

Annex 7

Evaluations of the meetings

Plenary Session

Chaired by Sándor Kukovics and Stela Zamfirescu

In many countries the goat meat is used for local consumption only. The establishment of farmer's associations organising the breeding, production and marketing activities would help to solve this problem.

In order to start these kinds of activities at least an initial governmental support is needed.

There is a shortages of breeders' / goat farmers' organisations. In their absence it is not possible to achieve development in the breeding work and the marketing of the goat products.

New aspects should be used in goat farming in order to utilize the environment. The animal (breeding livestock) never could be the enemy of the environment but the human behaviour in animal keeping could destroy the environment.

One of the most useful advice received from the papers presented is: less animal with higher production level is far much useful than more animal with lover production level.

Session 1. Breeding – FAO Workshop

Chaired by During the first session, the several communications gave a general framework of the situation of the goat sector in Central and Eastern Europe.

We observe two main situations:

- The countries with a long tradition in extensive often pastoral and transhumant systems, Albania, Armenia, Georgia, Macedonia, Romania, Montenegro, the Caucasian and Central Asian regions of Russia, all mountainous regions but also Moldavia and Ukraina. In these countries, most of goats are multipurpose (meat, milk, sometimes fiber) and owned by so called traditional breeders. The herds are composed by animals of local diversified well adapted breeds. The production systems mobilize an important know – how to valorize the resources of range lands. Their productivity is low (for instance 50 to 200 l per lactation and per head). In these countries some initiatives have imported some exotic but productive breeds (Saanen, alpine, Nubian,, etc...) but the number of animals is very low as their impact on the global production is still very low (except in Romania with 33% of the goat milk for only 10% of the herds).
- The countries where goats have not a high background, Belarus, Most of Russia, Hungary, Voivodine (Serbia). In these countries, goats have always been present with few heads in the households or associated to sheep. Goats are a niche, and do not have a high weight in the livestock economy but could be a way of diversification for the farmers.

In all these countries, goat milk is mainly for local consumption and there is no real industrial market as we can find it for instance in France and Western Europe or in Turkey. Goats are of special importance for small holders which confirms their possible role to improve the food security and income of poor people.

Where pastoral systems are present goats systems suffered of state of public regulations against grazing in rangelands as in many other regions of the world.

The extensive and pastoral systems have always suffered of a bad image from the public policies and the breeders have a low professional identity. The actions to promote them have

been not been enhanced during many years. There are now programs of conservation of the local breeds. The several communications on Turkey have shown that thanks to a strong political will, it is possible to favor the organizations of the breeders in all systems and that innovation is possible even in pastoral systems.

One common belief is that extensive systems could not be productive. The case of the Comarca Lagunera in Mexico has shown the contrary. Thanks to a strong dairy culture of local breeders, a smart strategy of selection of local breeds and their crossing, the presence of an identified market and a dairy industry, this example has shown that it is possible to organize and rationalize goat production without degradation of the range lands and maintaining the grazing system. This example is also a testimony of the winning cards of goats to face climate changing and high heats. And another presentation has shown that goats are less demanding of water (around 500 l water to produce 1 l milk against 1400 l cows)

Thanks to multidisciplinary approaches, very innovative development engineering would be needed to enhance all goat production systems. During the next decades, we know it will be necessary to produce always more and with less non renewable resources. In Central and Eastern Europe there is a high reserve of productivity especially in extensive systems. Doubling the productivity of goats from 50l to 150 l/head could rather easy and would employ a large number of farmers. As these animals are still often the majority, and although it is less fun that producing 1000 l/head it would have more impact on the total production! A deep change in public policies would be needed with different paradigms and other approaches from research.

Session 2. Nutrition

Chaired by Sylvie Giger-Reverdin and Eva Cenkvari

This session should have had one invited speech, 10 oral presentations and 5 posters.

Out of the 10 presentations, three were missing: two from Turkey and one from Latvia. This gave more time to the other presentations. Generally meaning, speakers took more than 10 minutes to present their work.

