International Goat Association

April 2010

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International Goat Association Newsletter

KEEP INFORMED — STAY IN TOUCH — GET INVOLVED

Goats in integrated systems with oil palm: implications for increased productivity and food security

Written by C. Devendra (PhD, DSc, FASc.)

1. Introduction

The search for efficiency in improved and ecologically sustainable animal production systems assumes two principal objectives:-

- The animal genetic resources (ruminants and non-ruminants) will be used to the extent possible, and
- The objectives of production will also be clearly identified with increased productivity, profitability and food security.

In this context, the efficient use of the available natural resources (land, crops, animals and water) in appropriate production systems will be especially important. One dimension of efficiency is integrated natural resource management (NRM) the concept of integration and integrated systems refers to approaches that link the systems components to economic, social and ecological perspectives. The process is holistic, interactive and multi-disciplinary and promotes efficiency in NRM. The integration of various crops and animals enable synergistic interactions, which have a greater total contribution than the sum of their individual effects, in which

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2009 Country Report from Argentina

This report was sent in by Cristina Deza and Mario Poli

What is the current situation of the goats in Argentina?

The goat stocks registered in the National Agricultural Census of 2002 went up to around 4,061,402 heads, which represents an increase of 16.4% with respect to the 2000 National Agricultural Survey. 50.6% of the animals are concentrated in three provinces: Santiago del Estreo (17.4%), Neuquén (16.7%) and Mendoza (16.5%), with the rest being distributed across most the national territory, particularly in ecologically marginal environments.

The latest reports prepared by the National Animal Health Service (SENASA) in 2009, show that while the total values of goat heads are similar to those of 2002,

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Goats in integrated systems with oil palm (continued from page 1)

both ecological and economic sustainability can be addressed in a mutually reinforcing manner.

This paper briefly highlights the potential of integrated systems involving goats and oil palm in enhancing increased productivity and food security, particularly in small farms or smallholder situations with reference to South East Asia. The systems have relevance to other oil palm growing areas such as in West Africa, Latin America and the Caribbean.

2. Integrated production systems

Four categories of ruminant production systems are identifiable throughout most of the developing world:

- Rural landless systems
- Extensive systems
- Systems combining arable cropping (tethering, communal and arable grazing systems, and cut-and-carry feeding); and
- Systems integrated with tree cropping.

Of these, the last is very underestimated, especially in situations where there is emphasis on perennial tree crop cultivation such as citrus, coconuts, oil palm and rubber. In South East Asia, the oil palm is a "golden crop ". It is grown extensively in a few countries in Asia, including the Pacific Islands. Asia had about 84 % of the total world land area under oil palm of about 10.6 million ha and produced about 90 % of the world palm oil output. The largest land areas under oil palm of 8.4 million ha are found in Malaysia and Indonesia, who together owned over 79 % of the world planted area and produced about 87 % of the total world output of palm oil , followed by much smaller areas being found in Thailand, Philippines, India and Papua New Guinea.

Currently, less than about three per cent of the land is used for integration with ruminants. An expansion of the oil palm area for integration by about 10 per cent can make a substantial quantum jump in increased meat production from ruminants.

3. The oil palm environment and production attributes

The oil palm environment (Plate 1) offers a number of conducive production attributes for integrating goats to enhance total factor productivity. These are as follows:

- Forage dry matter availability : 2.99- 2.16 mt / ha for 3 and 5 year old palms reducing to 435-628 kg / ha for 10-29 year old palms
- 60-70 forage species in young palms, which are reduced by about 66 % in older palms
- Forage categories: 56-64 % grasses, 18-23 dicotyledons , 3-19 % legumes and 2-15 % ferns for 3- 10 year old palms , and 50 % grasses, 13 % dicotyledons , 2 % legumes and 35 % ferns
- About 72- 93 % of the forages are palatable and of value to ruminants
- With the range of forages (grasses and browse) available, goats are well suited for integration with oil palm
- Carrying capacity : 25-30 indigenous goats / ha in 3-4 year old palms with an average daily gain of about 40-60 g / day for a two year cycle to 3-5 goats /ha with over 7 year old palms
- A key management essential concerning goats in these systems in the need for their controlled grazing and close attention to avoid potential damage to the oil palm trees.

Together with the availability of the undergrowth under oil palm, consisting of grasses, shrubs and ferns a large proportion of which can be utilised, is a second category of a range of crop residues and agro-industrial by-products (AIBP) which are currently also underutilised, The range of the feeds produced, and the magnitude of production and availability is given in Table . The principal feeds from the oil palm are palm oil, oil palm trunks (OPT) oil palm fronds (OPF), palm kernel cake (PKC), and palm oil mill affluent (POME). Grazing the undergrowth and supplementary feeding with feeds such as PKC are economically feasible.

Table 1. Available feeds from the oil palm

By-product	Yield (mt/ha/ yr)
Edible:	
1. Oil palm fronds	0.62
2. Palm kernel cake	0.96
3. Palm oil mill effluent	0.04
4. Palm press fibre	0.23
Non-edible:	
1. Bunch trash	10.74
2. Palm nut shells	0.15

In Sabah in East Malaysia, many of the oil palm estates involved

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Goats in integrated systems with oil palm (continued from page 2)

with integration have been widely feeding OPF for cattle and goats. Fronds of about 2.2 m lengths from mature palms are usually fed intact to goats. but are chopped for feeding to cattle. Whereas goats tend to eat all the leaves and leave the midrib of their fronds because of the coarseness, with cattle, chopping enables total intake of both the leaves and the midrib without much wastage.

For feeding goats, the method is to hang the fronds horizontally with strings within reach of animals in which case the leaves are readily eaten on both sides of the fronds (Plate 2). Each mature frond produces about 2.5 kg of chopped feed. Much care is taken to cut only mature fronds without displacing the sagging position of the fresh fruit bunches (FFB). There are two harvests of two OPF per month from the mature trees.

4. Types of goats-oil palm interactions

Associated with the oil palm environment are the many benefits of crop-animal- soil interactions as follows:

- Beneficial effects of shade and available feeds on goats, especially exotic stock
- With large ruminants, draught animal power on land preparation and crop growth
- Dung and urine on soil fertility and crop growth
- Use of AIBP from trees *in situ,* and
- Use of native vegetation and effects on cost of weed control, crop management and crop growth.

