



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



EICMP is the world's 1st integrated, large-scale camel dairy farm established in 2006

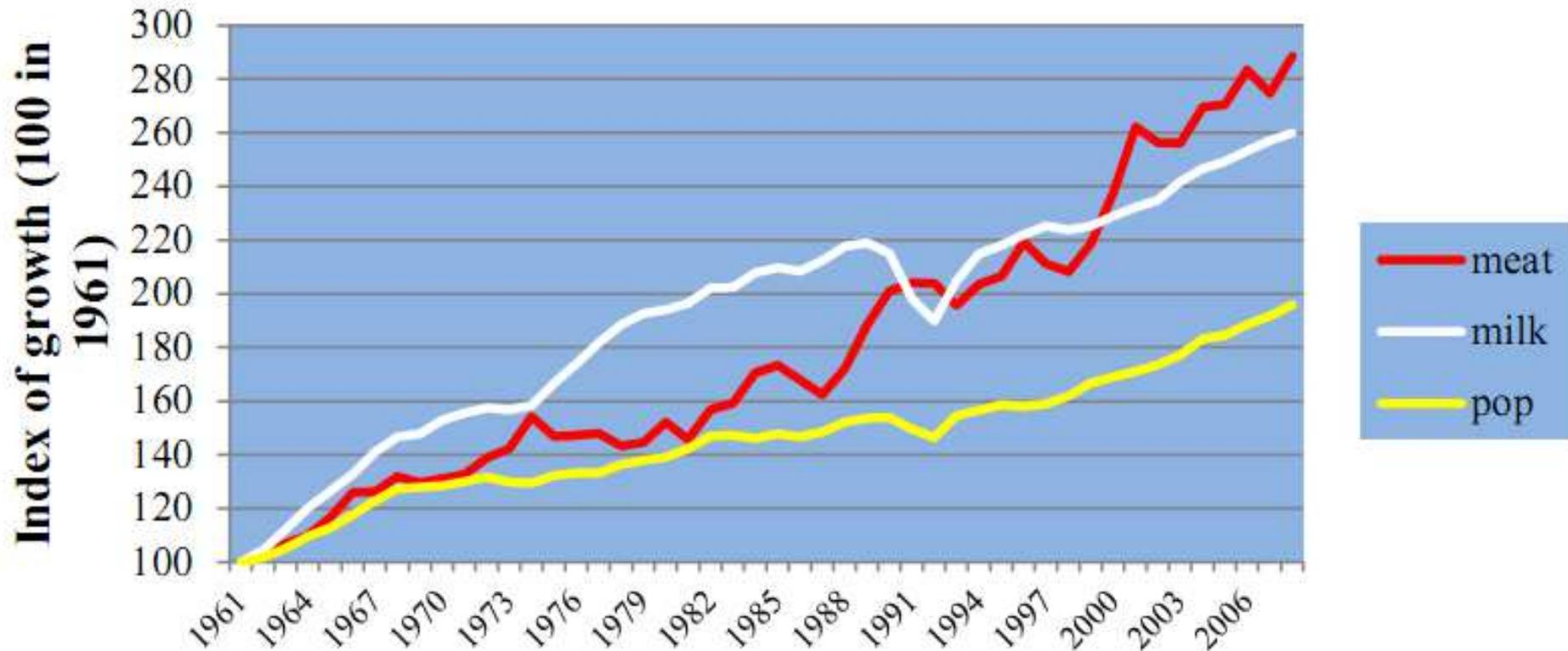
Excellent adaptation to harsh environment and heat stress



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)

