COFA: THE ONLY EU MEDITERRANEAN BUFFALO STUD

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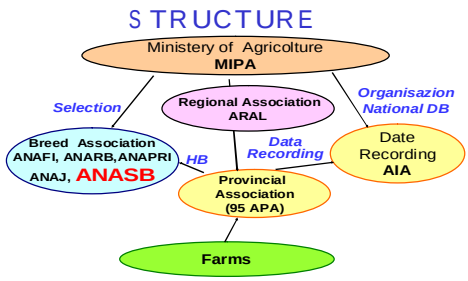
COFA STUD HISTORY

COFA, as an AI organization, has been active in the Italian AI world, thanks to its president, Arturo Casali, since 1974. Casali first as an importer, importing high quality genetics from the U.S.A. and later in 1985, as the promoter, investor and manager of an AI stud, is a well known figure in the Italian bovine industry. His Stud, situated in the large PO valley, in the northern part of Italy, first has produced a high quality line of Holstein sires but soon after has become renown through its outstanding Mediterranean buffalos.
The Water Buffalo with its enormous world population and its, up to now, small genetic development seemed to COFA an excellent opportunity to apply its know-how, acquired in years of work with the bovine species, a great challenge to improve the genetic ability of the buffalo spices and a good opportunity to develop a new market. To work on this task COFA had the advantage to find in Italy one of the more productive breed in the water buffalo population and a breeder association that had develop the tools for a serious work of genetic evaluation and progress.

THE MEDITERRANEAN WATER BUFFALO

In Italy there are more than 320.000 buffaloes in 3.000 herds. With an increase of 14 % in one year. ANASB (Italian Buffalo Association) is in charge of the herd book with 40.000 milking buffaloes registered and monthly controlled on their production. Average production in 270 days in Italy is 2469 Kg with 8,40% fat and 4.70 % of protein.
The Genetic Herd book of the buffalo species has been created, by a ministry decree, in 1980 and was kept by AIA (Italian Breeders Associations) until the year 2000. Then the MIPAF (the Ministry of Agriculture) gave the management of the Genetic Herd book to ANASB. The same year another decree recognizes the registered buffalo as being part of its own buffalo breed called the Mediterranean Italian (Italian Mediterranean). The main characteristic of the Italian Mediterranean female buffalo is her productive capacity. In addition what is of foremost interest is that her productivity is demonstrable through her pedigree in which we can find productions (milk, fat and protein), type evaluation, and the genetic index of herself and her ancestors. This is possible since Italy is the only country in the world with a Genetic Herd book for the buffalo species, through which it is possible to program genetic progress thanks to progeny testing and the indexation of the animals through the method BLUP.

ETTORE IT065800812386 from Bellelli Farm, Salerno Italy.
Typical Italian Mediterranean water buffalo housed in the Cofa stud.



ANASB

(Associazione Nazionale Allevatori Specie Bufalina)
National Breeders Association of Buffalo Species

ANASB Core Services

- Herd Book management
- Genetic improvement
  1. Type classification and Shows
  2. Services for APA
  3. Services for A.I. Centre

ANASB Herd Book

- Management of buffalo breeders registrations
- Pedigree data management
- Publication of annual statistics
- Genealogical certifications
- DNA Bulls, Bulls' Dams
- DNA Daughters of Progeny Test
- Genetic Index Female Buffalos
- Genetic Index Bulls

ANASB Promotion

- Promote Italian water buffalo in Italy and abroad
- "La Bufala Italiana" magazine
- International Projects

ITALIAN SELECTION INDEX

Blup-Animal Model

$$PKM = Milk \times \frac{3{,}5 \times (\%\ Protein) + 1{,}23 \times (\%\ Fat) - 0{,}88}{100}$$

PKM = Production Kg Mozzarella

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ITALIAN BREEDERS ASSOCIATION

The National Breeders Association of Buffalo Species' (ANASB) main services are the management of the Herd book (registering new buffaloes and certifying their pedigrees), the creation of the selection index, the evaluation of genetic and type indexes, and the promotion of the Italian water buffalo in the world.
The Italian Selection Index or PKM, which stands for Production Kg Mozzarella, is the primary tool for the selection of bull's dams and bull's sires. The PKM is purely a Production Index which is designed to select animals best suited for the production of milk for Mozzarella cheese, which is the only use of the Italian water buffalo's milk.

COFA SELECTION SCHEME

Today, thanks to ANASB (Fig-1), which gets the lactations data from AIA (Italian Breeders Association), which collects them, and manages the evaluation and publishes the annual statistics, COFA is able to select on a population of 40.000 registered females buffaloes, every year, the best 1% to become bulls' dams. In addition, COFA gives great importance to the morphological characteristics, and in particular CoFA's experts control bull's dams for udder composite, feet and legs, and milking speed.
Out of every calf born in this restricted population, COFA selects 10 young bulls, which must have at least a pedigree of three generations, to be progeny tested. Of these at least three are expected to graduate to the top list for PKM and to become active bulls for the Italian and the export market in addition to become in due time bulls sires themselves.
Today almost all the most important herds in Italy work with COFA in young bulls selection, and CoFA's goal is to work with as many herds as possible to promote in Italy as well as in the rest of the world the extraordinary value of the Mediterranean buffalo.