5. Carbon sequestration and greenhouse gases

An area that has not been addressed in research terms concerns carbon sequestration. Notwithstanding the fact that goats also emit methane from enteric fermentation and manure, the expanding land areas under oil palm provide good opportunities for carbon sequestration through more widespread use of high quality grasses and tree legumes, and improved forage management practices , with resultant decreased carbon atmospheric emissions and global warming.

6. Economic impacts

A review of the economic impacts of the various results, involving 21 case studies, including five from goats from seven countries over the period (1984-2007), gave the following conclusions (Devendra, 2009):

- Integrating goats was advantageous
- Improved soil fertility was evident
- Distinct economic benefits are apparent eg. crop yields and savings on weeding costs with concurrent increased profits
- Very few studies were concerned with quantitative animal productivity, and
- Issues of sustainability were not addressed and neglected.

Associated with above, it is interesting to note the comparative benefits of using other ruminants such as cattle and sheep. Theoretical calculations were made by Haji Basir Ismail (2005) on the economic returns from four hectares of land under oil palm, inter- cropping as well as fodder cultivation for a seven year period using average and realistic field data. The RM 14, 562 was income generated from oil palm after seven years. The beneficial incomes generated as a percentage of total incomes in favour of integration for cattle, sheep and goats were 44.4 %, 86.6% and 91.5 % respectively. It is significant to note that the income from goats was the highest as follows:

Cattle (cow-calf model):
14,562 + 11,690 (44.4 %) = RM 26, 342 (US $7,141)

Sheep:
14,562 + 95,053 (86.6%) = RM 109,745 (US $29,661)

Goats:
14,562 + 157,187 (91.5%) = RM 171, 839 (US $46,443)

The beneficiaries of increased productivity and income are not only the small farmers , but also the labourers who own animals , as well as the larger plantations who practice integrated systems.

7. Stratification and production options

The oil palm in its entirety and its environment offers a number of production options that can significantly contribute to improved NRM, increased productivity and enhanced food security. In turn, the contributions have a major impact on the livelihoods of very poor small farmers who live on the threshold of poverty and hunger and dream of a better tomorrow.

The production options are quite numerous and include the following:

- Increase breeding of goat numbers and productivity

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Goats in integrated systems with oil palm (continued from page 3)

- More intensive utilisation of the available forage biomass and AIBP *in situ*
- Development of intensive zero grazing systems
- Improved NRM
- Increase institutional support for integrated resource utilization
- Encourage interdisciplinarity and a focus on holistic oil palm –based production, and
- Encourage a "market pull ", access to markets and marketing.

8. Conclusions

Integrated goats-oil palm systems, currently underestimated, are a potentially important production system that has not been adequately explored. The economic benefits are numerous and are associated with improved NRM, sustainability, environmental integrity, enhanced productivity and food security. The use of the oil palm areas also enables rapid breeding of goat numbers to meet national needs and reduce the imports of live animals. Much will also depend on more intensive application of the available technologies on –farm. Increased institutional support and possibly also appropriate incentives can stimulate much needed development of the integrated system These issues together constitute the challenges for the expanded development of sustainable oil palm –based goat production systems in the future.

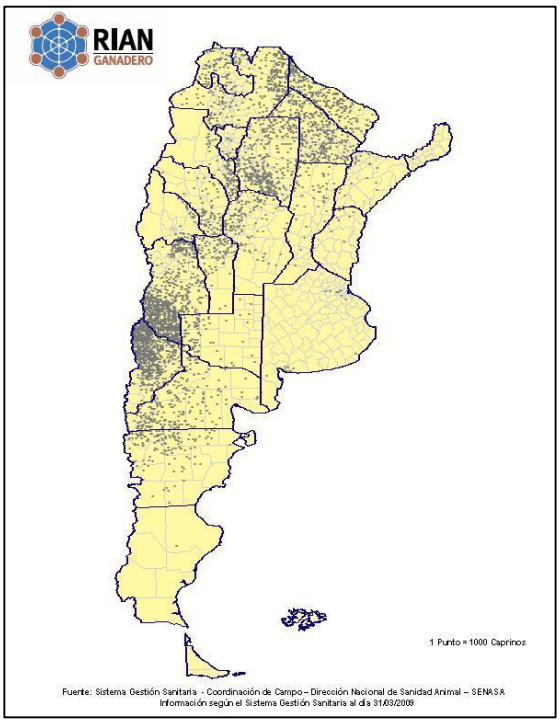
References

Devendra, C. (2009). Intensification of integrated oil palm –ruminant systems: enhancing increased productivity and sustainability in South East Asia. *Outlk. on Agric.*, 38: 71-82.

Haji Basir Ismail, Tan Sri, Dato `Seri (2005). *Land Agricultural Policy: a mismatch*.Malaysian Palm Oil Board, Kuala Lumpur, Malaysia, p.357-361.

2009 Country Report from Argentina (continued from page 1)

they note a shift of herds to more ecologically restrictive environments, located predominately in Mendoza and Neuquén (the most densely populated provinces in the center of the map left, top and bottom respectively).



Please tell us about the goat sector in Argentina

Historically goat production was associated with a subsistence economy and has been carried out by smallholders who on average have less then 60-80 animals per herd in the north-northwest of the country and over 150 heads in the west-southwest (environment of Patagonia).

In the first case the activity is carried out mainly by women and acianos, constituting a majority of household income (subsistence, barter and sale). This has led not to constitute a principal activity and investment in technology. In the second case the activity is performed by crianceros (shepherds) and their families with animals moving during the winter season to lower more protected areas, or summer to regions higher on the mountain with grasses grown after the thaw. These producers maintain strategies and management techniques related to their cultural and social values, giving greater identity to the activity.

In recent years the situation of goat production has begun to change. On one hand is a sector of goat producers with a business profile with activities that are given to different characteristics. These new players, started with the incorporation of genetics, management and technology aimed at making sustainable production but print looks different from the traditional.

On the other hand, from the National Goat Tables it was decided to work in programs of

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2009 Country Report from Argentina (continued from page 4)

development for meat, fiber and milk that take care of the chain of value of integral way.

What are the strengths?
Currently: A National Law (26.141) of recovery, promotion and development of goat activity.