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

Construction of the farm 2004-2005



June 2004



October 2004

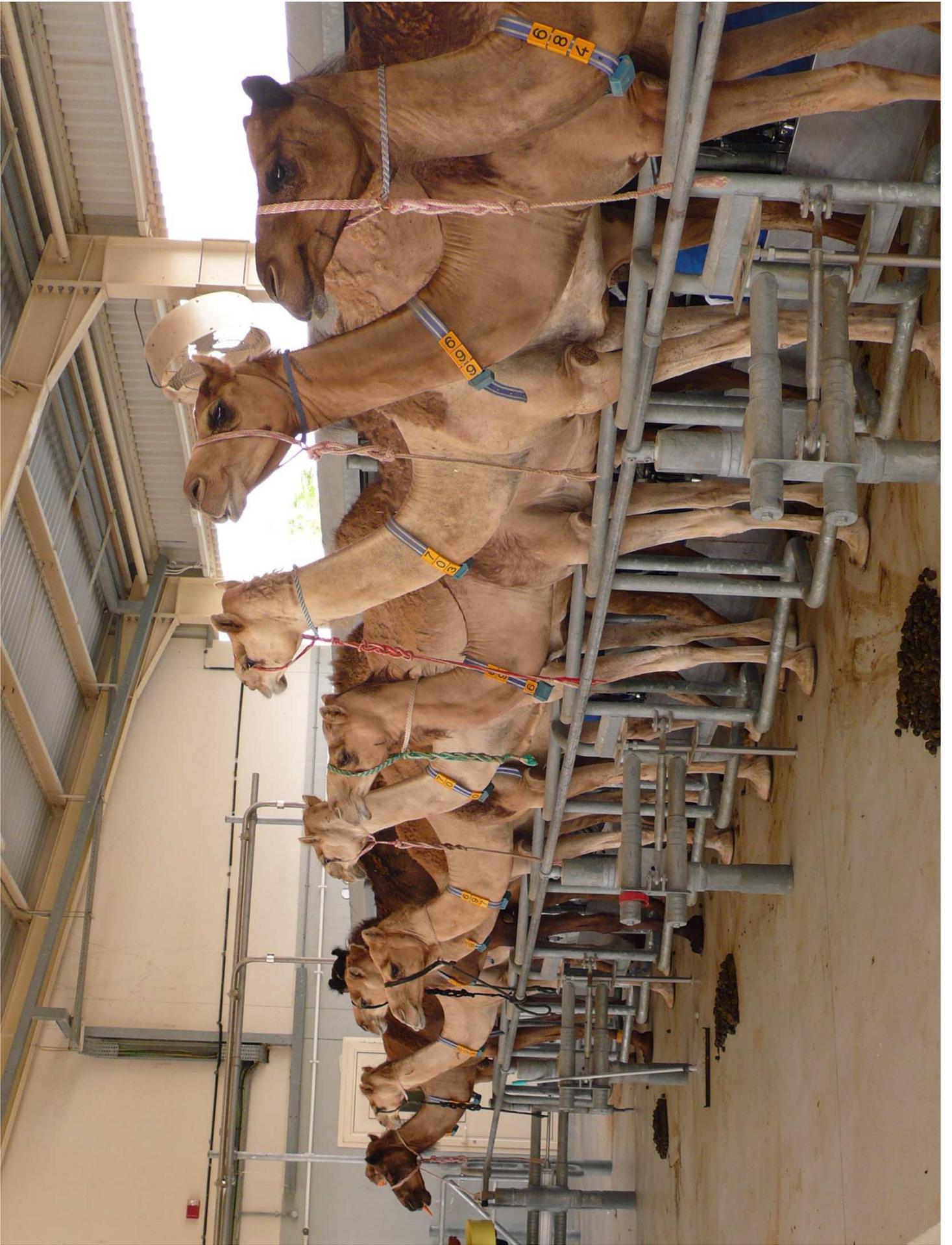


June 2005



Nagy & Juhasz, 2011

December 2004

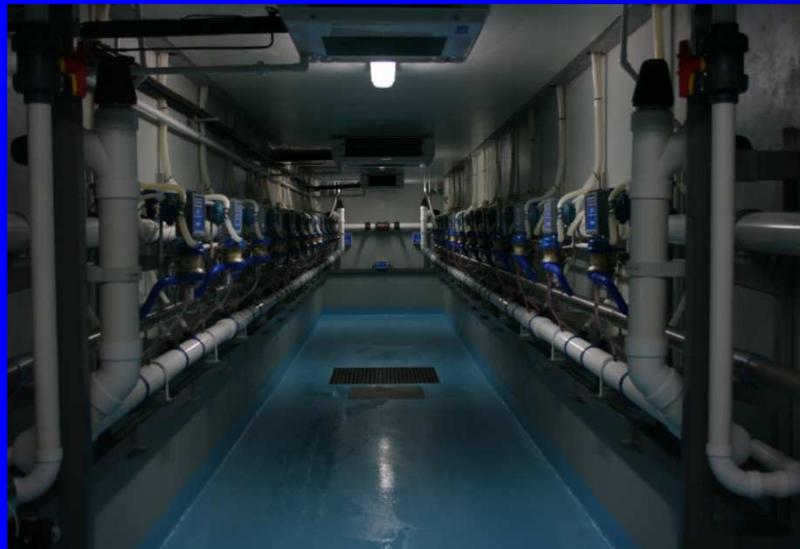


E.I.C.M.P., Home of Camelicious today



Nagy & Juhasz, 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



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

