



FORMULA LINE ENERGY CONTROL



THE SEMEN EXTENDER THAT THANKS TO ENERGY CONTROL GUARANTEES THE BEST VITALITY OF SPERM.

SHORT TERM EXTENDER
UP TO 3 DAYS



FORMULA 3

Code	Description
1901001	Formula 3, extender for 1 lt
1901002	Formula 3, extender for 5 lt
1901003	Formula 3, extender for 10 lt
1901004	Formula 3, extender for 60 lt
1901005	Formula 3, extender for 100 lt

Code	Description
1902001	Formula 5, extender for 1 lt
1902002	Formula 5, extender for 5 lt
1902003	Formula 5, extender for 10 lt
1902004	Formula 5, extender for 60 lt
1902005	Formula 5, extender for 100 lt

FORMULA 5



MEDIUM TERM EXTENDER
UP TO 5 DAYS

LONG TERM EXTENDER
UP TO 8 DAYS



FORMULA 8

Code	Description
1903001	Formula 8, extender for 1 lt
1903002	Formula 8, extender for 5 lt
1903003	Formula 8, extender for 10 lt
1903004	Formula 8, extender for 60 lt
1903005	Formula 8, extender for 100 lt

Code	Description
1903006	Formula 12, extender for 1 lt
1903007	Formula 12, extender for 5 lt
1903008	Formula 12, extender for 10 lt
1903009	Formula 12, extender for 60 lt
1903010	Formula 12, extender for 100 lt

FORMULA 12



EXTRA LONG TERM EXTENDER
UP TO 12 DAYS

ENERGY CONTROL

LOW ANTIBIOTIC CONTENT

MINIMIZED BACTERIAL GROWTH

EFFECTIVE SPERM CELL PROTECTION



FORMULA LINE
**FORMULA IS DESIGNED TO
MAXIMIZE SPERM CELL
PERFORMANCE AND FERTILITY**

PRESERVATION
MEDIA

ANTIBIOTIC COMBINATION
TO MINIMIZED
BACTERIAL GROWTH

CONTROLLED
ENERGY SOURCE

LOW ANTIBIOTIC
CONTENT

EFFECTIVE SPERM
CELL PROTECTION

MANUFACTURING
AND QUALITY WITH
STRICTEST CONTROL

BUFFERS
PHYSIOLOGICAL PH



STABLE OSMOLARITY



WHAT IT IS ENERGY CONTROL SOURCE?

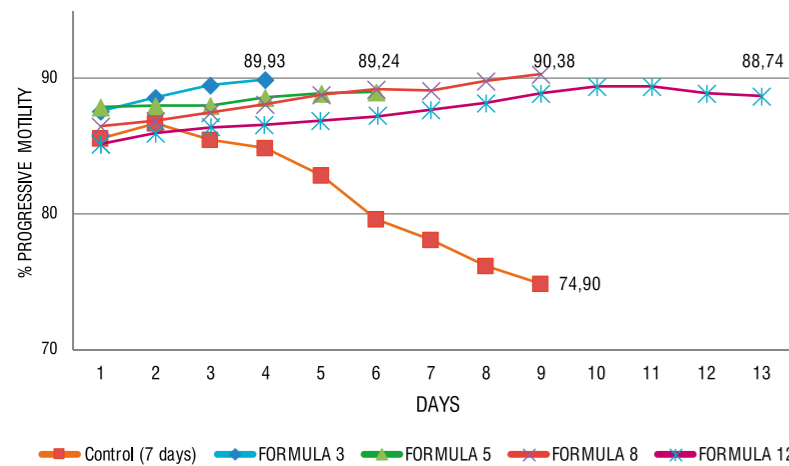
This is a great discovery and a perfect fit for our semen extenders. FORMULA includes a new component, a modular activator that regulates the energy liberation time, permits optimal control and increases the availability of more energy sources enhances storage, timely activity and fertility of the sperm.

FORMULA REGULATES THE SPERMATIC METABOLISM DURING THE PRESERVATION AND PROVIDES ENERGY FOR THE FECUNDATION

The experts at our R&D department and the Parma University have patented a new technology with direct use in different biological applications.



LABORATORY TEST PROGRESSIVE MOTILITY WITH FORMULA



Energy control shows a constant release of energy compared with other commercial extenders.

