

Conventional MOET vs IVP in Cattle: Navigating a Paradigm Shift Despite Proven Success

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At Holbrook Breeders Australia, we're in a unique position, conducting both multiple ovulation embryo transfer (MOET) and in vitro production (IVP) culminating in over 10,000 embryo transfers annually. Our exposure and scale give us a comprehensive view of how reproductive technologies are evolving in the field, and what producers really want from their programs.

What's clear is that we are now amidst a global paradigm shift. IVP is gaining traction around the world, driven by technology, genomic selection, semen efficiency, and scalability. And yet, the clinical reality remains, conventional MOET continues to deliver outstanding and reliable results across well-managed programs.

As veterinary specialists, we're tasked with navigating this shift on behalf of our clients, with a balance of scientific rigour, practical experience, and strategic judgment.

1. Global Trends and Industry Momentum

Around the world, IVP has exploded, particularly in regions like Brazil and the U.S., where production of IVP embryos often surpasses MOET. The drivers are clear:

- Broader donor eligibility
- Use of sexed and rare semen
- Genomic acceleration
- Frequency of collections

However, with that growth comes greater variation in results, and more complexity in execution.

2. Performance in Practice: Results Across Programs

MOET continues to deliver:

- Embryo transfers regularly achieving 65–85% pregnancy rates
- High embryo quality and uniformity
- Greater predictability across donor types
- Higher reproduction efficiency of recipients

IVP has improved, but remains variable:

- Pregnancy rates between 25–60%, depending on donor, lab, and recipient factors
- More embryos per straw of semen, but more lab-dependency
- Embryo quality less consistent, especially in young donors
- Lower reproduction efficiency of recipients

One area showing significant improvement in IVP outcomes is the use of controlled ovarian stimulation protocols prior to OPU. When carefully timed and tailored to the donor, stimulation can increase the quantity of quality of oocytes collected, reduce variability across collections, and ultimately lead to more consistent embryo development and pregnancy rates.

3. But Are We Measuring the Right Outcomes?

“You can’t argue with calves on the ground.” That’s a common benchmark, and for good reason, MOET still delivers more calves per embryos transferred into recipients. It’s predictable, reliable, and proven.

But IVP introduces a broader question: Do fewer calves’ matter if they are more strategically valuable?

IVP allows us to:

- Collect from pregnant, young, or non-responsive donors
- Use elite or sexed semen with extreme efficiency
- Shorten generation intervals through early genomic selection
- Maintain a donor’s calving interval
- Repeat collections every 2 weeks instead of every 5–8

So, while MOET puts more calves on the ground, IVP can, if applied correctly, put more valuable calves on the ground.

It’s no longer just about quantity - it’s about context.

4. Practical Implications for Veterinary Specialists

As reproductive veterinarians, we’re often the ones tasked with advising producers not just on technical execution, but on strategic use. That means:

- Assessing donor suitability for MOET or IVP
- Managing expectations around embryo quality and pregnancy rates

- Facilitating communication between field and lab teams
- Helping clients balance volume vs precision

Our role is evolving from technician to translator, from applying the tool to designing the program.

5. Producer Sentiment: What They're Asking For

Across our client base, we hear consistent themes:

- Speed – faster return on genetic investment
- Flexibility – ability to work with younger or pregnant donors
- Efficiency – especially in recipient use and semen deployment
- Results – reliable pregnancies, predictable costs

MOET often feels safer. IVP feels faster. Our clients want both.

6. Snapshot Comparison: Choosing the Right Tool

Attribute	MOET	IVP
Pregnancy Rate	70-85% (fresh), 60-75% (frozen)	45-60% (fresh), 25-50% (frozen), variable
Donor Type	Cycling, open	Pregnant, maiden, aged or elite donors
Frequency	Every 5–8 weeks	Every 2 weeks
Semen Use	2 straws per flush	1 straw = multiple donor/embryos
Embryo Uniformity	High	Variable
Lab Dependency	Low	High

7. Conclusion: Matching Tool to Purpose

This is not a question of which method is “better.” It’s a question of what the program needs, and how veterinarians can align technology with that objective.

- If consistency and recipient efficiencies are the goal, MOET is still unmatched.
- If speed, flexibility, and genetic precision are priorities, IVP offers compelling advantages.
- And in many cases, the most successful programs are blending both, tailoring the approach to season, donor, and desired outcome.

The paradigm is shifting, but our job remains the same: deliver healthy calves, push genetic progress, and guide our clients with evidence, context, and honesty.