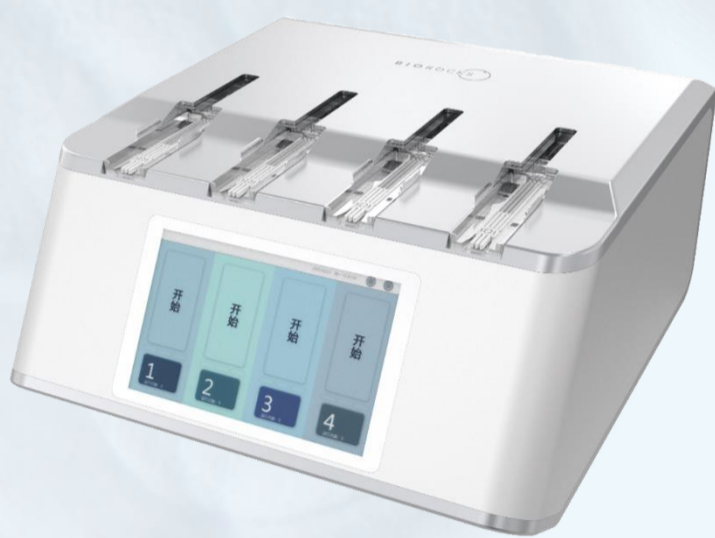
Automated Vitrification and Warming System

Are you facing the following problem?

- Embryologists are under huge pressure due to heavy workload
- Not satisfied conception rate of bovine embryos
- Ranch fails to meet the warming conditions: it lacks embryologist and the lab equipment.



**Globally Innovative
Exclusive Product**



Fully Automated
Vitrification-Warming
System (4-Channel)



Fully Automated
Vitrification-Warming
System (2-Channel)



Automated Embryo
Warming and Loading
System

► Performance

A one-step solution. Automate the embryo processing steps during vitrification and warming. **Reduce variability caused by manual operations.**

No site restrictions, **no microscope and embryologist needed**, can be warmed and direct transfer on-site in the ranch!

► Advantages

High Throughput

12 vitrification vessels can be processed continuously with 4 channels, achieving **vitrification rate up to 108 embryos/hr and warming rate up to 216 embryos/hr.**

Stable

Enhance stability by reducing manual errors through easier operation.

Compatible

Compatible to manual vitrification and warming process and storage. Providing a more standard and reliable option.

High Successful Rate

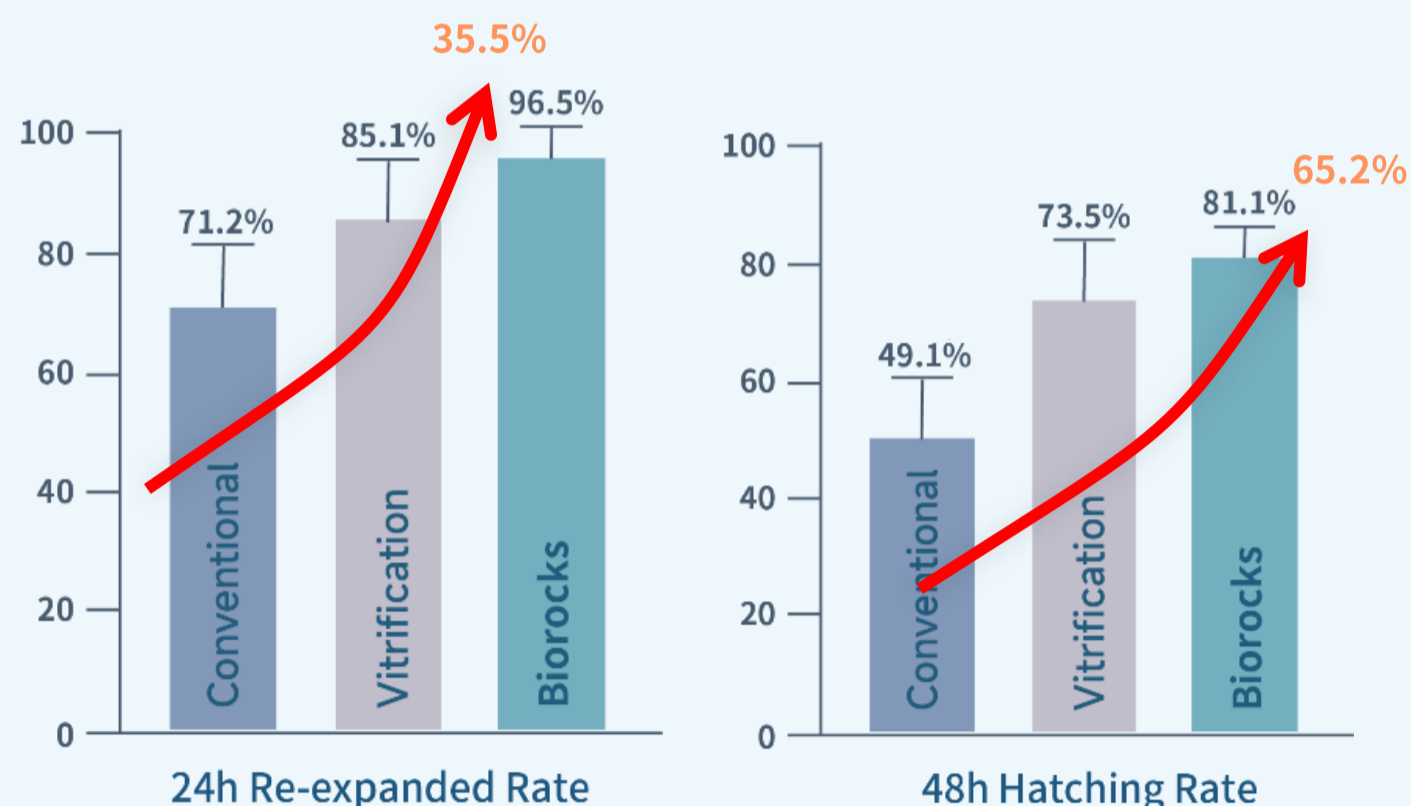
Biorocks automated system can significantly reduce embryo damage during vitrification and warming, as proved by literature. **Significantly improved results: conception rate consistent with fresh embryos.**

