The “bumpy” road of camel milk approval from the United Arab Emirates to the European Union
the “Camelicious” experience

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Dromedaries: as potential food source in Arid zone countries

- Excellent **adaptation** to the harsh environment
- Underestimated **production potential**
  - Meat production (FAOstat: **356 000 tons in 2009**)
  - Milk production (FAOstat: **1.6 million tones in 2008**)
- **Low productivity** due to nomadic, extensive management systems in rural areas
- **Knowledge on intensive management** system on large-scale farms and veterinary care has been limited

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EICMP is the world’s 1st integrated, large-scale camel dairy farm established in 2006
Excellent adaptation to harsh environment and heat stress

The dromedary can produce more milk and for a longer period of time than any other species in harsh environment

(Farah and Younan, 2005)
Camel population, milk and meat production from 1961 to 2009

- Population: ↑ 2.0x since 1961 (2.1% yearly)
- Milk production: ↑ 2.6x since 1961 (2.5% yearly)
- Meat production: ↑ 2.9x since 1961 (3.5% yearly)

Faye & Bonnet, 2012
Most milk is produced by hand in traditional farming systems.

Camel milk is the “white gold” of the desert (medicinal properties).
Importance and role of dromedaries in the society

- Important socio-economic bond between humans and camels
- Camels are “special” companion animals representing wealth and used for
  - Pleasure (racing and beauty contest)
  - Production (milk, meat, transportation)
  - Base of livelihood in rural areas of poor arid countries for small farmers, nomads, pastoral people
History of EICMP / Camelicious

- Pilot project in Dubai 2002-2005
- Construction of the farm 2004-2005
- Start of operation February 2006

herringbone parlour with 5 camels in Dubai

Nagy & Juhasz, 2011
Construction of the farm 2004-2005

June 2004

October 2004

June 2005

December 2004

Nagy & Juhasz, 2011
E.I.C.M.P., Home of Camelicious today

Nagy & Junayd, 2011
Milking system I. automatic system
Milking system II. bucket machines
Milking system III. semi-automatic system

The system combines tradition and new technology
The door has been opened.... new parlors (competitors) are coming up
New product development

Short communication: Survival of the characteristic microbiota in probiotic fermented camel, cow, goat, and sheep milks during refrigerated storage

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Husbandry and management system

- Large scale production close to natural conditions
- Low stress environment
- Camels are handled individually
- Healthy, happy camels, long production life
Clear design, Good Farming Practice, “camel friendly” environment
Infectious disease control

• Importance of **quarantine**
  • Standard operating procedures (SOP) in ISO Manual
  • Testing and retesting

• **Diagnosis** of infectious diseases
  • Clinical evaluation (limited efficiency)
  • Serological examination (false positive – negative)

• **Serology** (Wernery et al. 2008)
  • **Brucellosis, Tuberculosis**, Anaplasmosis, Leptospirosis
  • **FMD**, Camelpox, RP, PPR, WN, RVF, BT, ERA, BVD, EBL
  • Trypanosomosis, Toxoplasmosis, Neosporosis

• **Lack of validation** of most of the diagnostic tests

• **Camels positive for OIE diseases are removed**
General requirements of international trade of camel milk

- ISO certified Farm
- Efficient Central and Local Competent Authority with good Public Health and Animal Health control programs
- Approved legislation, control and certification processes by our trading partner: the EU represented by DG SANCO
Specific requirements for milk export into the EU

Animal products for human consumption may only be imported into the EU if three essential parameters have been satisfied:

- A 3rd **country list** is approved for that Commodity,
- An **official certificate** - including both Animal Health and Public Health requirements – has been agreed and adopted into EU legislation,
- A harmonised **EU establishment list** has been drawn up,
- Approved **National Residue Control Plan**

Earlier attempts to export milk from North Africa did not succeed (due to problems of the accuracy of alkaline phosphatase test ?)
Preliminary steps
“Scientific approach” in 2005-2010

- **Recommendations** of the OIE AD HOC group on Camelidea diseases in 2008
  - FMD is of minor importance in dromedaries, remove the species from the OIE list of FMD sensitive animals;
- **Studies on enzyme activities** after pasteurization
  - ALP is not, but LPO and GGT are suitable enzymes to verify heat treatment in camel milk.

Non of these studies had a direct role in the approval process but indirectly facilitated the acceptance of the concept.
The role of the chocolate “Business approach” in 2008-2011

- **Existing business** activity between UAE and an EU member state
  - Support within the EU
- Strong **political support** within the UAE government
- Official request, submission of dossier by MOEW (Ministry) to DG SANCO in 2010 to allow importation of camel milk and products into the EU
Official EU inspections in 2011

- **Food and Veterinary Office** (FVO) Animal Health and Public Health **missions** to the UAE to evaluate the veterinary and public health services of the entire country

- Reports are available on EU website
  - The farm were of a very **high standard**,
  - **Public Health** elements were good, but
  - **Heat treatment required according to Article 4(2) of Commission Regulation (EU) No 605/2010**,
  - **Animal Health** situation, legislation, training and organisation of the Competent Authority **required significant improvements**.
REGULATIONS

COMMISSION REGULATION (EU) No 605/2010
of 2 July 2010
laying down animal and public health and veterinary certification conditions for the introduction into the European Union of raw milk and dairy products intended for human consumption
(Text with EEA relevance)

Article 4
Imports of certain dairy products from third countries or parts thereof listed in column C of Annex I

1. Member States shall authorise the importation of consignments of dairy products derived from raw milk of cows, ewes, goats or buffaloes from the third countries or parts thereof at risk of bovine and bovine disease listed in column C of Annex I, provided that such dairy products have undergone, or been produced from raw milk which has undergone, a heat treatment involving:

(a) a sterilisation process, to achieve an $F_0$ value equal to or greater than three;

(b) an ultra high temperature (UHT) treatment at not less than 135 °C in combination with a suitable holding time;

(c) (i) a high temperature short time pasteurisation treatment (HTST) at 72 °C for 15 seconds applied twice to milk with a pH equal to or greater than 7.0 achieving, where applicable, a negative reaction to an alkaline phosphatase test, applied immediately after the heat treatment; or

(ii) a treatment with an equivalent pasteurisation effect to point (i) achieving, where applicable, a negative reaction to an alkaline phosphatase test, applied immediately after the heat treatment;

(d) a HTST treatment of milk with a pH below 7.0; or

(e) a HTST treatment combined with another physical treatment by either:

(i) lowering the pH below 6 for one hour, or

(ii) additional heating equal to or greater than 72 °C, combined with desiccation.
pH in bulk raw camel milk in 2009 to 2010

Mean =/- SEM
6.71 +/- 0.005

Nagy & Juhasz, 2011
Follow-up of the FVO missions

Expert visits with recommendations

- **Transposition** of the relevant EU legislation by a Ministerial Resolution
  - Ministerial Resolution No. (41) of 2012,
- **Training of staff** of the competent authorities,
- **Organizational changes** within the Ministry,
- “Regionalization” and “Compartmentalisation”
  - Emirate of Dubai rather than United Arab Emirates
  - Farm is a “state within the state”

UAE reached the position to meet all FVO recommendations
Voted favorably by all 27 member state representatives
Conclusions

- The approval process required a long and integrated effort from many different stakeholders,
- We took a challenge and risk as the success was not guaranteed at the start,
- Constant and continuous work is necessary to remain in compliance and keep the import permit:
  - National Residue Control Plan (cost!)
  - Inspections, trainings and certification,
- But, we have opened the door and showed the way for others to follow if there was a real demand or a business opportunity
Our staff
Thank you for your attention and the invitation!