The actions included in the scheme are: training and restructuring of the goat farms, improving productivity, improving product quality, the use of appropriate technologies and practices, upgrading of local genetic resources, promoting the associative enterprises, health checks, genetic improvement, the rational control of wildlife, supporting production systems and commercial and industrial activities carried out preferably by the producer, cooperatives and/or other companies of horizontal and vertical integration that make up the industry chain and goat food.

This scheme gives a differential treatment in the economic benefits and the requirements to complete for goat farm producers whose incomes are below the poverty line. It also may enter into agreements with governmental and nongovernmental organizations that perform functions of social development of this sector for the purpose of optimizing care.

A National Goat Program that takes care of the chains of Meat, Fiber and Milk. This will promote joint meetings of producers, industrialists, traders, research and extension institutions and governments where they are generated by regional agreements in order to optimize the use of infrastructure resources and strategies that give whitening business sustainability, eg. commercial pre-financing, training, financing, freight, etc.

An awareness of participatory work and greater involvement of government agencies in the harmonious development of the whole activity.

Interest in finding solutions to a complex problems, because treatment involves aspects of social, legal, economic, productive and environmentally.

What are the challenges?
The goat activity must be done through the use of practices of sustainability criteria framed in economic, social and natural resources.

Planned growth at the local, provincial, regional and national level for optimization of the use of the resources. This includes representatives from all sectors in the provincial implementation units (PIU) and they are organized regionally to address the problems arising from the joint in the value chain.

Ultimately the challenge is:
Improving the quality of life of the actors linked in this chain of value: meat, fiber, milk and leather of goat origin. It seeks to increase efficiency in every link of the chain, so as to ensure quality and wholesomeness of the products, keeping real sustainability at all levels.

2009 Country Report from Israel

Written by Haim Leibovich and Yossef Carasso

The Sheep and Goat industry in Israel
In Israel there are about 2,400 farmers raising small ruminants (sheep and goats), keeping a total of about 520,000 animals. These farmers can be grouped into three different sectors – the intensive, the semi-intensive (in the northern part of the country) and the extensive Bedouin farmers in the arid south of the country.

The number of goats is about 90,000, kept under different levels of intensification, 30,000 under very intensive production, and 60,000 under extensive or semi-intensive husbandry.

During recent years there has

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Sector	No. breeders	Sheep	Goats	Total heads
Intensive	500	130,000	30,000	160,000
Dairy	150	30,000	30,000	60,000
Mutton	350	100,000	-	100,000
Semi-intensive	600	100,000	40,000	140,000
Extensive	1,300	200,000	20,000	220,000
Total	2,400	430,000	90,000	520,000

Table 1: Number of sheep and goat breeders, and number of heads according to the sectors.

2009 Country Report from Israel (continued from page 5)

been a continuous increase in the interest in goat raising, as a part of a demand for more organic and/ or un-industrialized products and agro-tourism. The sheep and goat milk production is under quota, which is adjusted annually according to the local market demands. The price is negotiated and agreed upon between the milk producers and the dairies in a joint committee under the Milk Dairy Board.

As shown in fig. 1, sheep milk production has not increased in the years 2000-2008, with a slight decrease in recent years, whereas there has been a continuous increase of goat milk production from 3 million litters annually produced in the year 2000 up to 10 million in the year 2008.

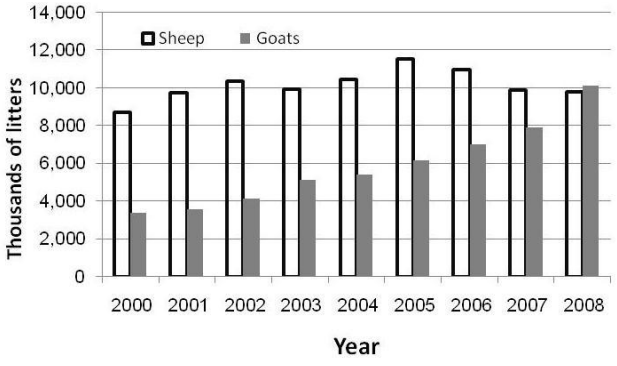

Fig. 1: Sheep and goat milk production (thousands of litters) during the years 2000 - 2008.

Due to the world finance crisis during 2008 a decrease in market consumption was recorded, excess of collected milk in the dairies put producers under pressure and reduced milk prices during 2009. The National Dairy Board together with the Goat Breeders Association (AZIZZA) are investing money and efforts in order to promote the Goat dairy products in the local market and are also looking for export alternatives.

	Year 2007 (1000 tons)	Year 2008 (1000 tons)	Difference (%)
Sheep milk	18.9	18.2	-3.7
Goat milk	22.3	20.5	-8.1
Sheep meat	30	28.7	-4.3
Goat meat	3.7	3.7	-

Table 2: Milk and meat produced by sheep and goats during 2007 and 2008 (thousands of tons).

During the years 2007 – 2009, a dramatic fluctuation in world grain prices influenced the farmer's income and also the uncertainty in consumption prediction.

In the Small Ruminants industry, there are 150 farms that market within the quota, 85 goat farmers and 65 sheep farmers. In the goat farms, 80% of the income is generated by milk and the rest by meat marketing. In the sheep farms only 30% of the income is from milk and the remaining 70% are from meat marketing. Most of the goat farms run herds that produce 50,000 – 200,000 liters annually and there are 12 farms that produce above 200,000 liters annually. There are also about 30 farms classified as "closed farms" which process their own milk, some organic and others conventionally, combined with agro-tourism activities.

There is a continuous effort supported by the government (the Ministry of Agriculture), the milk processing industry and the Dairy Board, in order to improve milk quality. The 2008 values are presented in table 3. Milk quality improvement is one of the goat sector goals for the coming next years.

Management aspects:

During recent years Goat farmers upgraded their milking facilities, and introduced computerized systems for advanced automatic data recording and herd management. The professional management improved, and the average animal's performance varies between 400 liters per goat with traditional management, up to an average of 900 liters annually on the computerized farms. The government supports introduction of such equipment as a national interest of saving manpower, improving efficiency of dairy farms, and for improvement of the quality of milk for public health.

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	Annual average	Minimum	Maximum
Fat content (%)	3.76	2.72	6
Protein content (%)	3.37	2.87	4.8
Bacteria count (Thousands in ml)	107	4	4,454
SCC (Thousands in ml)	1,318	382	9,902

Table 3: Goat milk quality – fat content (%), protein content (%), Bacteria count (thousands in ml) and Somatic Cells Count (thousands in ml) in 2008.

