

SEAG-Symposium, October 14-18, 2002, Vietnam

“The role of dialogue and networking:
From a transitional to an industrialized country”

Application of Reproductive Biotechnology in Farm Animals in the Developing Countries: Case Study in Indonesia

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Abstract

Several techniques in the animal reproductive science have been applied to accelerate the increasing of farm animal population. It is generally accepted that the reproductive biotechnology has a potential role in the expanding animal population. Recently, the use of biotechnology is more popular after “Dolly” born which was produced from the cloning technology. Until now it is recognize there are four generations of applied animal reproductive biotechnology such as Artificial insemination (AI), Transfer embryo (TE), *In vitro* production of embryo (IVP) and genetic engineering.

Parallel with these development, many researcher from developing countries have been deepen these technology in several developed countries. The aim of these program is to support the acceleration of expanding animal population. However, the application of these biotechnology has been hampered by several factors, such as **(1)** A high cost of the equipment, chemical and hormone; **(2)** Farmer education; **(3)** Politic and economy situation in the countries and **(4)** an environmental factor. It is therefore that an application of the reproductive biotechnology in the developing countries is still limited only in the simple and cheaper technology such as artificial insemination, meanwhile the others rest technologies are still considered as a high cost technology.

Based on the field experience, it is concluded that the most still reliable applied biotechnology for farm animal in the developing countries is an artificial insemination. However others biotechnologies such as transfer embryo and in vitro embryo production can be applied in the developing countries in a certain research goal to promote the “genetic bank” especially to safe endangers species under Government control.

Keywords: Biotechnology, developing countries, farm animal