- Dr Silanikove presented a quite long diaporama with lots of data very general or taken from cows. Very few came from goats. It could be more considered as an invited speech than as an oral presentation
- Lina Jaber presented experimental data which will be included in her PhD. They concerned a mild water restriction in French goats followed by a heat stress period
- Dr Cenkvari spoke about the influence of dietary conjugated linoleic acid on goat milk fat and included data from cows to foresee effects on goats.
- Dr Prokish presented results on elemental selenium which were not obtained on goats. Some of them concerned mice. We wondered about the choice of this topic in a goat meeting, especially as an oral presentation, even if it was interesting.
- Dr Luginbuhl presented very practical data useful for farmers who breed their goats at pastures.
- The two last papers from Turkey on growth performances for kids were quite difficult to understand due to the low level in English of the speakers. Moreover, it seems to us that there was not only a problem of English. One of them said the contrary of what was written.
- From a practical point of view, the speaker eared the translators as an echo what was quite disturbing for me.

There was no final discussion at the end of the session as there were quite few people at the afternoon session. From a confidential point of view, one lady from Turkey was unfair with the speakers.

We would like a suggestion: there were 3 posters in the nutrition session. They could have been presented with one slide for the main messages, so that everyone can discuss on them. Posters presenters could have the feeling that their work was also taken into consideration.

Session 3. Environment and production systems

Chaired by Carina Visser and Ioan Padeanu

The first speaker opened the session with a paper on the challenges regarding the rural development of the goat industry in South Africa. Insufficient and poorly managed grazing, animal diseases, drought and stock theft are additional constraints on production. The dualistic nature of South Africa's agricultural sector creates a difficult environment, in which young people (especially young Africans) are reluctant to pursue a career. The wide wealth gap between rural and urban areas contributes to the "unattractiveness" of this sector.

The second paper on traditional management practices in Morocco linked closely to the previous one. It was highlighted that traditional management still has many aspects which should be improved, of which the main ones are feeding, health care and reproduction efficiency. Results were obtained through a survey which included farmers in different areas and various breeds.

An overview was given on the status of goat farming in Hungary and Romania. It included several breeds and also crossbred animals. The various breeding systems and markets were described, and emphasis was put on the protection of origin of product for marketing.

A paper was presented by Turkey regarding the interaction of nutrition (physical environments), climate and marketing on emission rates of animals. It was concluded that specific breeds or genotypes of animals should be kept under specific conditions for superior adaptability and lower impact on the environment. Local breeds would usually be the most appropriate.

Lastly a paper on the association between Body Condition Score and milk yield / number of offspring was investigated. It was found that certain BCS were more suitable for selection for persistency and high milk yields. BCS were found to decline with increasing litter sizes, with average lactation scores associated with the most favourable BCS.

Session 4. Animal Health

Chaired by Róbert Farkas and Dr. Vasile Cozma

The Hungarian co-chair Róbert Farkas delivered an introductory lecture on animal health problems of goat flocks, including diseases caused by bacteria, viruses and parasites. Special emphasis was given to zoonotic disease agents causing serious infections in human.

Subsequently, he presented some not infectious, metabolic diseases in goats. Finally, attention was drawn to the fact, that preventive health care is indispensable in order to minimize economic losses and the risk of human infections.

The next lecture was given by Polish researchers, they evaluated the effect of caprine arthritis-encephalitis virus (CAEV) infection on the blood serum biochemical profile of dairy goats.

The presentation of Romanian authors about the investigation of caprine arthritis-encephalitis has been cancelled, as the authors decided to present a poster.

Dr. Tamás Abonyi, director of the National Food Chain Safety Office talked about the Hungarian investigations on virus caused diseases with special emphasis on reporting obligation of the farmers.

The next presentation was delivered by the co-chair of the session, it was a review about two diseases caused by unicellular parasites in Romanian goats.

The last presentation before the break was delivered by a Norwegian researcher. The Norwegian government is supporting regular laboratory tests carried out in goat flocks, in order to eliminate the outbreak of the CAE disease and to improve the health status of the herds.

After the break, two lectures registered by Hungarian colleagues about mastitis harm had to be cancelled, as they decided to present the works as a poster.