2009 Country Report from Israel (continued from page 6)

Nutritional aspects:
In order to improve animals' performances and farmers' time management there is an increasing trend of outsourcing the preparation of the animals' ration as TMR – Total Mixed Ration. TMR is prepared in a large feed center and delivered either fresh on a daily basis or as a packed mixture delivered once every two weeks.

Animals with high genetic potential from abroad:
In order to improve local milk production animals with high genetic value, mainly from France and the US, were introduced by the local farmers in recent years. A group of farmers and a veterinary doctor participated in an AI course in France in order to have the option to improve the use of the high genetic value animals.

2009 Country Report from Turkey

Written by Irfan Daskiran

The current situation of goats in Turkey
Goat population is population size reducing continuously beginning from 1990s.Actually Turkey has approximately 5.5 million head goat population of local breed that has low production capacity. Turkey goat population was given below table.

Goat population of Turkey

YIL-YEAR	GOATS ORDINARY (ba°- heads)	GOATS ANGORA (ba°- heads)
1991	9 579 256	1 184 942
1995	8 397 000	714 000
2000	6 828 000	373 000
2001	6 676 000	346 000
2002	6 519 332	260 762
2003	6 516 088	255 587
2004	6 379 900	230 037
2005	6 284 498	232 966
2006	6 433 744	209 550
2007	6 095 292	191 066
2008	5 435 393	158 168

Source: TURKSTAT, The Results of Animal Production

The Ministry of Environment and Forestry (MEF) wants to decrease goat population in near and inland forests in Turkey. For this aim, MEF has prepared different kinds of support provided to goat breeders. While some goat breeders accepted these supports the others could not accept these motivation facilities. Because nomadic people believe that goat production is a life style and would like to stick to traditional production systems.

The other important topic is that for the nomadic people producing some traditional animal products is important however, these products are not being produced under hygienic conditions therefore have no possibility of competing in real market conditions. Whereas goat milk production has high coast and some EU countries have supplied great income.

In Turkey, the structure of small ruminant production is traditional and the range of meat and milk products is very limited. Furthermore a big part of animal products which are produced by goat and sheep have been produced under primitive conditions. Animal breeders do not have enough information about effective and hygienic production techniques and there is not any milk collecting system. For this aim especially goat and sheep farmers have to be trained on effective production and hygienic animal products. In addition milk collecting system must be established for small farmers.

The other big problem is from a social and cultural perspective. Some nomadic people do not want to revert to the residential system. On the other hand, some specific tribes have very interesting life styles and culture which for cultural values should be conserved.

Currently goat activities of Turkey Ministry of Agriculture are some research projects. These projects are breeding of Kilis goat in Field Conditions and breeding of Angora goat in breeders conditions. These project process were being continued in field conditions which can be described more than 50 breeders whose have 10.000 head goat at least.

What are the strengths?
As known that Turkey is a one of the big goat population in Europe. Goat breeders want to breed going on although more legal and different kinds of

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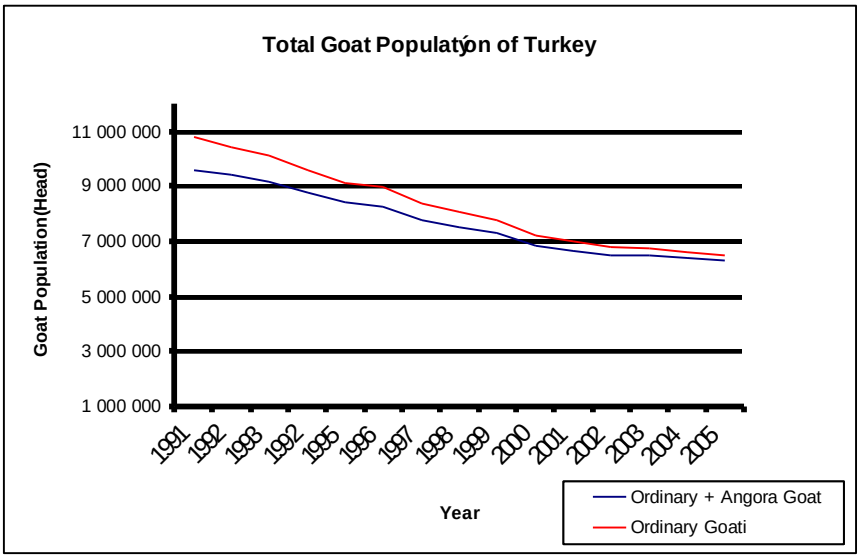
2009 Country Report from Turkey (continued from page 7)

problems. A mediterranean person of Turkey still likes goat meat and milk products. Turkey has good capacity for goat meat and milk producing and has big advantage for selling different kinds of goat products neighbour countries especially sell to Middle East countries. Ministry of Agriculture (MoA) is assessment some project in Turkey different region. Goat breeders were supported indirect methods by MoA. Turkey Sheep and Goat breeder Association was established but not still working effectively. On the other hand If this association support ýt will be motivate own member and stimulate to breeders for beneficial producing..

What are the challenges?
Turkey goat sector is very primitive and it has very big difficulties and problems. I can explain these problems such as legal situation, breeding problems, breeder problems, organisation problems, social problems, marketing problems and product range problems. The most important problem is Legal situation of goat breeder in Turkey. Goat breeders are under the big pressure of Ministry of Forestry and MoF is always force breeders to left goat breeding. Especially legal statute was used to pressure instrument for goat breeders by MoF. Mediterranean region of Turkey has very big nomadic tribe that breeds goat and this tribe has traditionally life style.



The other problem is goat products range is very limited. Goat milk products are being produced under non hygienic conditions in local area and it has sold in local small markets. Goat population is still huge but goat yields are very low. Some yield traits of native goat breeds must be improved. Goat breeders should be supported by government and private sector and breeder associations. Goat associations should be supported. MoA should be technical support to goat breeders and supplied animal health information.

2009 Country Report from Canada

Written by Jackie Dunham

What is the current situation of IGA in Canada?
I have instituted an IGA column in my magazine, GoatKeeper (www.goatkeeper.ca), which goes to approximately 750 addresses across Canada. In this column, I feature stories and news from the IGA newsletter and website, in order to increase awareness of the IGA in Canada.

