

บทความพิเศษ

THE POTENTIAL OF EMBRYO TRANSFER IN SWAMP BUFFALO DEVELOPMENT*

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The recent advances in bioengineering with a number of breakthroughs in molecular genetics have excited many animal scientists including those in the developing countries to perceive that production and improvement of domestic animals have poised on entering a new era. Embryo transfer, a milestone of the development, has been viewed as a significant tool for genetic propagation in animals.

In Thailand, Embryo transfer has been successful in swamp buffaloes, cattle, and swine producing already some offsprings. Nevertheless, it is still in the embryonic stage.

The attempts on embryo transfer in the swamp buffalo have been reported in Thailand by Thungtanawat, et al in 1981, Nitayavardhana, et al. in 1982 and Parmpai, et al. in 1985 with successful embryo recovery with varying number and stages of the recovered embryos at impregnation of the recipient unfortunately failed. The world's first

successful swamp buffalo embryo transfer happened to be eventually achieved by the researchers in the Department of Obstetrics, Gynaecology and Reproduction, Faculty of Veterinary Medicine, Chulalongkorn University in 1989. Development and deep freezing of the swamp buffalo embryo are also studied by the group (Chataraprateep, 1990).

The success suggests brighter outlook for using the technique as a tool for more fully understanding of the details of reproductive functions relevant to embryo transport, pregnancy, parturition and other aspects of reproductive physiological and pathological phenomena of the swamp buffalo most of which have been empirically assumed to be similar to those of cattle without substantial scientific prove. Other potentials of embryo transfer in genetic engineering can also be contemplated for utilization of the technique to enhance improvement in the animal's genetic make-

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up and disease diagnosis optimizing the production of the animal.

Justification for the promotion and implementation of the technology in a large scale to enhance animal production in Thailand where the small farmers are still the major producers of the country depends on how the animal is valued, not only monetarily but also meritoriously. The reliability and cost-effectiveness of the technique and, above all, the logical, reasonable and appropriate planning to adopt efficient systems of application and evalation are of prime importance. The elements of metal understanding, concerted cooperation and coordination among policy making authority, academics, service sectors and animal owners are prerequisite for the success of the implementation.

It should be stressed that embryo transfer in the swamp buffalo is still in the technical experimental stage not a technological one yet. Nevertheless, it is justifiable that the research on the technique should be encouraged for the sake of scientific and academic advancement which is also indispensable for decision making of its exploitation to the utmost benefit of mankind.

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