The presentation of Szegeed University researchers about the Somatic cell count of goat milk was followed by a work of a Romanian colleague, he reported on major digestive and pulmonary parasitosis in goats. The next presentation was cancelled.

The last presenter was Olimpia Iacob introducing the parasite burdens in carpathian goats in Romania and associated hematological and biochemical parameters.

As a summary we can state, that the presentations were interesting, they attracted 40-50 participants. As a co-chairman, I regret, that the number of questions raised after the presentations was low. It is worth mentioning, that a great number of posters dealt with animal health questions.

Session 5. Human health

Chaired by Lucia Sepe and Stela Zamfirescu

12 papers were registered of which 11 were presented. The themes were extremely interesting and each presentation elicited questions and comments. The topics included the applicability of a biogenic amine specific newly elaborated biosensor for monitoring the freshness of milk products, the quality of milk and cheese from Italian local breeds for the protection of biodiversity and the environment, the human testing of yoghurt supplemented with selenium nanoparticles, taurine rich goat milk and its products: components of functional food, nutraceuticals and assurance of sound health, the effects of organic versus inorganic selenium supplementation on milk production traits of Polish dairy goats, and, not at all, the comparison between changes in the microbial parameters and functionality of inulin and/or omega-3 fatty acid fortified goat milk and sheep milk products.

The presentations stressed, on one side, the strength link between the health of animals and the hygienic quality of milk. The protocols may be still different in the different European countries, but in a near future, where Europe will be more similar to a Confederation than today, all the Countries will have to adopt the same Regulation, mostly for the respect of consumer.

On another side, the advanced results on nutritional and nutraceutical quality of goat milk and cheese were showed, together with the importance of local breeds concerning biodiversity and quality. Goat production system is still based on natural enrichment of milk for unsaturated fatty acid and other bioactive elements through nutrition, giving to the consumer biofunctional products, in which the nutraceutical elements are totally available for the human organism. Moreover, a very important step of the study chain of quality was illustrated, that is the necessity, more than an opportunities, to use the human clinical trials to prove functionality and beneficial effects of sheep and goat products, considered able to increase or defend the human health. Without this last step, all the hypothesis on the effect of bioactive molecules contained into goat products are limited to in vitro trials. In this way, all the results on the quality of goat products would acquire the right dimension and validation.

Among the conclusions, the encouragement to multiply the application of clinical study of bioactive molecules was expressed, together with the auspices of a stronger cooperation between the different expertises involved in the promotion and in the study of quality finalised to human health."

Round-table – on animal welfare of goats

Chaired by George Stilwell and Evangelina Sossidou

The initial programme was slightly changed with the agreement of both chairpersons and the audience present. It was decided to start with the AWIN presentation and the oral communications followed by a general discussion. Only two oral communications were held – “Measuring and Monitoring Goat Welfare during Transportation” and “How does trimming overgrown claws affect goats’ welfare in intensive dairy farms?” – because the third speaker was not present for the talk “An gestation toxemia episode in goats, discovered by welfare assessment tests of metabolic profile”.

The first talk by George Stilwell, introduced the AWIN project, the principles of welfare assessment in intensively kept dairy goats and a summary of the indicators included in the welfare assessment protocol. The second talk by Evangelia Sossidou (SANCO project) addressed the issue of long distance transportation of small ruminants and the particular case of goats. The criteria for evaluate uploading and unloading animals were discussed. The last talk was on the lameness, inflammation and pain caused by overgrown claws in dairy goats and the benefit of trimming.

Although the audience was scarce a very interesting discussion followed, addressing these issues:

- A concern over the fact that AWIN is not yet sharing its results and protocols with other researchers and the public was presented. Several reasons for this were advanced but it was said that the message would be delivered to the AWIN coordinators and specially to workpackage 4 team.
- The need to look at short distance transportation of small ruminants. The rules and legislation are being implemented for long distance travelling – resting, feeding, drinking... – but very little is being done for short transportations (less than 8 hours).
- The issue of dehorning or disbudding was also discussed, because pain management is not usual when dehorning goats. It was said that genetic selection is unlikely due to the relationship with subfertility. Analgesic protocols are also difficult to apply in kids, but are now being studied by AWIN.
- The audience asked for the inclusion of indicators of ruminal acidosis in the protocol due to the fact that it is a disease that may affect welfare. It was said that diarrhea may be an indirect but reliable sign of gastro-intestinal disturbances.
- Other issues related to the AWIn protocol were discussed, namely the time needed to complete the protocol and the reason why it is being studied only in intensively kept dairy goats, although many European countries have a very important goat population in extensive production system.