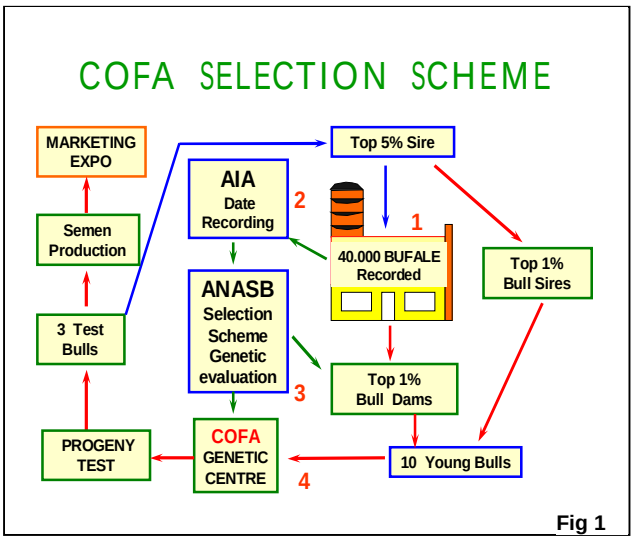

Fig 1

LUCKY da Izano IT019500348511 from **Massar**i Farm Cremona Italy
Mother best lactation

days	Milk Kg	Fat %	Protein %
270	4161	8,00	4,60

BELLE E PAPA' IT06500263360 from **Morese** Farm Salerno Italy
Mother best lactation

days	Milk Kg	Fat %	Protein %
270	4225	8,60	4,80

TORCINO IT061000104834 from **Vitale** Farm Caserta Italy
Mother best lactation

days	Milk Kg	Fat %	Protein %
252	3913	8,70	4,60

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COFA'S BARNS

A European Union regulation states that an AI stud must house in its premises only one species, and in fact COFA houses its Buffalo in special barns in a location separated from the Holstein bulls.
In the barns each bull is tied at its individual stand **(photo 1)** and fed corn silage ray grass hay, alfa alfa hay and concentrate. The beds are made of sawdust and the barns are cleaned and disinfected once a month.
The buffalo sires, before being put into production are kept in quarantine for 3-4 months in another stable and during this quarantine period they undergo several health tests to meet all the health requirements needed for production semen. Thanks to all these attentions COFA is the only European Buffalo Stud authorized to produce by the European Union through the protocol number **IT01bu**.

Photo 1

Photo 2

SEMEN COLLECTION

The most important aspect of semen collection is the training of young sires. Training a young buffalo sire to the collection is often quite difficult because this species is very sensitive to people and therefore a lot of patience is necessary in this phase in order not to make the animal nervous and risk to fail the collection itself.
The training and the collection takes place in the collection area **(photo 2)** with the help of other animals as teasers.
After the collection the semen is immediately transferred to the laboratory. At COFA the buffaloes are collected twice a week with one or two ejaculates per day according to the demand of the semen or according to the productive capacity of the bulls.

Photo 3

SEMEN PROCESSING

To obtain good results during the insemination it is essential to produce semen of excellent quality. COFA follows specific procedures for the handling of buffalo semen and thanks to this it is capable to obtain excellent results in the stables.
In COFA protocol for semen handling, in additional to the control of motility and semen concentration, a lot of importance is given to the morphological evaluation of the spermatozoa **(photo 3)** which is essential to evaluate their real insemination capacity. In additional, lot of attention is also given to the freezing phase.
At COFA special freezing curves are used and in some cases customized freezing curves are set up for each sire. The quality control after frosting is very strict **(photo 4)** and it is conduced with the aid of particular software which controls the progressive motility and concentration.

Photo 4

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PACKAGING AND SHIPPING

After the quality control is finished the semen is kept in quarantine for 30 days and later it is stocked in special containers (**photo 5)** at a temperature of – 196° C.
COFA buffalo semen can be sent all over the world, the containers are held at COFA semen shop (legal headquarters for commercialisation) **(photo 6)** and are shipped with all due documents required by the importing country, be those, health certificate, genealogical certificate or other.

HEALTH PROGRAM

To be able to ship the semen everywhere in the world COFA must follow a very rigid health control protocol, in fact all the sires in production must undergo the following health test

Every 28 days:

- Leucosis
- Brucellosis
- IBR sieroneutralization
- BVD sierological + virological
- Leptospirosis
- Blue Tongue
- Q Fever
- Campilobacteriosis
- Tricomoniasis

Every 3 months:

- Tuberculosis
- Paratuberculosis

All these tests are executed under the supervision of the local health authority (ASL), which is the local unit of the Health Ministry

O-B-ONE da Izano IT019500215620 from **Massar**i Farm Italy
Mother best lactation

days	Milk Kg	Fat %	Protein %
270	5118	7,64	4,30

Photo 5

Photo 6

CAESAR da Izano IT019500148631 from **Massar**i Farm Italy
Mother best lactation

days	Milk Kg	Fat %	Protein %
270	4161	8.00	4.60

CONCLUSION

COFA mission is to lead in the development and marketing of superior livestock genetic products and services.
Cofa is committed to helping buffaloes producers maximize economic benefits by breeding animals of exceptional quality