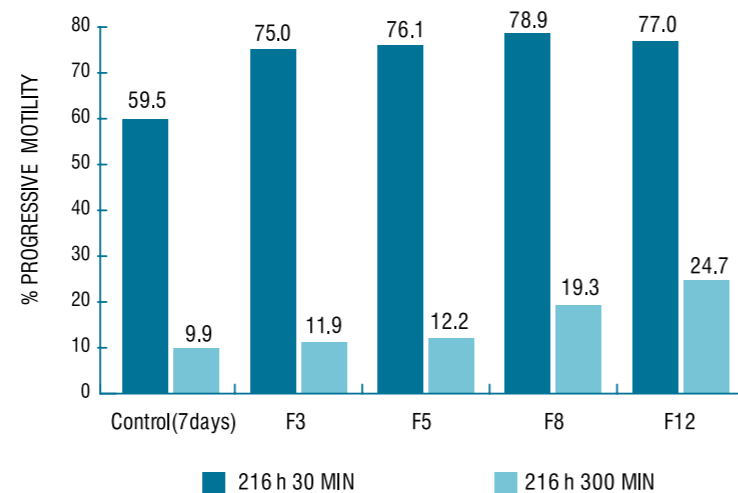
Control is a commercial 7 days extender

THERMORESISTANCE TEST

The thermoresistance test (TRT) was performed 216 h after dose preparation. An aliquot of 10 ml was incubated at 38°C for up to 300 min (TR1) and 30 min (TR2), using CASA.

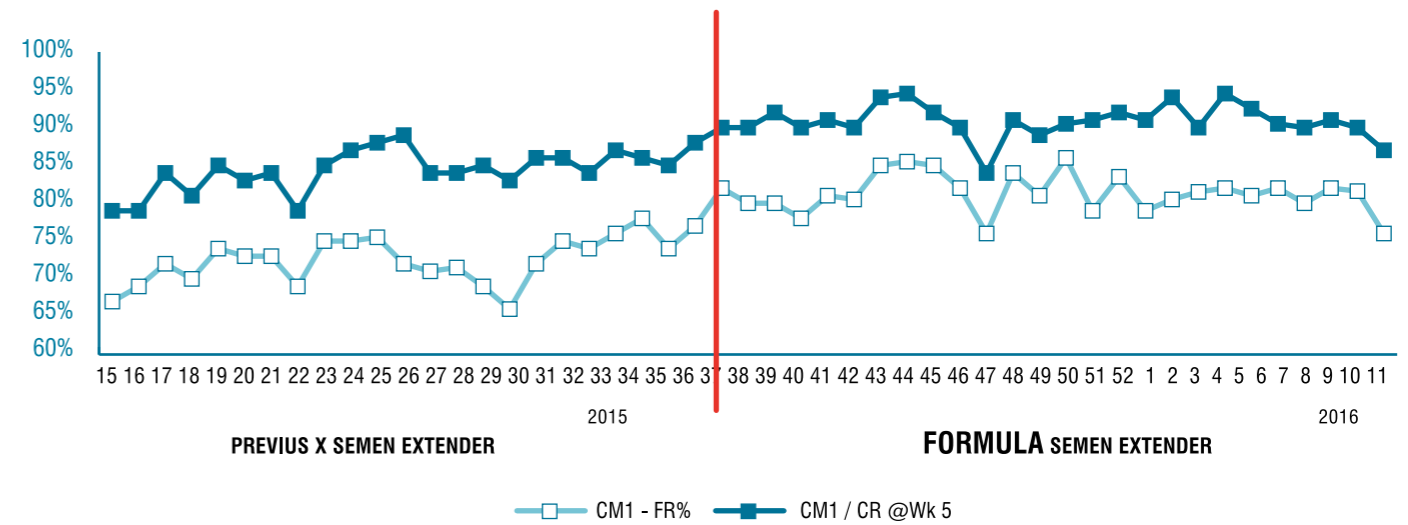
The prolonged storage and incubation time allows detecting of differences in motility not earlier observable.

Test Results Provided by an Independent Laboratory



FORMULA IS PROVEN BY RESEARCH AND FIELD TRIALS

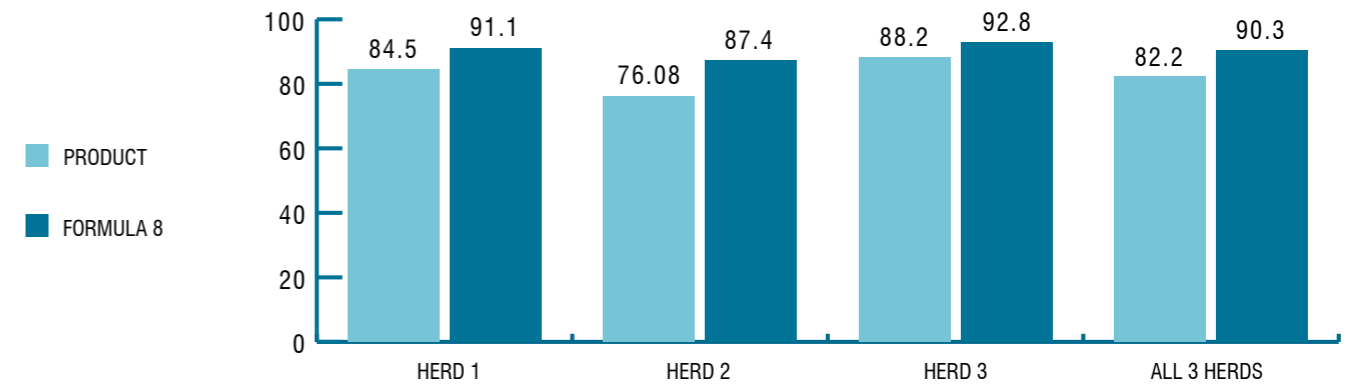
FARROWING RATE AND CONCEPTION RATE BY BREEDING WEEK IN RELATION TO SEMEN EXTENDER CHANGE (n = 41.600 inseminations)



