

3^D IBF TRAINING COURSE ON BUFFALO MANAGEMENT AND INDUSTRY

The 3^d IBF Course on Buffalo Management and Industry successfully ended. The Course was organized by the IBF together with the CREA Research Centre for Animal Production and Aquaculture in Monterotondo, Rome (Italy).

The CREA Monterotondo Unit is involved in the research and development of buffalo breeding, becoming a reference point both at national and international levels, for those working in the sector. The different research projects carried out up to now, have led to a deeper understanding of buffalo physiology that influences breeding efficiency: in particular reproduction and nutrition which affects milk and meat production. Particularly important in this regard is the study of product traceability and shelf life of buffalo products. The Unit was also part of the consortium to sequence and identify the buffalo genome.

In the last years, the research looked for a sustainable breeding: reduction of energy production costs, reduction of water resources in the cultivation of fodder for livestock feed, reduction of nitrogen emissions, use of by-products and sewage for biogas production.

In this regard, since 1997 the Unit has hosted the International Buffalo Federation (IBF) secretariat, which aims to promote research and development of the buffalo species all over the world and organize the world congresses and training courses.

Participants came from all over the world: Canada, Costa Rica, Cuba, Guatemala, Bolivia, Brazil, Bulgaria, Romania, Greece, Iran, and Thailand. Lectures highlighted the actual socio-economic and environmental impacts of the buffalo breeding at nowadays and the best practices to obtain meat and milk products of high quality. Participants stated that the Course was “memorable, practical, fruitful, and with lots of fun!”

Welcome Reception at CREA, Monterotondo (Rome)



Prof Antonio Borghese, the IBF General Secretary, gave the welcome speech and started the course underlying the importance of Buffalo in the World. The day continued with lectures by CREA buffalo specialist on: buffalo Genetic, reproductive Management, Buffalo

Meat Quality and Production, Mozzarella Cheese Production, Agricultural Waste Recycling and Green Energy.



EXPERIMENTAL FARM OF CREA, MONTEROTONDO (ROME)

Visit to the Giancarlo D'Angelo Farm and Cheese Factory (Monterotondo-Rome)

Acquired in 1937, the Giancarlo D'Angelo Farm extends over two hundred hectares located between the Tiber River Basin and the Marcigliana Nature Reserve. The farm has hosted dairy cows for over 70 years then, in 2012, it was converted to buffalo livestock. Today the farm is located on 200 hectares of land, on which forage, cereal and leguminous are grown, producing all the fodder and most concentrated (corn, triticale, broad bean) needed to feed the animals. The farm owns about 150 buffaloes whose milk is processed into the small cheese factory belonging to the estate. In addition to the traditional “buffalo mozzarella”, “ricotta”, “burrata”, “stracchino” and “caciocavallo” are also produced.



VISIT AT D'ANGELO FARM AND CHEESE FACTORY

The Animal prophylaxis Research Institute (IZS-LT) in Rome



LECTURE AT IZSLT OF ROME

The Istituto Zooprofilattico Sperimentale delle Regioni Lazio e Toscana (IZSLT) (Animal Prophylaxis Research Institute) is a public body operating in the frame of National Health Service with duties related to animal health and welfare and food safety. Over such areas it provides services in diagnostic of animal diseases and zoonosis, microbiological, chemical and physical controls over safety of foods, food production chains and animal feed. On the same areas, it performs research, epidemiological surveillance, continuous training and international cooperation activities. Services are provided to Competent Authority such as Local and Regional Veterinary and Public Health Services, Ministry of Health, Border Inspection Posts, Environmental Control Bodies and other public and private stakeholders. IZSLT covers the geographical area of the regions of Lazio and Toscana. The headquarter in Rome and the eight territorial sections in the main regional sites carry over its tasks in the regional territorial areas.

Assisi



Moving from Rome (Lazio Region) to Perugia (Umbria Region), we spent the night in Assisi, with a charming walk in the rain through the alleys of the small medieval town and a taste of Umbrian cuisine at the Hotel Parco dei Cavalieri Restaurant. Assisi is well known as the birthplace of St. Francis of Assisi, patron saint of Italy, founder of

the Franciscan order, and one of the most popular Catholic saints in history. Assisi's main attraction is the 13th-century Basilica di San Francesco, which contains the sacred relics of Francis and beautiful frescoes of his life.