We may have the opportunity to apply to host an international IGA conference in Canada in the future – the Alberta Goat Breeders Association (AGBA) is investigating a working partnership with an organization in Edmonton, Alberta, that has a wonderful conference facility and hosts events such as Farmfair International (www.farmfairinternational.com), however this is only in the very early preliminary stages. AGBA is hoping to work with this group on a smaller conference in 2010 to see how it goes.

What is the current situation of goats in Canada?
Most goat production in Canada is for meat goats (predominantly Boer) and dairy goats. There are

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2009 Country Report from Canada (continued from page 8)

some very large farms (500 breeding animals) and some very small hobby farms (less than 10), but most fall somewhere in between. Most dairy production takes place in Ontario and Quebec although there is also dairy production in BC and Alberta. Meat production is mainly found in the prairie provinces of Alberta, Saskatchewan and Manitoba, as well as Ontario.

There are a small number of producers raising angora and Spanish/cashmere goats for fibre production. Some goat herds have been used to graze newly replanted forests in British Columbia, and some are used to graze unwanted vegetation in other areas, although this is a largely undeveloped use of goats in Canada to date.

There is data on goat numbers on the Canadian government website, from the 2006 census of agriculture: http://www.statcan.gc.ca/pub/95-629-x/2007000/4123855-eng.htm#bees.

Scroll down to "Other livestock and bees." Under that heading is "Goats on Census Day" with links to data for each province.

There is not much research specifically for goats in Canada, as goat production is a very small livestock sector in this country compared to beef, pork and poultry, however there is collaboration between the goat and sheep sectors, and goats are included in all research projects involving scrapie and Johne's disease in small ruminants. Universities and government agencies usually carry out such research.

Tell us about the goat sector in Canada?

What are the strengths?

Great availability of feed and agricultural land, growing awareness and recognition of the goat industry by government and educational institutions, government programs and funding available to goat sector.

What are the challenges?

Cold winter climate in most of Canada (extra shelter and feed costs), size of country (vast distances between breeders), lack of National ID program (one is in the works), breeding stock import/export issues with USA, lack of formal marketing system, competition with goat meat imported from New Zealand and Australia.

2009 Country Report from Spain

Written by Maria Esperanza Camacho Vallejo

What is the current situation of IGA in Spain?

IGA's situation is good and is really improving quickly. We have a Spanish member on the Board of Directors (Dr. J. Capote), and we feel that the voice of our researchers, technicians and goat keepers have easy access to the organization. It is also making easy my role as contact point between the Spanish goat world and the IGA organization.

Today the number of IGA Spanish members is not a good reflection on the importance of goats in our country, but I am trying to improve this situation. With this purpose I have established a network, and a mailing list including all Spanish IGA members, but also other people (researchers, transference technicians, etc) and institutions (breeders associations, cooperatives, etc) not included in the organization.

Nevertheless I think that the celebration of the 2012 International Conference on Goats in Spain will be a turning point in the definitive extension of IGA in our country. Now the preparation of the event is producing general interest in IGA, both at the public and private levels.

What is the current situation of goats in Spain?

Today Spain is the second country of Europe in census with more than 4 million animals, but probably if we put together data of census, with productions, repercussion in the agricultural national richness and level of organization of the subsector, probably Spain is the most relevant country in the continent.

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2009 Country Report from Spain (continued from page 9)

We count with the biggest goat biodiversity of Europe with 27 local breeds and varieties. Seventeen of them are endangered, two are not officially recognized and only five are competitive breeds. Eight of these are dairy goats while the other 19 are specialized for meat production.

Other international breeds are present is Spain such as Saanen, Alpine and Anglo Nubian, but due to the strong situation of the dairy local breeds their role is almost irrelevant.

All these populations count with official breeders association and count with active conservation programs or breeding programs depending upon their situation. I have to point out the development of CAPRIGRAM, the Murciano-Granadina Association located in Granada, which count with modern genetic evaluations based in the BLUP Animal Model and publish a yearly Catalogue of sires, at the same level of other international breeds.

Unfortunately, the subsector was receiving the terrible influence of globalization (a reduction of grants and subsidies), energetic crisis (prices of animal feeds), and competition with other sectors (mainly services) by the hand work, lands, water and investments. The effects of the economic crisis are very hard for goat keepers, especially because the access to bank financial support is almost impossible. Now all the farm management must be done with direct investments because no credit is accessible.

That situation together with the old age of the average farmer has resulted in the lessening of these activities and a reduction in the total number of farms.

Tell us about the goat sector in Spain?

What are the strengths?

As final general comment I want to point out my optimism about goat production in Spain. I am sure that if there is some farm activity where Spain is really competitive it is in goats, especially in milk production. We have a cultural specialization, a great richness in genetic resources, a popular demand of products, and an excellent scientific specialization (more than 20 research teams of the best level are working on goats in Spain).

What are the challenges?

As negative points I have to point out the luck of internal organizations. Breeders Associations are working in isolation, avoiding the possibility to attend common problems together, it produces a continuous lose of human and economical resources. We have to look for an increasing of the added value of the products to get it in the hand of producers. Presently most of the Spanish goats' milk and meat products are commercialized by means of intermediaries with destination to the conventional commerce and the fabrication of inter-specific cheeses of low quality. We need to increase the development of goat specific trademarks, protected geographical indications, protected denomination of origin, organic production, and any other chance to obtain the mentioned added value.

