Identification of nucleus boar semen quality to ensure the sustainable conservation of Taiwan native Lanyu minipigs

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Lanyu pig is a native breed origin from Lanyu island of Taiwan. It is characterized by small body size and small erect ears and in addition to the traditional black Lanyu pigs (Lanyu 200), it can be further subdivided into different pig strains such as Lanyu 100 (Spotty pig), Lanyu 400 (Binlang pigs) by their hair coat and Lanyu 50 (Mitase pig) a cross mating with commercial pig breed. Lanyu pigs have now drawing much attention on biomedical experiments for its greatly physiological tolerance during and after surgical operation, therapy and easily manage. For stabilizing the supply of sufficient healthy laboratory animals and for maintaining provenance diversity, the nucleus boar semen quality was naturally important for laboratory animal supply chain and population conservation with so much at stake. Therefore, the purpose of this study is to ensure optimal fertility of nucleus boars and major advances in the selection of young boar to guarantee their semen fertility before get into nucleus herd. Experiment results showed an incidence of ejaculates with a sperm DNA fragmentation index (DFI), a damaged sperm DNA can lead to early embryonic or fetal death and can have a dramatic impact on health of the offspring, higher than 20% has been observed in Spotty pig and Binlang pig suggest that adding sperm DNA fragmentation as a new parameter to the routine assessment of every ejaculate may be beneficial to the field and the sperm DFI values could be an useful reference in extrusion of subfertility breeding animals. In conclusion, by further and routinely identification of nucleus boar semen quality to ensure the sustainable conservation of Taiwan native Lanyu minipigs could be expected.

Key words: Lanyu pig, Conservation, Semen quality, Fertility