Chiacchierini Bull Centre in Civitella d'Arna (Perugia)



GROUP IN THE CHIACCHIERINI CENTER

The Chiacchierini Bull Center is focused on the breeding cattle and buffalo bulls for the production of frozen semen of superior genetics through an Artificial Insemination Center, recognized under the terms of Italian and European regulations. Founded 50 years ago, from 1975 is managed by the Chiacchierini family. The stud is in the center of a property of 55 hectares that ensure a natural protective barrier acting as a sanitary cordon. Since 2000, the selection activity has been

developed further, through the implementation of a progeny program on the Italian Mediterranean Buffalo, aiming at enhancing the genetic specificities that characterize Italian breed.

Lectures about: Semen production and Official Veterinary Control procedure adopted in a Buffalo Bull Center; Breeding value, Genetic gain and Optimum breeding plan; New approaches for Pregnancy diagnosis in buffalo, were given.

Afterwards, the outdoor buffet lunch in pleasant surroundings with beautiful countryside all around



GROUP AT CHIACCHIERINI BULL CENTER (WEB PHOTO)

Latina section of The Animal Prophylaxis Research Institute (IZS)

Latina province in Lazio region, due to its agro-geological characteristics and its strong vocation to animal breeding, possess a remarkable livestock rich in quantity and quality. The Latina section of IZS has veterinary and technical specialized staff and is equipped with laboratories for Diagnostics, Food Microbiology, Milk and Serology. Diagnostic activities for animal's infectious and infective diseases and zoonosis are carried out.

A special laboratory is dedicated to the Buffalo Pathology with particular attention to the study of parasitosis, the causes of mastopathies and the safety of dairy products. During the visit we had the opportunity to deepen the knowledge about the activities of the Latina section of ISZ and particularly about prophylaxis for brucellosis and tuberculosis and correct practices of milking and milk production measurements.

Agricola PERSEO Farm

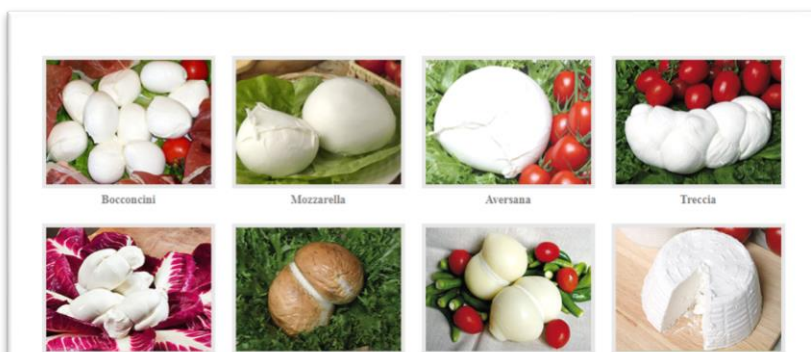
In the early 50s, the Agricola Perseo Farm, of the Realacci family, undertaken the breeding of Friesian dairy cows in the plain of Agro Pontino. In the 90s, Romano Realacci, the current owner of Perseo Cheese Factory, inheriting the passion and expertise in breeding, continued the traditional family activity with the same dedication but replacing cows with buffaloes up to counting over 650 heads. The milk was utilized by small local dairies to produce their dairy buffalo products. In 2013, a cheese factory was added to the Agricola Perseo Farm. The main product of the cheese factory is obviously the mozzarella but a wide range of



VISIT AT PERSEO FARM

fresh, semi-aged and aged dairy products are made utilizing the milk of buffaloes raised entirely in the annexed farm. The 47 acres of land attached to the farm and further 27 managed in sharecropping, are cultivated with corn, wheat and alfalfa; products that are entirely used to feed their buffaloes.

Casabianca Farm and Cheese Factory – Fondi (Latina)



BUFFALO PRODUCTS AT CASABIANCA CHEESE FACTORY (PHOTO WEB)

The Casabianca Farm is a green oasis in the plain of Fondi, south of Lazio region, with an extension of about 90 hectares, destined to the buffalo breeding. The milk is processed directly in the farm, in a dairy structure equipped with all the

innovative machinery necessary for this purpose.

Despite this, the work still involves all those manual steps dictated by tradition such as stretching, shaping and salting: in addition to normal commercial sizes, *treccioni* and

treccine (large and small braid) are also produced, mozzarella from 700 and 800 grams. Casabianca also produces bocconcini, aversana, nodini, ricotta and caciocavallo (Figure 14).



