Klemen Potočnik
University of Ljubljana
Biotechnical Faculty
Department of Animal Science
Groblje 3
1230 Domžale
Slovenia

EQUINE MILK RECORDING

Proposal for the establishment of the Task Force Mare's Milk Recording

In the view of an increasing economic importance of equine milk production, it is necessary to provide framers with knowledge and tools about improving farm management and efficient production. On the other hand, animal welfare and food (milk) safety should be taken in to account. In this respect, the first step would be to develop guidelines for recording of quantity and the composition of mares' milk to provide an information for farm management and mares breeding in future generations. According to experiences gained during the implementation of guidelines for mare's milk recording, the similar guidelines for jennie's milk recording could be performed.

On behalf of a group of scientists and professionals involved in researches and production of equine milk, I propose that the ICAR Board nominate a convenor of the **ICAR Task Force for Mare's Milk Recording.** The convenor would propose names of members of the TF and the Terms of Reference, which would include the preparation of the draft guidelines for the mare's milk recording.

Justification

Horse domestication began prior to 5000 - 4000 B.C. In the beginning, they were probably used for meat supply, load transfer and for traction. Latest archaeological researches, based on the organic residue analysis, confirmed that the Botai culture in Kazakhstan used mare's milk already in 3500 B.C. (Outram et al., 2009). The same study found that horses were already bridled and there is a possibility about using it for riding as well. Jennies' milk has also been used from Egyptian antiquity at least for alimentary and cosmetic reasons. Hippocrates, the father of the medicine, prescribed Jennies' milk for numerous autoimmune diseases, such were liver troubles, nosebleeds, infectious diseases, fevers, oedemas, poisonings and wounds.

In the World, there are 62 millions of horses and 40 millions of asses. The highest population of horses in the World is bred in the USA (9.5 mio. heads), China (6.8 mio.), Mexico

(6.4 mio.), Brazil (5.5 mio.), Argentina (3.7 mio.), Columbia (2.1 mio.), Ethiopia and Mongolia (near two mio.), as well as Kazakhstan and Russian Federation with around 1.4 million of horses (FaoStat, 2012). The highest population of horses in Europe according to FaoStat (2012) is bred in Romania (764.000) and less than half of the million in Germany and France.

In the EU countries, the total economic impact in the horse sector is estimated on one hundred billions euros. On the other hand, this sector in total provide around one million of full time jobs in these countries, what means that six horses provide one full time job, i.e. 15 horses provide one full time job directly connected to horse sector. Very high economical impact per horse with a direct and indirect meaning is 16.500 € on average (Fabre TP, 2011). The highest incomes in equine sector belongs to race and sport horses. Draft or cold-blooded horses and especially endangered breeds have much lover economic impact. These breeds are mostly breed for meat production. In a combination with mare's milk production an economic impact could reach or even exceed the average income predicted in EU countries. Likewise, an important side effects of endangered equine breeds preservation like new employments, marginal land preservation, etc. could be expected.

Mare's milk is an ancient, seldom applied remedy, initially discovered by Asian people. Today, around 30 millions of people in Asia consume it and trends of consuming are rapidly increasing (Doreau & Martin-Rosset, 2002). An annual production of mare milk in Asia is assessed to be around 10,000 tons while in Europe around 1,000 tons. The Russian Federation is the largest mares' milk producers followed by Germany, Italy, France, Netherlands, Belgium and Norway. Despite the fact that cold-blooded breeds and crossbreeds with cold-blooded ones, are more suitable for milking it can be said that when milking is accepted by mares, any breed could be used for milk production.

Among many mammal species, mare's milk has been reported to raise a considerable interest due to its resemblance to human milk in its chemical composition. Consequently, it used for babies and premature born children feeding. Throughout many researches found that mare's milk contains a high amount of immune-globulins and has around 40 bioactive components, which contribute to recovering processes and health maintaining. Today, mare's milk attracts health-conscious consumers due to high levels of vitamins and minerals, better digestibility, and lower fat content compared to cow's milk. Although mares milk is an important foodstuff for people of Central Asia steppes (Zhou et al., 2009). However, it is well known that in all modern societies a certain forms of illnesses (especially associated with the immune system) have increased. Many people suffer from neurodermatitis, chronic inflammatory intestines, pulmonary disease, and some psychiatric as well as dermatological troubles. Some studies pointed out that above mentioned

diseases and problems with human's health could be alleviated and in some cases even cured with regularly consumed mare's milk. In many countries of Asia and East Europe, mare's milk is consumed like as a fermented milk, i.e. koumiss (in Mongolian also called airag). Koumiss is a drink made from a sour mare's milk, which contain a different content of alcohol. It is ingrained like a food that it is also used as a remedy (pulmonary and other wasting diseases) in some countries. Lv and Wang (2006) reported that koumiss has many nutritional and therapeutic properties which are considered beneficial to elderly patients and infants.

Dairy production in equine sector includes also **jennies milk**. Jennies milk is produced mostly in the Mediterranean countries. In some cases, production is supported by national schemes for conservation of farm animal genetic resources. Recently, more detailed researches in jennies milk in Europe increased rapidly. This fact could be a conscience of nutritional and functional ingredients of jennies milk. However, jennies milk is similar to mare's milk and both of them are similar to human milk (Nikkhah, 2012). Paediatric research data support jennies milk using in infant nutrition (Polidori et al., 2009) because it could support an efficient cerebral development and completed immune system in infants (Chiarelli, 2001). However, Nikkhah (2012) found limited jennies milk production, where available quantities are still insufficient for increasing human consumption.

Besides that, mares' and jennies' milk represent a huge potential in a **cosmetic and pharmaceutical industry.** Due to a high amount of proteins, minerals and vitamins mare's and jennies milk are used as a base for skincare treatments, and for some special designed pharmaceutical preparations (milk powders, pills, creams) which have a positive effect on some inflammatory skin diseases like neurodermatitis, eczema or psoriasis.