PROINVESA GROUP
DANIEL SAMMARTINO

proinvesa group

1. Who I am

-Graduate as engineer in Argentina as top student in the class.

-MBA at Harvard Business School

-Long corporate life: CEO of large Argentinean industrial group

- Becoming an entrepreneur at 60

2. PROINVESA GROUP

REAL ESTATTE
- Dos Lagos Villas & Marinas, Aparts & Spa

PRODUCTION/WINERIES
- Finca Sophenia
- Superuco

BIOTECHNOLOGY
- Kheiron Biotech
- Tauron
- Proinvet Innovations
- Proinpharma

GENETICS
- Cabaña Doña Sofía
- Doña Sofía Genética

THE BIOTECH ROUTE OF AN ENTREPRENEUR

<u>THE BEGINING</u>:

-The decision to clone.

-Building a state-of-the-art laboratory.

-Finding the way.

-The decision to breed.

RESOLVING THE HURDLES

- Acceptance to register the clones and the lobbies.

-Bringing an American clone to play the Argentinean Polo Open.

-Back to the future.

-Integrating the biotech chain and creating a competitive advantage.

SYNERGIES BETWEEN BIOTECH AND PRODUCTION

-Creating our own market.

-Alliance with the best polo player in the world.

-Ownership of 100 clones of the best breeds.

BECOMING THE MOST ADVANCED HORSE CLONING LAB IN THE WORLD

-Cumulative production: more than 200 clones in 6 years.
-Productivity: 50 clones/year for 2 consecutive years. This year projecting to produce more than 70.
-Health: Zero defect, a world breakthrough.
-First gene edited equine embryo in the world.

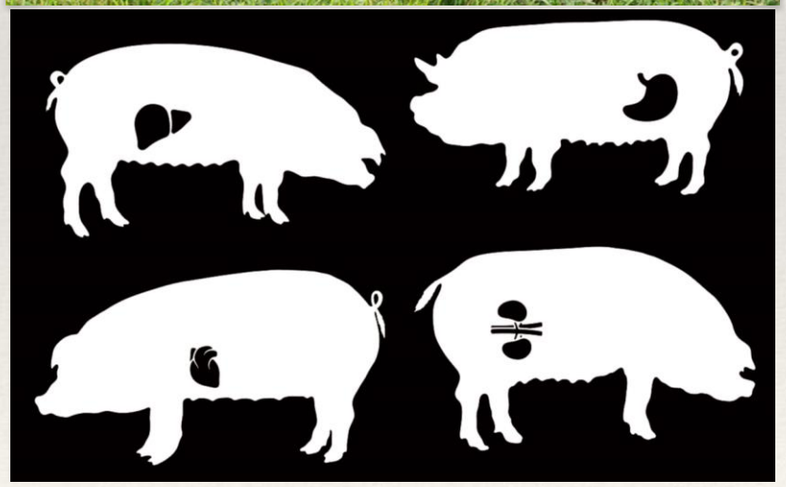
4. THE BIOTECH HIGHWAY: NEW FOCUS AND OPPORTUNITIES

-Animal welfare and enhancement.

-Precision breeding.

-Medical treatments.

-Xenotransplantation and human health.



Leading biotechnology companies from the United States and Argentina work in precision breeding through a gene editing project that will revolutionize the world cattle industry

Acceligen, together with the Argentinian Kheiron Biotech, a Proinvesa group company, and TransOva Genetics from the U.S., has launched a biotechnology project unique in the world which allows for a substantial improvement of productivity and will contribute to fighting poverty and hunger in Sub-Saharan Africa

To carry out this Project a $3.68 million dollar grant was received by Acceligen from the Bill & Melinda Gates Foundation.

- **5 or 6 gene editing events are planned**
- **GIR (Brazil) and Holstein (USA) breeds have been chosen for their milk production and resistance to tropical climates.**
- **Some of the traits shall be, hornless editing (celtic sequence), slick sequence (cut in the prolactin promotor, which generates short hair and therefore more resistance to heat stress), trypanosoma parasite resistance, and 2 o3 more traits under study.**
- **THE OBJECTIVE IS THAT ONE OF THE EDITED ANIMALS COULD TRIPLE THE EXISTING ONES IN PRODUCTION.**

MAXIMIZING THE NATURAL POTENTIAL OF ANIMAL DNA

PRECISION BREEDING

- FOOD PRODUCTIVITY: HIGHER PROTEIN CONTENT
- ANIMAL HEALTH: DISEASE RESISTANCE/ LOWER HEAT STRESS
- SPORT OPTIMIZATION: POWER / SPEED / METABOLISM

INSTEAD OF ARTIFICIAL SELECTION OF INDIVIDUALS AND RANDOM RESULTS

1. Identifying the NATURAL GENETIC SEQUENCIES codifying the best attributes
2. Acquisition of the combination of sequences through gene editing
3. Production of animals with better attributes in one step/generation via cloning

The resulting DNA sequence is present on individuals of the same species?

PRECISION BREEDING

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PERFECT ALLELIC REPLACEMENT

NO OGM **NOT REGULATED**

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1. INCORPORATION OF NATURAL SEQUENCES IN NON RANDOM WAY
2. BETTER ATTRIBUTES IN ONE GENERATION (ACCELERATION OF GENETIC PROCESS)
3. REDUCTION IN NUMBER OF ANIMAL BRED AND VOLUME OF RESOURCES TO ACHIEVE OBJECTIVE

5.ARGENTINA AND KHEIRON: A PLATFORM

- - Cloning skills in house.
- - Gene editing and CRISP-Cas 9 skills in house.
- - Qualified scientific human resources.
- - Excellent ranch and agriculture facilities.
- - Updated, simple and safe biotech regulations.
- - Implementation speed.

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group

DANIEL SAMMARTINO
FOUNDER & CEO

WWW.PROINVESAGROUP.COM
DS@PROINVESA.COM.AR

+54 11 4313 7799