CASABIANCA FARM (FOTO WEB)

A stroll through the ancient ruins of Ostia Antica



Nowadays, Ostia Antica is a large archaeological site. Located just 19 miles (30 km) west of Rome and on the River Tiber. During ancient Rome, it was one of the most thriving cities in the region thanks to its status as Rome's harbor city.

After the collapse of the Empire, the city fell into decadence, was eventually abandoned and remained untouched and magnificently preserved for centuries.

This beautiful archaeological site of the ancient city offers you a direct glimpse at the religion, commerce and social life of the ancient Roman society.

<http://www.ostia-antica.org/>

Fattoria Reale del Torcino –Ciorlano (Caserta)



FATTORIA REALE DEL TORCINO (CASERTA) (PHOTO WEB)

We moved from Lazio to Campania region to visit the Fattoria Reale Del Torcino. The farm currently extends to about 300 hectares in the north of Caserta province and has more than 2000 buffalo heads for either milking or fattening. They adopt the out of breeding season mating system to have more calving and more milk production in the spring-summer period when the market demand for mozzarella cheese is higher. In 2016, average milk production between January and September was 6,5 tons per day, reaching a peak between July and August (9,0 tons per day) and a low between January and February (4,0 tons per day). The farm produces the fodder to feed their animals: alfa alfa, corn, triticale, ryegrass. Since 2012 it has been acquired by the Fattorie Garofalo Group, Leader Company in the production of Mozzarella di Bufala Campana DOP.

Caseificio “Casaro del Re” (Capua- Caserta)



CASARO DEL RE CHEESE PRODUCTION

The cheese factory Casaro del Re is in Capua, an ancient town of great artistic value, in the province of Caserta. This is an area where the buffalo breeding has an established presence, in fact, are from the XII century the first historical documents that demonstrate how the monks of the monastery of San Lorenzo in Capua, used to offer, a cheese called "mozza" (truncated, cut with the hands), to pilgrims visiting the monastery. The cheese factory is part of the Fattorie Garofalo group. The milk comes from buffaloes reared in farms located in the Caserta area, properties of the same corporate group.



CASARO DEL RE CHEESE FACTORY

Once arrived at the factory, milk is processed immediately, to not lose any of its features. The recipe, temperatures, salt dosages, adjustment of the machines are entrusted to “casari” (cheesemakers) that in this way transfer their knowledge, result of centuries of competence and experience, in the special flavor of the Mozzarella di Bufala Campana DOP

Lunch in Santa Maria Capua Vetere (Caserta) and view of Capua Amphitheater



CAPUA AMPHITHEATER

The ancient amphitheater of Capua is a magical place, full of history and charm. The amphitheater was built at the end of the first century AD and the beginning of the second. It is the second largest Roman amphitheater after the Colosseum in Rome and it was modelled on it. The Capua structure was the home of the first and most famous of all gladiator schools.

Gladiatorial training schools are attested since the late second century at Capua, where elite Romans drew gladiator trainers for Rome.

Buffalo Beef center - S. Angelo in Formis, Capua (Caserta)



SKIN PACKAGING

Buffalo Beef, part of the Fattorie Garofalo group, is a branch company that breeds young buffaloes for meat production, with the aim of promoting and marketing both fresh meat cuts and delicatessen.

The visit to the center gave the opportunity to observe how the meat was processed before marketing. In particular, we saw the Skin packaging, which is the packaging system that extends the shelf life of food because it completely removes the air, especially atmospheric oxygen. This way, the overwrap film adheres completely to the tray and the food it contains, just like a second skin. The nutritional characteristics of the buffalo meat are reported on the packaging of the trays. Finally, a label that allows the traceability of the product is put on the packaging.



BUFFALO MEAT



BUFFALO PRODUCTS

The Animal Prophylaxis Research Institute (IZSM) in Portici – Naples

The “Istituto Zooprofilattico Sperimentale del Mezzogiorno” (IZSM), is one of the 10 Zooprophyllactic Institutes present in Italy which operate within the National Health Service, in the field of Hygiene and Veterinary Public Health. The headquarter in Portici (Naples) and eight territorial sections are present in the southern regions of Campania and Calabria. The IZSM is the National Reference Centre for Hygiene and Technologies of Water Buffalo Farming and Productions.