Filter paper RT PCR using nasal swab: Easy, cheap and safe method for the molecular detection of Peste des petits ruminants virus

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Peste des Petits Ruminants (PPR) is an economically important viral disease of small ruminants, which causes huge morbidity and mortality each year in many countries. It is a trans-boundary disease mainly in the tropical region. In Bangladesh the diagnosis of PPR is often hampered by the lack of suitable clinical materials and the necessity to maintain a cold chain for sample preservation up to the laboratory. A safe, cheap and effective method is required for successful shipment of infected materials from the remote areas especially in the tropical countries to the designated laboratories without being dependant on cold chain system. In recent years, several studies have demonstrated the potential use of filter paper for the collection and storage of biological materials. Filter papers have been shown to be suitable for the conservation of either DNA or RNA viruses for extended period of time (up to 4-11years) at moderate or tropical temperatures (Li et al., 2004; Chaisomchit et al., 2005). The virus genome can be detected after extraction of the genomic material (Prado et al., 2005) or by direct RT-PCR without extraction (Yourno and Conroy, 1992; Pitcovsky et al., 1999; Kailash et al., 2002). In this study, Whatman filter paper was used to collect the blood and nasal swab from the PPR suspected live animal at febrile and non-febrile stages during field visits. Filter paper soaked with suspected samples were cut in small 5mm^2 pieces and added directly to the PCR tube containing QIAgen one step RT-PCR reagents and primer for F gene (Michaud et al, 2007). RNA extracted from a vaccine virus and filter paper soaked in known positive tissue suspensions were used as positive controls. A 448 bp fragment of gene of PPR virus was successfully amplified on filter paper using both blood and nasal swab samples (Fig. 1 & 2). Nasal swab was found positive in both febrile and non-febrile stages while blood was found positive only in febrile stage. Filter paper method of RT-PCR using nasal swab could be a sensitive tool for the diagnosis of PPR in infected herd.

References

1. Chaisomchit, S., Wichajarn, R., Janejai, N., Chareonsiriwatana, W., 2005. Stability of genomic DNA in dried b… on filter paper. …n filterpaper. J. …30, 2887–2892.
2. Kailash, U., Hedau, S., Gopalkrishan, V., Katiyar, S., Das, B.C. (2002). A simple 'paper smear' method for dry collection, transport and storage of cervical cytological specimens for rapid screening of HPV infection by PCR. *J Med Microbiol* 51: 606-683
3. Michaud, A., Gil, P., Kwiatek, O., Prome, S., Dixon, L., Romero, L., Le Potier, M.-F., Arias, M., Couacy-Hymann, E., Roger, F., Libeau, G., Albina, E. 2007. Long-term storage at tropical temperature of dried-blood filter papers for detection and genotyping of RNA and DNA viruses by direct PCR. Journal of Virological Methods 146: 257-265.
4. Li, C.C., Beck, I.A., Seidel, K.D., Frenkel, L.M., 2004. Persistence of Humanimmun odeficiency virus type 1 subtype B DNA in dried-blood samples on FTA filter paper. J. Clin. Microbiol. 42, 3847–3849.
5. Pitcovski J, Shmueli E, Krispel S, Levi N.1999. Storage on filter paper for genetic analysis. J. Virol. Meth. 83: 21-26.
6. Yourno, J., Conroy, J., 1992. A novel polymerase chain reaction method for detection of human immunodeficiency virus in dried

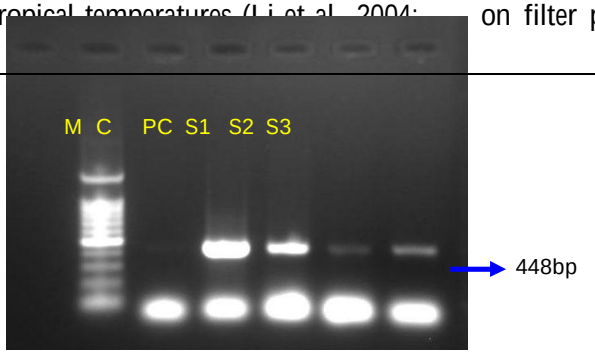

Fig.1 Amplification of the fragment of F gene of PPRV by filter paper method (M Marker, C: Negative control, PC: Positive control (extracted RNA from vaccine virus) ,S1: Filter paper soaked in tissue suspension S2:Filter paper with nasal swab, n, S3= Filter paper with blood)

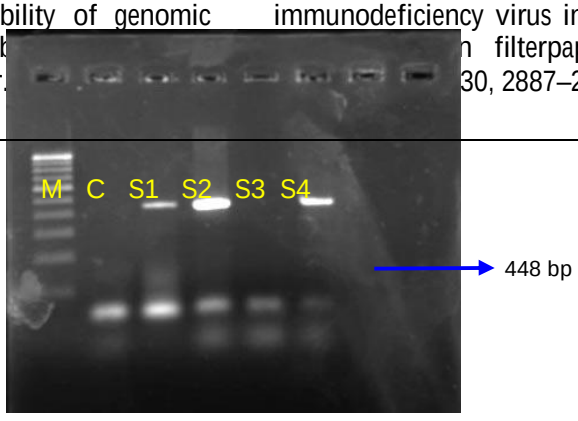

Fig. 2 Amplification of the fragment of F gene of PPRV by filter paper method (M Marker, C: Negative control, S1: Filter paper with nasal swab, S2: Filter paper soaked in tissue suspension, S3= Filter paper with blood (negative) and S4: Extracted RNA from lymph node tissue

COST Action FA0805
Goat-parasite interactions: from knowledge to control (CAPARA)

Entry into force: January 23, 2009
End of action: April 6, 2013

Goat production is an example of a sustainable production system fully integrated within the local rural development. One of the most frequent problems of goat breeding, associated with the outdoor based husbandry system, is parasitism. For years, it has been considered that data obtained on parasite infections in sheep may be directly transferred to goats. Recent studies have underlined the existence of significant caprine specificities in the host-parasite interactions.

CAPARA is a recently launched COST Action under the frame of Food & Agriculture and its main objective is to form a network in order to provide scientific grounds for the development of adapted strategies to control parasitism in goats and to improve sustainable goat rearing.

COST is an intergovernmental framework for European Cooperation in Science and Technology, allowing the coordination of nationally-funded research on a European level (http://www.cost.esf.org/). COST aims to strengthen Europe in scientific and technical research through the support of European cooperation and interaction between European researchers. The funds provided by COST support the coordination costs of the research networks (Actions), while the research is funded nationally.

