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Basic overlook on artificial insemination

Grooten Colenbrander*

Department of Veterinary Science, Cooperative Pig AI-Centre, Vught, Netherlands.

DESCRIPTION

Artificial insemination of cattle is a sophisticated program that involves the use of technology to improve the quality and productivity of farm animals. AI is used in many animal species, including humans. In dairy cattle, for instance, semen from bulls that have been chosen to be genetically superior are collected and stored indefinitely. Beyond genetic improvement, AI has also helped prevent sexually transmitted diseases, and it has made pre-selection of calves possible. AI has been referred to as "the biotechnology with the greatest impact on genetic improvement of dairy cattle".

Artificial insemination has many advantages over natural service. One of these is its ability to control venereal disease, particularly in cattle. Nowadays, the most commonly advocated reason is as a means of genetic improvement. The potential of the AI should be used to control the venereal disease was a major impetus for the development of livestock in the United Kingdom in the 1940s.

At that time, Venerable pathogens Tritricchomonas fetus and Campylobacter fetus subp. venerealis were epizootics in most livestock populations, but in the United Kingdom, together with most countries where bovineae was introduced in the face of trichomonosis and campilobacteriosis, these pathogens were practically eliminated by their use. However, the opposite is also true: uncontrolled use of stones in cases may diffuse diseases. Many diseases are transmitted through sperm, including not only conventional venereal diseases, but also other conditions that would not generally be considered mainly venial. The rigorous monitoring of health in the sides of the Donors of the AI is therefore considered in many countries as an integral part of the national anti-disease programs.

The use of the AI as a means of genetic improvement stems from the fact that, in most feeding products, each ejaculation can be divided into many doses of insemination, so that each parent can be used to create a very large number of females. Thus, the total number of required pairs is reduced, with a significant increase in the intensity of the selection that can be applied to the masculine side. In dairy cattle, only the best 1% of cows is selected as potential bull mothers and only 1% to 3% of their male offspring finally become gentlemen of the next generation. By cutting cattle and pigs, the intensity of the selection is not so great, but, however, it is much more intense than possible in natural breeding.

However, although the AI has many advantages over natural breeding, the technique is not disadvantaged. The detection of the fertile period of the female cycle is potentially the most problematic aspect of AI programs. In livestock, the important behaviour of the inestros females in which they are mounted several times allows a relatively accurate human identification of the fertile period. Similarly in pigs, the receptive females "freeze" when the pressure is applied on their backs. However, in most other species, the detection of the most fertile period is less easy.

In similar species, detection of oestrus therefore requires the vasectomised males, or else the timing of oestrus must be controlled by oestrus synchronisation/induction, or timing of weaning in sows. Therefore for ewes, which do not normally display any signs of oestrus in the male absence, to detect oestrus or pharmacological manipulation of oestrus AI requires either the presence of vasectomised rams to define the timing of the fertile period. So, detection of the fertile period of the ewe is a costly procedure, detracting from the appeal of AI in this species.

AI may be considered that an economic 'trade-off' exists in some species between the genetic advantages conferred by the use of superior AI sires on one hand and the costs of maintaining teaser males or pharmacological manipulation on the other.