



H.F.R.I.
Hellenic Foundation for
Research & Innovation

Description of the funded research project
1st Call for H.F.R.I. Research Projects to Support Faculty
Members & Researchers and Procure High-Value
Research Equipment

Title of the research project: Investigation of boar semen fertilizing capacity changes applying biomedical techniques

Principal Investigator: Ioannis Tsakmakidis

Reader-friendly title: DIGIPIG

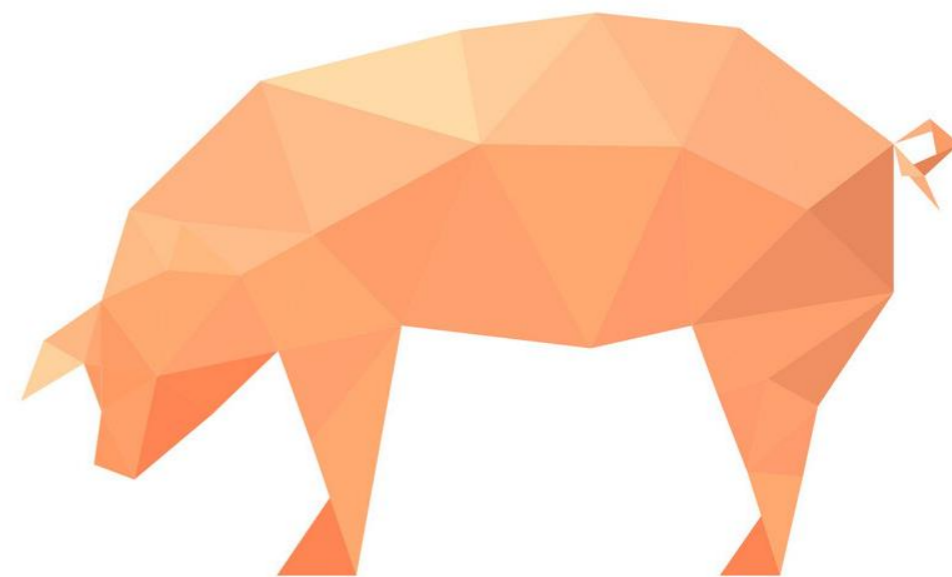
**Scientific Area: Agricultural Sciences -
Food Science & Technology - Veterinary
Science**

Institution and Country: H.F.R.I., Greece

**Host Institution: Aristotle University of
Thessaloniki**

**Collaborating Institution: American Farm
School**

Project webpage: www.digipig.gr



DIGIPIG

Application of Biomedical techniques on boar semen



Budget: 150.000 €

Duration: 24 months

Research Project Synopsis

The purpose of the present study is to develop a "predictive model" of boar field fertility, using modern biomedical techniques. According to the experimental design, the physiological changes of boars' behaviour during semen collection process will be recorded in detail and will be related with the evaluated sperm quality parameters and semen fertilizing capacity.

Any detectable stress effect on animals' physiology will be measured by biomedical techniques, whilst the collected semen will be evaluated using the most objective and modern tests, aiming to develop "bio-markers" for the objective assessment of boar field fertility.

Project originality

- *Biomarkers and a "predictive model" of boar field fertility, using modern biomedical techniques will be developed.*
- *Practical utilization of this model will be take place under pig farming conditions.*
- * *In the literature, no study has been found concerning the application of modern biomedical techniques to examine and relate boar physiology with its fertilizing capacity. Moreover, there are no studies, which applied biomedical techniques/measurements in a pig farm environment aiming to develop diagnostic biomarkers.*

Expected results & Research Project Impact

The results of this research are expected to provide new knowledge, supporting the biomedical applications in pig industry. The identification of new biomarkers of fertility is a new perspective in farm animals' sperm processing and stimulates further research.

A reliable and timely determination of the stress effects and a respective prediction of boar fertility ensure the outcome of the artificial insemination, and enhance the reproductive management and the productivity of the pig farms by increasing their profitability. Additionally, the reliability of commercial companies being active in boar/semen doses market, is supported with mutual economic benefits for their customers/pig farmers.

Furthermore, the high economic value of a pig farm is a beneficial and dynamic factor for the employments and the progress of the local community, improving the standards of living.

The importance of this funding

The funding from H.F.R.I. was the tool for the implementation of the research ideas of the scientific team, with the impact of utilizing the possibilities provided by the leading scientific fields of biomedicine and biotechnology of reproduction.

This funding supported the previously strong commitment to interdisciplinary collaboration between scientific team members. In addition, it is the beginning for more future collaborations, strengthening the extroversion of both members and project foundations through publications, announcements, website, workshops and other actions of the project.



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