Finally it was agreed to present to the organizing committee of this conference some proposals.

- 1) Implement training on animal welfare: It is felt that training vets and animal scientists is crucial because these are the people that will have to certify and control all rules related to animal welfare. It is essential that these professionals are well prepared and trained.
- 2) Recommend more research on welfare indicators in extensively kept goats and on welfare in short distance transportation of small ruminants.
- 3) Promote researchers in other countries to test the AWIN prototype. Researchers from Greece and Romania offered to do it in farms in their own countries.

Workshop 1 – Recent advances in reproduction managements...

Chaired by Elemér Gergátz and Bouchra El Amini

The workshop started with an opening lecture about the recent advances in reproduction management that have been given by Dr Ememer. In this lecture the authors listed the whole topics that could be debated in this workshop. However, a limited number of topics have been presented. It concerns the deep frozen buck semen in pellet form and mini straws. The presentation showed that pellet form of conservation allowed having more progressive sperm cells than mini straws. After this, Dr El Amiri presented its here oral presentation on seminal plasma explored under different conditions and showed that it is possible to show many differences in seminal plasma proteins according to the genotype, age, the animal health status (ill vs healthy) and the status of animal fertility (vasectomized vs intact rams). The last presentation addressed the topic “top genetics for your breeding goals” presented the activities of Sersia campagny as a leader on terms of semen and embryos exportation via a network of partner-distributors in more than 70 countries. SERSIA FRANCE also offers technical support in the fields of artificial insemination and mating as well as the supply of husbandry equipment.

The discussion concerned the seminal plasma collection and treatment and the genetic concerns. For the seminal plasma the technique used have been explained in detail and for the genetics, the price of straw, the quantity exported and the countries buying have been discussed.

Workshop 2. Non-hormonal methods of reproduction in goats

Chaired by Guido Bruni and Antonio Lopez

Workshop 3. Reproduction management of intensive goat farming

Chaired by Bernard Lebeuf and Elemér Gergátz

Summarised by Stela Zamfirescu

The reproduction session included two workshops regarding the non-hormonal control of goat reproduction, and biotechnical and biotechnological methods of goat reproduction. Twelve researchers from Romania, France, Spain and Italy attended this session and they together had accomplished a large-scale project entitled “Hormone-free non-seasonal or seasonal goat reproduction for a sustainable European goat-milk market”. The project aimed to develop innovative solutions to ensure that goat's milk and related products (such as cheese and butter) can be produced hormone-free all year round. FLOCK-REPROD proposed solutions based on technology that requires no hormonal treatment and allows the control of seasonality of goat reproduction and the application of artificial insemination (AI).

Thus, six of the presented papers provide an alternate way to meet EU legal requirements which restrict the use of hormonal treatments (such as progestagens currently used by dairy goat breeders to control goat reproduction cycles and enable AI). The purpose of the experiments made in Romania on local breeds, White of Banat and Carpathian goats, was to master the use of the ‘male effect’ combined with light treatment as a means to induce synchronous ovulation in dairy goats for the optimal efficiency of artificial insemination in out of the natural reproduction season.

Three of the presentations described the protocol based on the male effect and on one or two injections of PGF2. During the implementation of the AI protocols in field conditions, acceptable pregnancy rates were obtained with two PGF2 protocols, although 10-30% lower

than those obtained with the HT protocol. The pregnancy rate was also highly variable between farms and this variability was observed on two protocol PG (ranging from 9% to 92%) and HT protocols (ranging from 33% to 93%).

A very interesting presentation was about the history of AI in France. Other presentations described the determination of the quality of frozen buck semen through flow cytometry, the TEM examination of the ultrastructure of buck sperm cells, as well as results regarding the fecundity of goats artificially inseminated with frozen buck semen.