

IVF frequently asked questions

What is In Vitro Fertilization embryo transfer?

In vitro fertilization for embryo transfer is a technology that has been around for some time, but has only recently become used routinely by cattle breeders. It differs from conventional flushing in that the oocytes (eggs) from the donor female are removed prior to fertilization. The collected oocytes are shipped overnight to a lab where fertilization takes place. There, the embryos are allowed to develop for a week. The embryos that develop are then shipped back to the farm where they are transferred into recipient animals.

How are the oocytes collected?

Oocytes are collected by a process known as trans-vaginal follicular aspiration, also called oocyte pick-up (OPU). By using ultrasound guidance, a needle is inserted directly into the ovary from deep inside the vaginal canal. A vacuum pump is then used to aspirate the fluid in the follicle, bringing the oocyte with it. The collected fluid is then filtered and the oocytes are removed under a microscope.

Is there a risk to the donor animal?

There is very little risk to donor animal from this procedure. Theoretical risks include bleeding, scarring and infection, but these are not usually seen, even in donors that are collected regularly.

What does it cost?

Please see the attached fee schedule.

Can you freeze IVF embryos?

In general, IVF embryos do not tolerate freezing very well. Some have frozen IVF embryos by vitrification or in glycerol, but there is a dramatic reduction in embryo survival following freezing. It is best to have recipient animals available for fresh transfer of the embryos. As this technology advances, many believe that the ability to successfully freeze IVF embryos may be available in the future.

Can gender selected semen be used?

Commercially available sorted semen can be used with good success. All semen, including conventional, must be tested prior to collection of the donor.

Which cattle should be used as donors?

Just like conventional embryo transfer programs, superior females are the best candidates.

White Oak Veterinary Clinic

Phone: (814) 267-4411
FAX: (814) 267-5942

7631 Glades Pike
Berlin, PA 15530
U.S.A.

Can I collect pregnant cows?

Pregnant cows can be used as donor animals without increased risk of pregnancy loss up to about 100 days of gestation. After that time, the ovary becomes physically out of reach preventing collection of oocytes.

Can I collect virgin heifers?

Virgin heifers, as long as they have reached puberty, can be collected.

How often can a donor be collected?

As frequently as every 2 weeks.

What is the average yield of embryos?

Average yield of embryos is about 3 to 4 per collection. Like all averages, some animals are very prolific and some are not.

What is the conception rate?

Pregnancy rate in fresh IVF derived embryos is around 50%. Results will vary from farm to farm.

What advantage does it have over conventional ET?

1. Pregnant cows can be used.
2. Donors can be collected every 2 weeks.
3. Sexed semen can be used to fertilize the oocytes with much greater reliability than conventional flushing.
4. Many cows that do not respond to conventional flushing will respond to an IVF program.
5. Since sexed semen can be successfully used, recipient utilization can be optimized to produce 90% heifer calves.

What are the disadvantages of IVF embryo transfer?

1. Since the embryos do not survive freezing very well, recipient animals must be available on the day the embryos are to be transferred.