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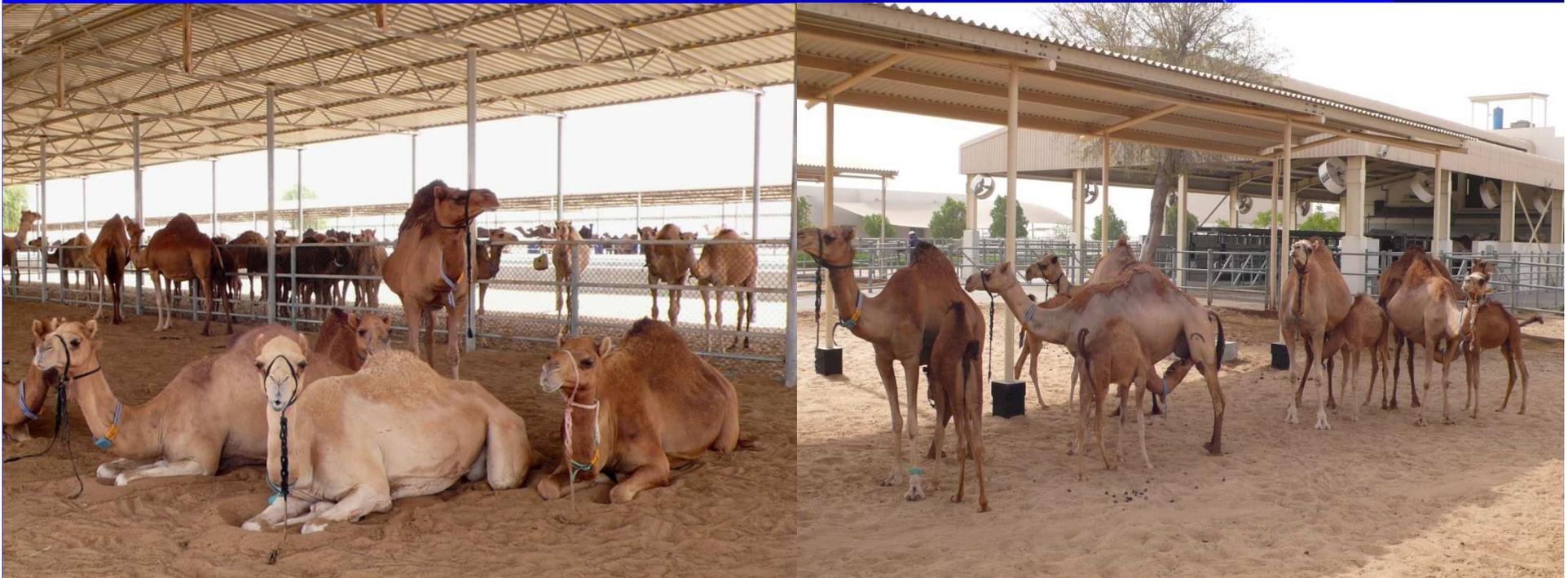
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Husbandry and management system

- 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



**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 Camelidae 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 foot-and-mouth 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;