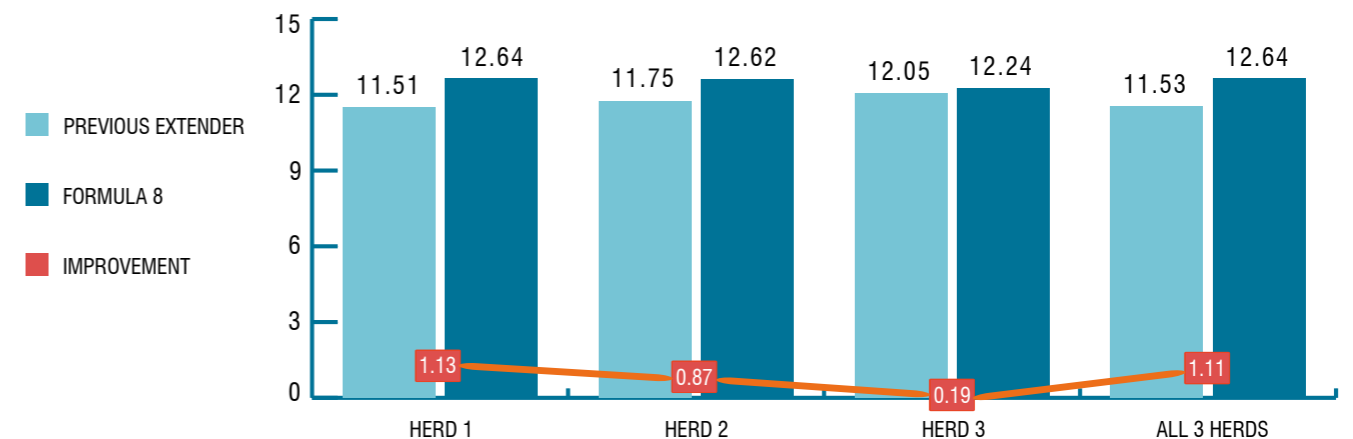
CR: Conception Rate FR: Farrowing Rate

Results from another location achieve values of 98,4% in CR and 93% in FR (not shown due to PEDV outbreak).

PREVIOUS EXTENDER VS. FORMULA 8 - Conception Rate%



PREVIOUS EXTENDER VS. FORMULA 8 - Number of piglets born alive



FORMULA HAS STABILITY AGAINST HIGH TEMPERATURES

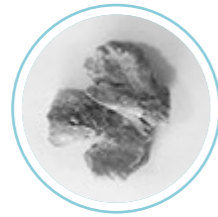
The stability of FORMULA has been challenged against two commercially available boar semen extenders.

MIXTURES AFTER 7 DAYS AT 50 °C

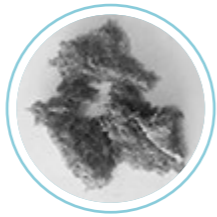
FORMULA



CONTROL 1



CONTROL 2



All Mixtures were placed in airtight packages and stored in a chamber pre-heated to 50 °C. After 7 days, packages were opened and the appearance of formulations checked. The results **showed the improved stability of Formula**, which can tolerate storage at higher temperatures without suffering deterioration.

PROCESS ANALYTICAL TECHNOLOGY PAT

Process Analytical Technology (PAT) is a system for designing, analyzing, and controlling manufacturing, through timely measurements of critical quality and performance attributes of raw and in-process materials and processes, with the goal of ensuring final product quality.



At Medi Nova, PAT is based on a Micro-NIR analysis tool, that monitors in line the advancement of the mixing process. For a further guarantee of quality, spectrophotometric analyses by Micro-NIR are coupled with in vitro quantitative analyses, to release a quality certification of the final product for every batch.

The PAT approach is the most efficient way to implement continuous verification strategies on all the production phases, starting from the entry of raw materials.

SCA SPERM CLASS ANALYZER

The SCA Motility and Concentration provides automated assessment of sperm concentration and motility classification by the capture of 500 spermatozoa on 2/3 fields using 1 second per field.

The software automatically calculates the sperm concentration and the percentage of sperm in the sample by motility classification: progressive, motile and non motile.

FORMULA - SOFTWARE SCA



All production batches of Medi Nova's semen extender line are tested live and analyzed with SCA® CASA System for semen analysis allows the accurate, repetitive and automatic assessment of the following sperm parameters:

MOTILITY

CONCENTRATION

MORPHOLOGY

DNA FRAGMENTATION

VITALITY

ACROSOME REACTION

LEUKOCYTES