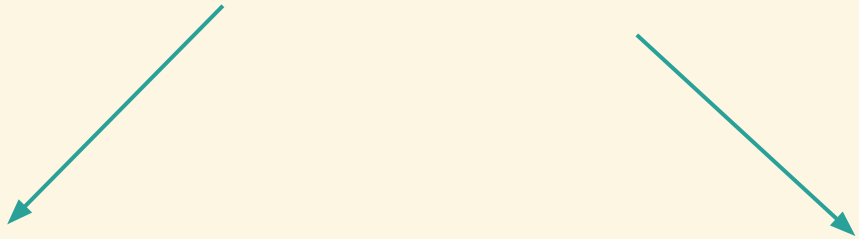
Animal

Cloning

Biology Revision Presentation

TWO

methods are used to clone animals



Nuclear transplants

Embryo cloning

Embryo Cloning

(like identical twin formation)

produces
genetically
identical INDIVIDUALS

Eggs + Sperm Collected

From *only the best organisms.*

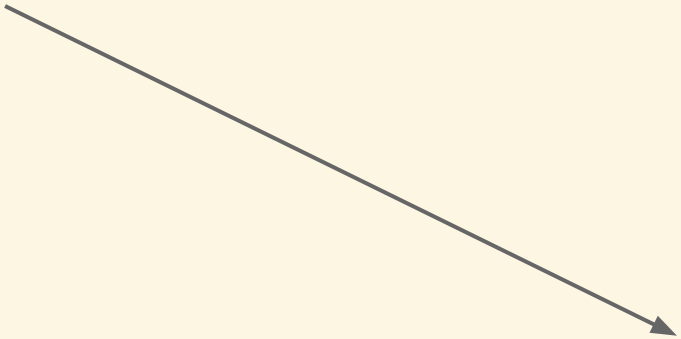
e.g. The cow that produces the most milk and the bull with the most meat.

The sperm and eggs are the taken and fertilised using

In Vitro fertilisation

Embryos formed by allowing the fertilised egg to divide in laboratory conditions.

Formed Embryos inserted into surrogates



Multiple different individuals develop.

Surrogates give birth to related and genetically identical individuals.

Nuclear Transplants

Clones produced from *one individual.*

Cells are taken from somatic body cells of the donor. These are stored in a medium which stops division.

Egg cells are taken from the recipient and enucleated.

(the nucleus is removed)

Donor and recipient cells are fused using a gentle electric pulse.

Egg cell divides to produce a ball of cells.

This is the developing embryo and is implanted into the uterus of a surrogate who later gives birth to an individual that is genetically identical to the donor.

Why?

Preserve characteristics for future generations.

Produce cells in large amounts e.g. cancer cells for research.

Maintain genetic stocks with single cell line.

the end