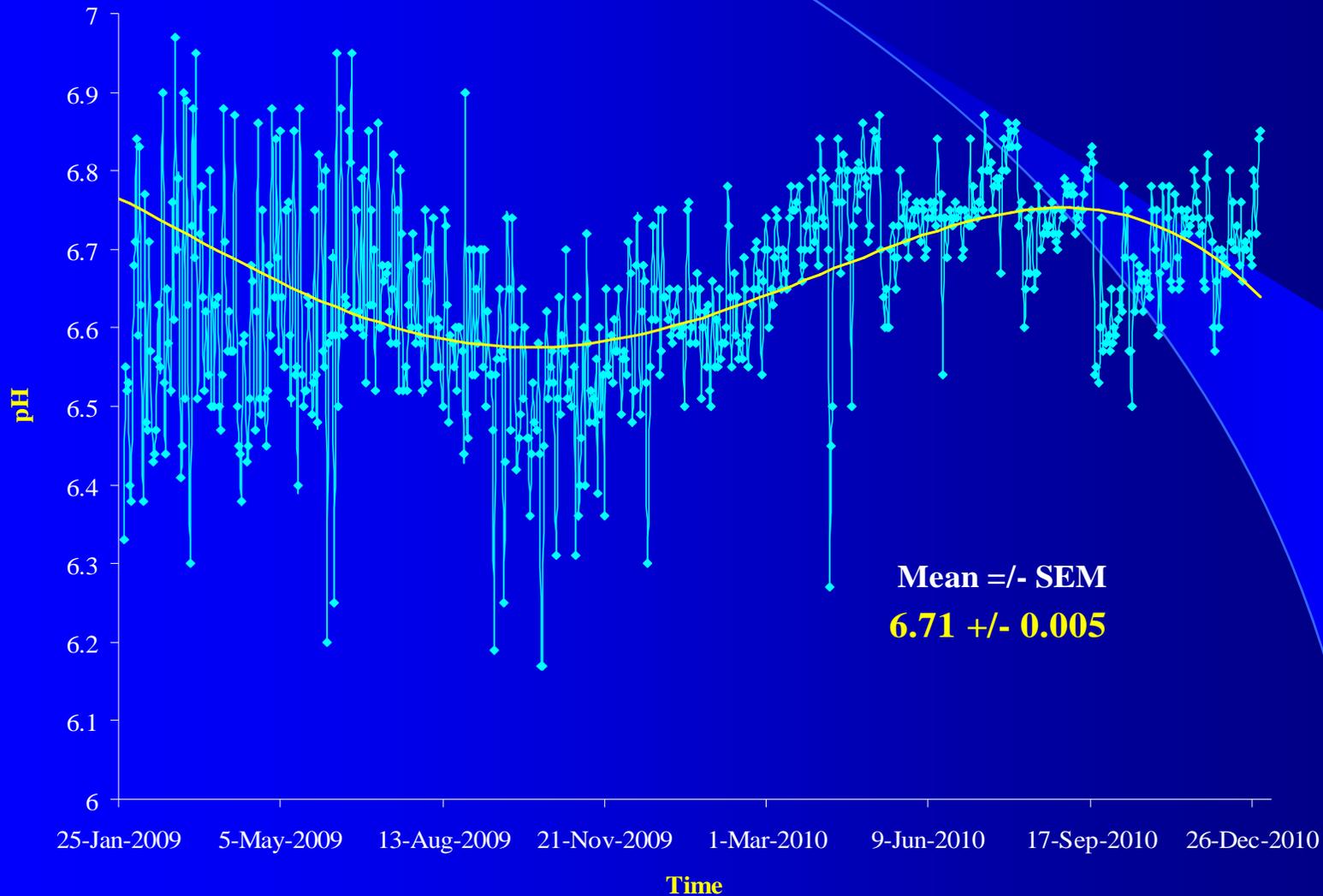
(d) a HTST treatment of milk with a pH below 7.0; or

(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



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

COMMISSION IMPLEMENTING REGULATION (EU) No 300/2013

of 27 March 2013

amending Regulation (EU) No 605/2010 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)

- (1) in Article 4(1), the introductory phrase is replaced by the following:

'Member States shall authorise the importation of consignments of dairy products derived from raw milk of cows, ewes, goats, buffaloes or, where specifically authorised in Annex I, from camels of the species *Camelus dromedarius* from the third countries or parts thereof at risk of foot-and-mouth 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:';

- (7) In order to authorise imports into the Union of dairy products produced from dromedary camel milk from certain parts of the territory of the United Arab Emirates, the Emirate of Dubai should be added to the list of third countries or parts thereof referred to in Annex I to Regulation (EU) No 605/2010, with an indication that the authorisation provided for in Column C of that list applies only to dairy products produced from milk of that species.

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 !**