CAPARA is covering 4 scientific fields organized in Working Groups which are:

WG1: Epidemiology of parasitic infections in goats
Studies on parasite biology, incidence and susceptibility to

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Recent Interesting Articles

Livestock Research for Rural Development: contents of Volume 22, Number 1

Effects of ensiling potato hash with either whey or sugarcane molasses on silage quality and nutrient digestibility in sheep; B D Nkosi, R Meeske and I B Groenewald

Incubation of Japanese quail eggs stored at tropical temperatures; J M Romao, T G V Moraes, E E Silva, R S C Teixeira and W M Cardoso

Incubation performance of meat type Italian quails in egg laying onset; J M Romao, T G V Moraes, W M Cardoso, R S C Teixeira, A A Siqueira, E E Silva and C C Buxadé

Bull selection and use for improved performance in pastoral herds of Tanzania; I P B Kashoma, C Luziga and F O K Mgongo

Livestock-rangeland management practices and community perceptions towards rangeland degradation in South Omo zone of Southern Ethiopia; Terefe Admasu, Ebro Abule and Zewedu Tessema

Sheep management systems in small farms in the Fahs region (Tunisia): Diagnostic and analysis; H Selmi, B Rekik, A Dkhil, A Ben Gara, M Hammami, S Hammami and H Rouissi (In French)

A note on a DNA polymorphism study of leptin gene in Sahiwal and crossbred cattle using PCR-RFLP technique; A Dandapat, D Kumar, A K Ghosh and V Umapathi

In sacco probiotic properties of effective microorganisms (EM) in forage degradability; M Syomiti, M Wanyoike, R G Wahome and J K N Kuria

A note on the effect of supplementing rangeland grazing with Acacia angustissima mixed with pearl millet on growth performance of goats in a smallholder farming area in Zimbabwe; L Mukandiwa, P H Mugabe, T E Halimani and H Hamudikuwanda

Gasification of fibrous crop residues and live stock production; essential elements in establishing carbon-negative farming systems; Lylian

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COST Action FA0805 (continued from page 12)

infections:

- Epidemiology of helminth infection in goats within Europe environment, ethology, husbandry and consequences on parasitism
- Risk assessment

WG2: Goat immune response to helminthes

A better understanding of mechanisms involved in immune response against parasites:

- Compared immune mechanisms against parasites in goats vs. sheep
- Cellular/molecular basis of resistance. Novel methods of diagnosis
- Interactions between treatments and immunity

WG3: Pharmacokinetics of antiparasitic drugs in goats

The establishment of pharmacokinetics profile of AHs in goats will lead to: a) efficient drug use; b) delay in development and spread of AH-resistance; c) reduction in drug residues.

- Pharmacokinetics and AH efficacy
- AH resistance
- Strategic use of AH
- Data for regulation to extra-label use of drugs

WG4: Alternatives to chemical drugs.

An integrated sustainable control of parasites supposes the evaluation of innovative methods of control specifically adapted to goats.

- Genetics, breeding strategies
- Nutraceuticals
- Interactions nutrition-response to parasites
- Vaccination

Chair of the Action

Dr. Smaro Sotiraki, NAGREF, Greece

Vice Chair

Dr. Herve Hoste, INRA-ENVT, France

Info: http://www.cost.esf.org/domains_actions/fa/Actions/goat-parasite_interactions

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Recent Interesting Articles (continued from page 12)

Rodríguez and T R Preston

Heterosis and reciprocal effects of growth performances in F1 crosses generations of Local x Hubbard chicken in the Western Highlands of Cameroon; T C Keambou, Y Manjeli, B Boukila, S Mboumba, T Mezui Mezui and B A Hako Touko

Effects of moringa and bamboo leaves on groundnut hay utilization by West African Dwarf goats; V O Asaolu , S M Odeyinka, O O Akinbamijo and F G Sodeinde

Mineral composition of willow and poplar leaves of nutritional interest for cattle in silvopastoral systems at the delta of Parana River, Argentina; N E Carou, E De Loof, E Casaubón, A González and M E Dallorso (In Spanish)

Effect of the addition of yeast « Saccharomyces cervisiae» (BIOSAF Sc. 47) in the concentrate on growth performance and carcass quality of Sicilo-Sarde lambs; H Selmi, B K Manel, B Rekik, A Ben Gara, M Hammami and H Rouissi (In French)

Morfometrics of some digestive organs of pigs fed diets of cereals, sugar cane B molasses and royal palm nuts; M Macías, C Díaz, H Domínguez and J Ly (In Spanish)

Dairy goat production practices in Kenya: Implications for a breeding programme; T D O Ogola, W K Nguyo and I S Kosgey

The relative feeding value of cereal straw treated with urea or ammonia; S Triki, N E Benmessaoud and F Ghozlane (In French)

Preliminary survey on equine trypanosomosis and its vectors in Asosa and Homosha districts in Benishangul Gumuz Regional State, northwest Ethiopia; R Abebe and A Wolde

Effect of different levels of nitrogen fertilisation on yield and chemical composition of Brachiaria ruziziensis at bolting in West Cameroon; F Tendonkeng, B Boukila, Etienne T Pamo, A V Mboko and J Tchoumboué (In French)

Studies on the udder and teat morphology and their relationship with milk yield in Murrah buffaloes; R M V Prasad, K Sudhakar, E Raghava Rao, B Ramesh Gupta and M

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Recent Interesting Articles (continued from page 13)

Mahender

Effect of potassium chloride, sodium bicarbonate and vinegar supplementation in drinking water on performance, carcass yield and body temperature of broilers reared under high ambient temperature; H Ain Baziz, Y Dahmani , L Bedrani, N Mokrani, H Boudina and S Temim (In French)

Articles from ScienceDirect Bibliography

Food Hydrocolloids, Volume 24, Issues 2-3, March-May 2010, Pages 249-257

Hepatitis A and E: Update on prevention and epidemiology

Vaccine, Volume 28, Issue 3, 8 January 2010, Pages 583-588

David FitzSimons, Greet Hendrickx, Alex Vorsters, Pierre Van Damme

Advanced glycation end products increase endothelial permeability through the RAGE/Rho signaling pathway

FEBS Letters, Volume 584, Issue 1, 4 January 2010, Pages 61-66

Akiko Hirose, Takahisa Tanikawa, Hiroko Mori, Yosuke Okada, Yoshiya Tanaka

Direct proteasome binding and subsequent degradation of unspliced XBP-1 prevent its intracellular aggregation

FEBS Letters, Volume 584, Issue 1, 4 January 2010, Pages 67-73

Ami Navon, Ariel Gatushkin, Lior Zelcbuch, Shimon Shteingart, Marganit Farago, Rivka Hadar, Boaz Tirosh

Anti-infective antibodies—Reviving an old paradigm

Vaccine, Volume 27, Supplement 6, 30 December 2009, Pages G33-G37

Peter Lachmann

Validation of diagnostic tests for detection of avian influenza in vaccinated chickens using Bayesian analysis