No Restrictions

No site restrictions, no microscope needed, can be warmed on-site in the ranch.

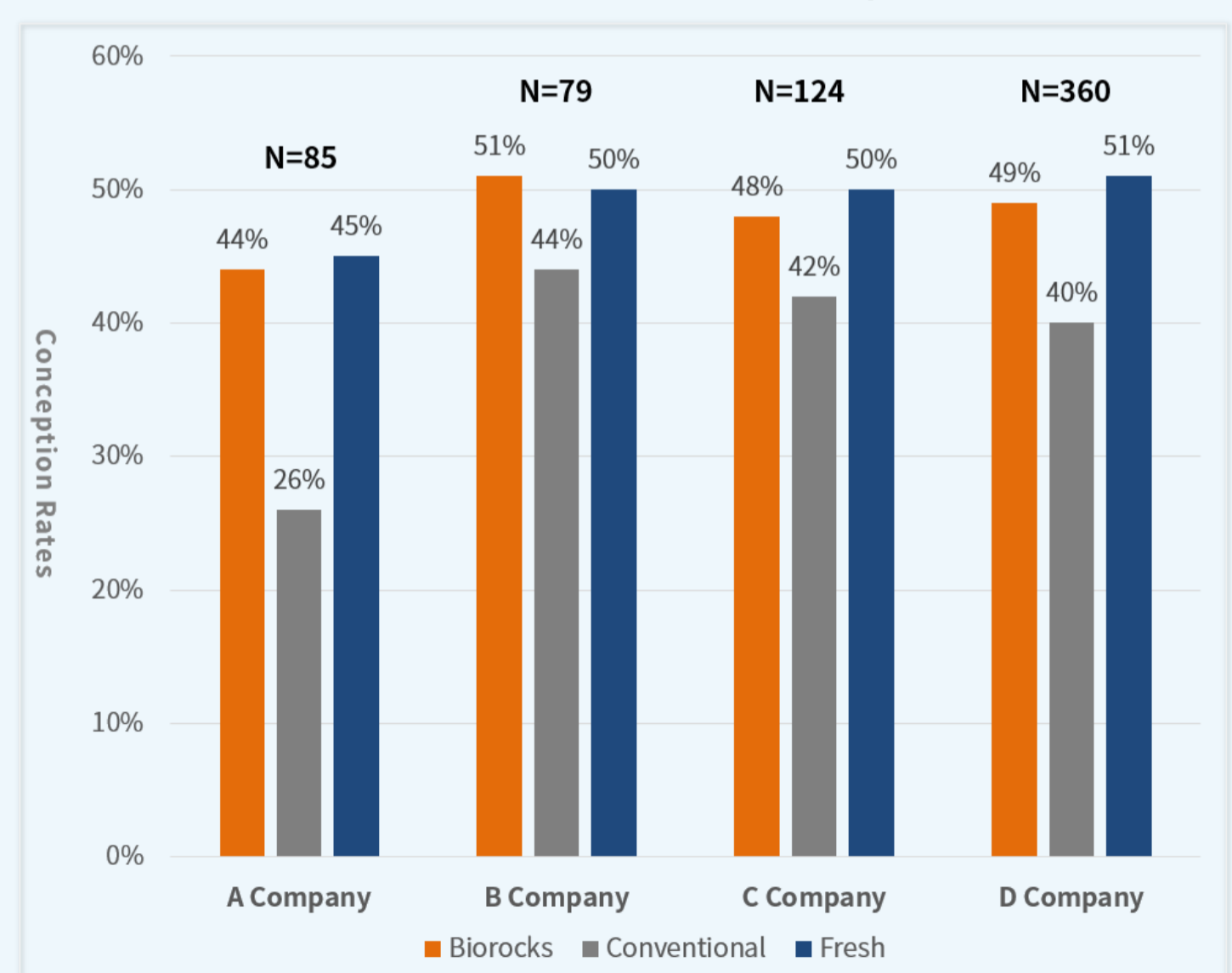
► Data

Biorocks VS Manual Operation

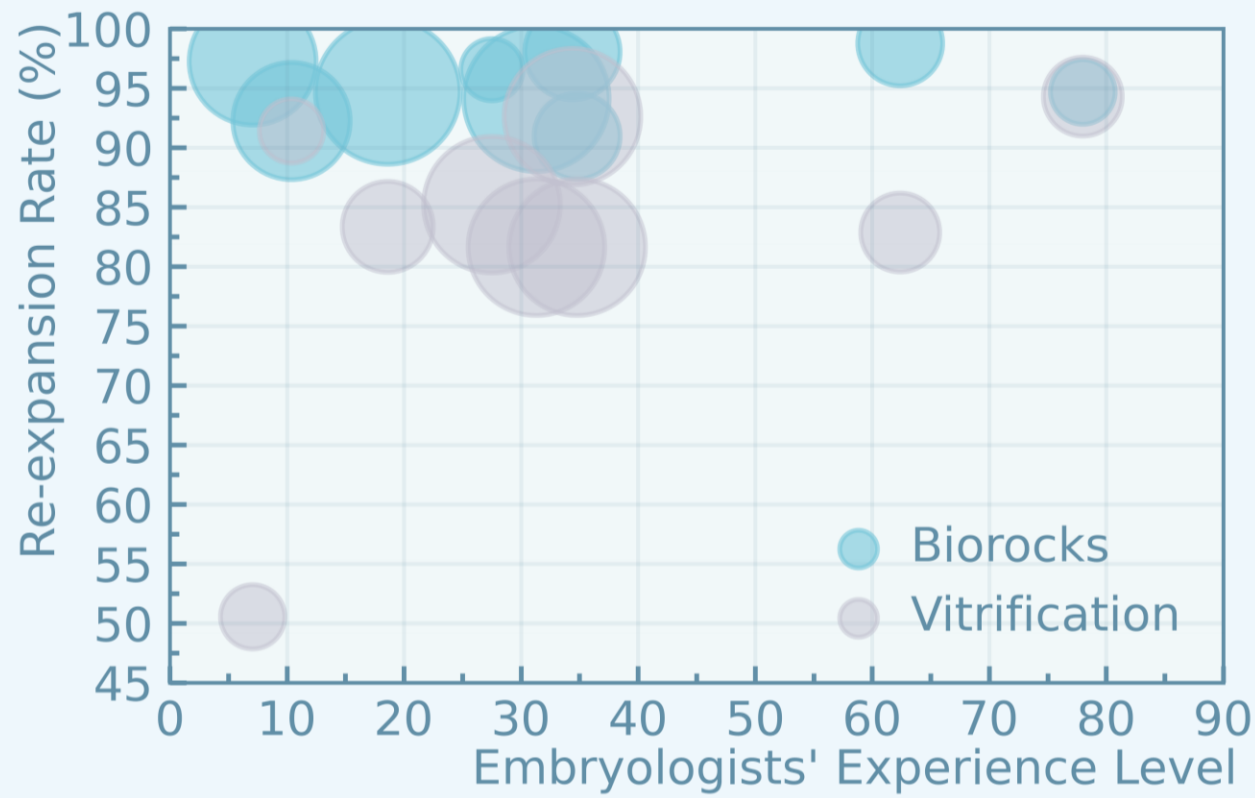


Experimental data confirms, Using Biorocks Automated System for freezing and thawing bovine embryos, the 24h re-expanded rate and 48h hatching rate are significantly better than those achieved with manual vitrification and slow-freezing methods.

