

# New application of imaging techniques in pig reproduction: from research to farm management.

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In pig as in other species, ultrasonography is generally the preferred gold standard imaging technique, mainly because of its low cost and lack of side effects. It is now implemented in more than 80% of french pig farms. Although pregnancy diagnosis is still the most frequent use, various applications are found in reproduction studies: evaluation of ovarian, uterine or genital disorders, prediction of ovulation, puberty diagnosis, evaluation of bladder or mammary infections, evaluation of embryos and fetal welfare, in vivo measurement of back fat or muscle depth .... The interest of new technologies to be used in combination, such as Doppler, 3D-Ultrasonography or micro-bubble contrast agents, should deserve further investigation. Few among other imaging techniques; such as micro-endoscopy, infrared thermography, MRI and CT; have been already implemented in pig reproduction studies. Specific imaging techniques, including CASA (Computer Sperm Analysis of movement) and immuno-staining have been developed to study boar sperm integrity and functionality and to predict fertility.