Vaccine, In Press, Uncorrected Proof, Available online 16 December 2009

Jeanet A. van der Goot, Bas Engel, Sandra G.P. van de Water, Willem Buist, Mart C.M. de Jong, Guus Koch, Michiel van Boven, Arjan Stegeman

The dASPP-dRASSF8 Complex Regulates Cell-Cell Adhesion during Drosophila Retinal Morphogenesis

Current Biology, Volume 19, Issue 23, 15 December 2009, Pages 1969-1978

Paul F. Langton, Julien Colombani, Eunice H.Y. Chan, Alexander Wepf, Matthias Gstaiger, Nicolas Tapon

Up-regulation of circulating hemocyte population in response to bacterial challenge is mediated by octopamine and 5-hydroxytryptamine via Rac1 signal in Spodoptera exigua

Journal of Insect Physiology, In Press, Uncorrected Proof, Available online 14 December 2009

Geun Seob Kim, Yonggyun Kim

Muscle lipid metabolism gene expression in pigs with different H-FABP genotypes

Livestock Science, In Press, Corrected Proof, Available online 14 December 2009

S.M. Zhao, L.J. Ren, L. Guo, M.L. Cheng, X. Zhang, C.R. Ge, S.Z. Gao

Use of haloperidol and azaperone for stress control in roe deer (Capreolus capreolus) captured by means of drive-nets

Research in Veterinary Science, In Press, Corrected Proof, Available online 14 December 2009

Gregorio Mentaberre, Jorge R. López-Olvera, Encarnación Casas-Díaz, Ester Bach-Raich, Ignasi Marco, Santiago Lavín

Evaluation of the immunogenicity of a recombinant glycoprotein-based Chandipura vaccine in combination with commercially available DPT vaccine

Vaccine, In Press, Uncorrected Proof, Available online 14 December 2009

C.H. Venkateswarlu, V.A. Arankalle

Screening and identification of dominant functional fragments of human epididymal protease inhibitor

Vaccine, In Press, Uncorrected Proof, Available online 14 December 2009

Li-Li Sun, Jin-Tao Li, Yu-Zhang Wu, Bing Ni, Ling Long, Yun-Long Xiang, Wei He, Zhi-Qing Liang

Enhancement of IL-10 bioactivity using an IL-10 peptide-based vaccine exacerbates Leishmania major infection and improves airway inflammation in mice

Vaccine, In Press, Uncorrected Proof, Available online 14 December 2009

Gang Zhou, Yanbing Ma, Ping Jia, Qingdong Guan, Jude E. Uzonna, Zhikang Peng

Enhanced white spot syndrome virus (WSSV) detection sensitivity using monoclonal antibody specific to heterologously expressed VP19 envelope protein

Aquaculture, In Press, Accepted Manuscript, Available online 13

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IGA Mission: The IGA promotes goat research and development for the benefit of humankind, to alleviate poverty, to promote prosperity and to improve the quality of life.

IGA Vision: IGA is a global network of people and organizations linking research and production by sharing information, experience, and best practices. IGA advocates socially just, environmentally sound and economically viable goat production. IGA promotes regional activities with a global and diversity perspective.

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Recent Interesting Articles (continued from page 14)

December 2009
Parin Chaivisuthangkura, Siwaporn Longyant, Sombat Rukpratanporn, Chutima Srisuk, Pattarin Sridulyakul, Paisarn Sithigorngul

Molecular characterization and bioactivity of a CXCL13 chemokine in large yellow croaker Pseudosciaena crocea
Fish & Shellfish Immunology, In Press, Accepted Manuscript, Available online 11 December 2009
Chen Tian, Yuanyuan Chen, Jingqun Ao, Xinhua Chen

Influence of pasteurization, brining conditions and production environment on the microbiota of artisan Gouda-type cheeses
Food Microbiology, In Press, Accepted Manuscript, Available online 11 December 2009
Koenraad Van Hoorde, Marc Heyndrickx, Peter Vandamme, Geert Huys

Choline metabolism in glycinebetaine accumulating and non-accumulating near-isogenic lines of Zea mays and Sorghum bicolor
Phytochemistry, In Press, Corrected Proof, Available online 11 December 2009
Gregory J. Peel, Michael V. Mickelbart, David Rhodes

A survey of Western Australian sheep, cattle and kangaroos to determine the prevalence of Coxiella burnetii
Veterinary Microbiology, In Press, Accepted Manuscript, Available online 11 December 2009
Michael Janis Banazis, Abbey Simone Bestall, Simon Andrew Reid, Stan Gordon Fenwick

Acute phase protein response in Alpine ibex with sarcoptic mange
Veterinary Parasitology, In Press, Accepted Manuscript, Available online 11 December 2009
Md Mizanur Rahman, Cristina Lecchi, Cristina Fraquelli, Paola Sartorelli, Fabrizio Ceciliani

Pharmacokinetics, plasma protein binding and bioavailability of moxifloxacin in Muscovy ducks after different routes of administration
Research in Veterinary Science, In Press, Corrected Proof, Available online 9 December 2009
A. Goudah, S. Hasabelnaby

Antimicrobial peptides (AMP) with antiviral activity against fish nodavirus
Fish & Shellfish Immunology, In Press, Uncorrected Proof, Available online 8 December 2009
Ta-Jui Chia, Yu-Chi Wu, Jyh-Yih Chen, Shau-Chi Chi

Immunization with the attenuated plasmidless Chlamydia trachomatis L2 (25667R) strain provides partial protection in a murine model of female genitourinary tract infection
Vaccine, In Press, Uncorrected Proof, Available online 8 December 2009
Norma Olivares-Zavaleta, William Whitmire, Donald Gardner, Harlan D. Caldwell

Virus-like particles and capsomeres are potent vaccines against cutaneous alpha HPVs
Vaccine, In Press, Uncorrected Proof, Available online 8 December 2009
Tilo Senger, Lysann Schädlich, Sonja Textor, Corinna Klein, Kristina M. Michael, Christopher B. Buck, Lutz Gissmann

Humoral immunity to human metapneumovirus infection in adults
Vaccine, In Press, Uncorrected Proof, Available online 8 December 2009
Ann R. Falsey, Patricia A. Hennessey, Maria A. Formica, Mary M. Criddle, Jamie M. Biear, Edward E. Walsh