Comparison of Conception Rates between Fresh Embryos and Different Freezing Methods

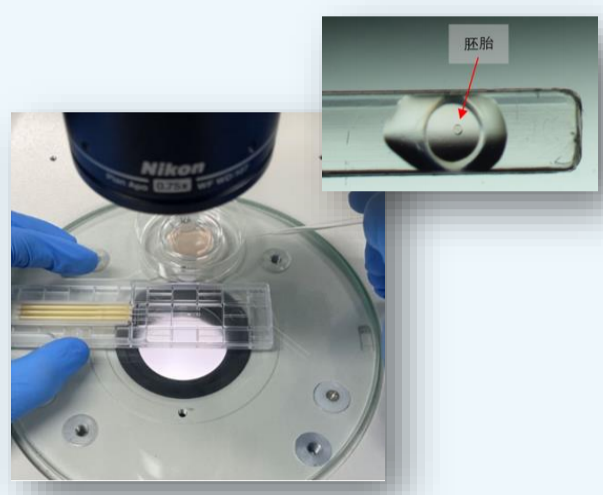


► Difference between Manual and Automated Approach



Manual vitrification and warming shows significant variability even with experienced embryologists. In contrast, vitrification and warming with Biorocks system significantly reduced variability even with **beginner Embryologist**.

► Vitrification Procedure



Transfer embryo into vessels.



Start vitrification protocol.



Transfer to liquid nitrogen.

12 vitrification vessels can be processed continuously, achieving vitrification rate up to 108 embryos/hr.

► Warming Procedure



Take out the vessels.



Warm the vessel in oil bath.

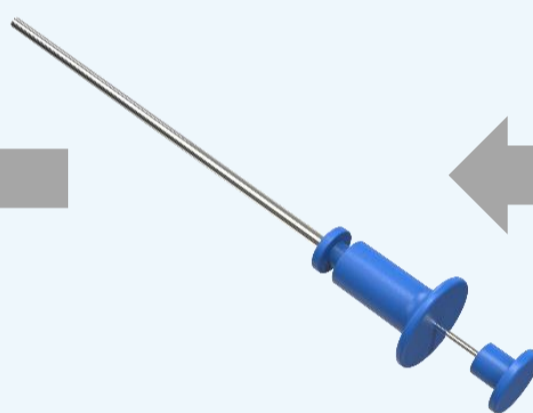


Start warming protocol

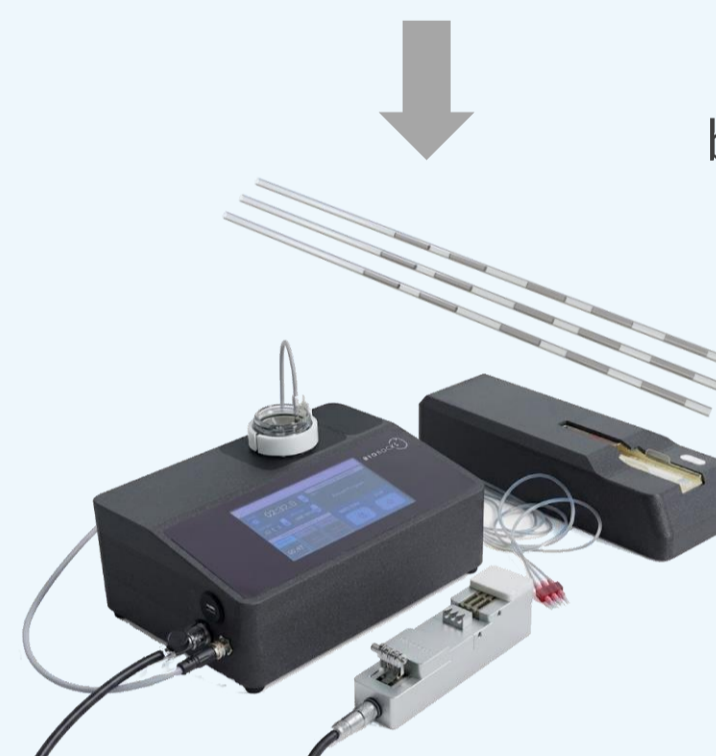
12 vitrification vessels can be processed continuously, achieving warming rate up to 216 embryos/hr.



Embryo Transfer to the recipient animal.



Install the straw onto the transfer gun.



Automated Embryo Warming and Loading System: Embryo load into straw neither microscope nor embryologist.



Dr. SHU



Website



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