7. [a] Multiple Ovulation Embryonic Transfer (MOET) has greatly influenced agricultural production. The process of MOET involves selecting a genetically superior cow and using the Follicle Stimulating Hormone (FSH) the cow is 'super-ovulated'. As a result the cow produces up to 20 ovum. Following this the cow is artificially inseminated (AI) with semen from a bull (usually selected by ABV's (Australian Breeding Values)). The embryos are then removed/~~and~~ ~~ust~~ harvested using a Foley Catheter and implanted into recepient/surrogate cows (these cows have been heat synchronised to ensure successful implantation). The donor cow is then flushed of all ~~embryo~~ remained embryos and these maybe stored in liquid nitrogen for many years.

Using the process of MOET in conjuction with AI the genetic potential of a genetically superior cow is greatly increased from 1-2 calves/yr to ~~a~~ upwards of 5-10 calves/year.
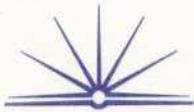
[b] The technology and scientific research that lead to the development of MOET in conjuction with AI has had many positive and negative impacts on animal production.

The positives of MOET and AI include:-

★ maximising a genetically superior cows' potential. MOET allows a superior cow to produce upwards of 5-10 calves per year in contrast to 1-2 calves/year.

- The farmer is also able to ~~harvest~~ harvest embryos from young calves ~~before~~ they become heifers and are able to reproduce themselves, as a result again drastically increasing the genetic potential of superior cows.

★ as the farmer will normally produce/harvest a large number of embryos from a single cow this ensures a uniform offspring and as a result a uniform product (ie- milk with similar butterfat and protein percentages)

★ MOET also increases the genetic potential of an entire herd. As animals that may not be of a high genetic standard are still able to produce offspring of a very high genetic standard

The negatives aspects of MOET in conjuction with AI include: -

* a reduction in the genetic pool of a herd. Although this may mean a genetically superior herd a herd that is genetically similar carries great risks, as if a disease was to enter the herd and the herd was susceptable to the disease, it could easily affect the entire herd as they would be genetically similar.

~~* with a decreased genetic pool # and the incorporated~~

* the process of MOET is quite expensive and the costs of the procedure may never be recouped even if a genetically superior cow is produced.

* not only is the process of MOET expensive, it does not carry with it a high success rate and as a result the process becomes even more expensive for the farmer.

There are many positives and negatives impacts on animal production in relation to MOET. The widespread use of this technology appears to
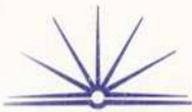
suggest that the positives impacts of this technology far out weigh the negative effects.