



CRC

for

Premium

Quality

Wool

Production of Transgenic Animals

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Kevin Ward, CSIRO Animal Production.



Methods used to produce transgenic animals

- microinjection
- embryonal stem cells
- liposomes
- retroviruses
- DNA-coated projectiles
- sperm-mediated gene transfer
- nuclear transfer/cloning

CRC

for

Premium

Quality

Wool



Microinjection Methodology

- Produce single-cell fertilised embryos
- Microinject DNA into one pronucleus
- Culture embryos to blastula stage
- Transfer embryos to recipient mothers
- Screen progeny by Southern blots



CRC

for

Premium

Quality

Wool



Constraints on selection of transgenes

- Size
- Appropriate tissue-specific expression
- Regulation of expression
- Host compatibility with gene product
- Substrates and co-factors available when required

CRC

for

Premium

Quality

Wool