During the Training Course, lectures were focused on the activities of the Reference Centre and in particular on the development of a new approach on buffalo welfare and traceability system in the Italian buffalo production chain.



LECTURE AT ANIMAL PROPHYLAXIS RESEARCH INSTITUTE (IZSM) IN PORTICI – NAPLES

Improsta Farm – Capaccio-Paestum (Salerno)

The farm, located in Piana del Sele (the river Sele plain), in the countryside of the province of Salerno, is owned by Campania region and covers an area of about 140 hectares. The cultivation of the fields, directed at forage, horticultural, fruit and forest, is practiced both with classical and integrated method.

The farmstead consists of several buildings of considerable historical and architectural interest. In addition to the ancient guesthouse, we can admire the ancient "Bufalara", a rural structure of the seventeenth century that served as a shelter to the staff responsible for the care of livestock.

The farm has about 300 buffalo heads for milk and meat production and an experimental cheese factory aimed to training and demonstration.



IMPROSTA FARM (FOTO WEB)

Tenuta Vannulo – Capaccio- Paestum (Salerno)

We moved in the Piana del Sele (the river Sele plain) among the Greek temples of Paestum (IV BC), part of the territory it was used to call Magna Grecia, one of the richest and most flourishing Greek colonies of southern Italy on the west coast of the Tyrrhenian Sea. In the shadow of the ancient temples is located the Tenuta Vannulo.

The Vannulo farm manages two hundred hectares of land dedicated to organic farming where they grow fodder for their buffaloes. Three-hundred milking buffaloes are present in the farm.



Showers and brushes, rubber mats and music, avant-garde techniques of milking are utilized to safeguard animal welfare and milk quality. The milking robots allow the animal self-management with a more natural and less stressful rhythm of milking.

The processing of mozzarella is made entirely by hand exclusively with the milk of their own buffaloes and they sell the products directly to the consumers in the farm where since 1988 there is their unique “zero-mile” selling point .

Other than the products of tradition, we can taste new flavors such as yogurt, pudding and ice cream, made with buffalo milk.

The factory has also a handmade workshop for buffalo leather processing.



MILKING ROBOT

University of Naples “Federico II” Department of Veterinary Medicine and Animal production



LECTURE AT UNIVERSITY OF FEDERICO II NAPLES

The Department is well known for its contribution to both the improvement and knowledge dissemination of buffalo breeding and exploitation of buffalo products under the leadership of Prof. L. Zicarelli. During the visit lectures about state of art in research on buffalo, nutrition and feeding in buffalo, advanced reproductive technologies and Reproductive management in buffalo cows were given.

CNR - Institute for the Animal Production System in the Mediterranean Environment (ISPAAM) (Napoli)

The Institute for the Animal Production System in the Mediterranean Environment takes interdisciplinary interest on Animal production research themes by using a systemic approach as well as knowledge & methods from different cultural areas (biology, physiology, molecular genetics, agronomy, cytogenetics, biochemistry, proteomics, nutrition, microbiology, forage cropping, and applied mathematics).



LECTURE AT CNR (NAPLES)

Research activity is realized in collaboration with both National and International research centers and includes the following investigation themes: Forage production and environmental sustainability; Animal systems, biological sustainability and product quality; Biodiversity and genetic improvement; Farming optimization models. We had the opportunity to know about the latest researches of the Institute on buffalo and particularly: proteomic approaches for the evaluation of buffalo dairy products,

cytogenetics, and physiology of stress response in buffalo.



The visit was concluded by testing a world famous “pizza napoletana”!

Closing ceremony and certificate of attendance consignment to the participants at CREA in Monterotondo

After an emotional ceremony for certificate of attendance consignment, the course successfully ended with a farewell Italian' specialties dinner, quality wine tasting with sommelier and live music.



Next 4th IBF TRAINING COURSE ON BUFFALO MANAGEMENT AND INDUSTRY

will be organized on 7-17 May 2019 (provisional date) by IBF and CREA - Animal production and Aquaculture of Monterotondo (Rome).

A maximum of 30 places are available, and a preference will be given according to registration order.

All the information are available in the IBF web site

<https://internationalbuffalofed.org/4th-ibf-training-course-on-buffalo-management-and-industry/>