Characterization of Beldi chicken and turkeys in rural poultry flocks of Morocco. Current state and future outlook

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Summary

The main characteristics of Beldi (meaning "native" in Arabic) poultry raised in rural areas were studied in the Khenifra Region through extensive surveys.

Beldi chickens have large phenotypic variability. Black, brown, grey and white colours, pure or mixed, are frequently observed in chickens' featherings while turkeys are predominantly bronze. Plumage types were fairly homogeneous in both species. Single combs and dented combs were respectively predominant in chicken hens and roosters.

Sexual maturity was reached at 154 days for roosters, 168 for hens in chicken, around 217 days for toms and 231 for turkey hens. The age at first egg averaged 5.8 months for hens and 8.4 months for turkey hens. The number of eggs laid per hen per year was 78 for chicken and 69 for turkey. Hatchability rate was 78 and 80 percent for chicken and turkeys, respectively. Diseases were the main cause of mortality, which could affect up to 77 percent of chicken flocks.

Few preliminary urgent steps for the conservation of Beldi poultry are discussed with other production improvement proposals.

Résumé

Les caractéristiques des volailles Beldi (locales en arabe) élevées dans le milieu rural ont été étudiées dans la région de Khénifra à l'aide d'enquêtes exhaustives. Outre l'observation directe et la description, les performances de production, de reproduction et les taux de mortalité des animaux (et leurs causes) ont été relevés. Les conditions de logement, d'alimentation et d'abreuvement ont été décrites.

Les volailles demeurent caractérisées par une variabilité phénotypique étendue. Les couleurs noire, brune, grise, et blanche, dominantes ou associées ont été fréquemment observées au niveau des plumages des poules alors que le noir est dominant pour les dindons. L'emplumement est régulier chez les deux espèces. Les crêtes sont plutôt simples chez les poules et dentées chez les coqs.

La maturité sexuelle a été atteinte vers 154 jours chez les coqs (168 chez les poules) et vers 217 jours chez les dindons (231 chez les dindes). L'âge moyen d'entrée en ponte a été de 5.8 mois pour les poules et de 8.4 mois chez les dindes. La ponte annuelle a été de 78 œufs par poule (celle des dindes a été de 69). Les taux d'éclosion observés ont été de 78 et 80 pourcent chez les poules et les dindes respectivement. Les maladies ont été les principales causes de mortalité dont les taux peuvent atteindre 77 pourcent.

Quelques étapes préliminaires urgentes préalables à la conservation des caractéristiques du Beldi ont été discutées avec d'autres propositions d'amélioration des productions.

Keywords*: Breeds, Chickens, Genetic resources, Morocco, Phenotypic characteristics, Performance, Poultry, Turkey, Strains.*

Introduction

In spite of the exponential growth observed in the industrial sector of poultry production in Morocco, rural poultry flocks remain a steady supplier of highly appreciated products by the consumers (Benabdeljelil, 1983).

The rural poultry, distinguished from the common white imported broad breasted strains of broilers, are called “Beldi”: a standard name for a variety of birds meaning “native” in Arabic. Poultry products from traditional systems have always contributed to the diet of the local population as a readily available and economical meat source.

In a review of the history of poultry production on the eve of the start of its industrial sector, Agenor (1973) reported that exports of eggs and poultry had always been a significant component in trade in Morocco.

The relative adaptation to harsh conditions and scarce feeding resources have made the Beldi flocks a long-term sustainable supplier to the local population of high quality nutriments with distinct characteristics. Various reports described the Beldi as a light weight bird with no specific laying or growth abilities producing "white eggs", (from beige to brown) ranging in weight from 35 to 45 g. Its laying rate runs from 50 to 60 eggs per year. No special housing is provided and flocks are often decimated by diseases (Agenor, 1973).

Virtually all farmers in most regions of Morocco keep poultry flocks of variable sizes raised in back-yard systems, intensive or semi–intensive production systems or on range. While Beldi chickens are widely distributed in most villages and towns, turkey flocks are rather confined to plain areas (Tadla, Doukkala, Chaouia) where rangeland is available. Water fowl is frequently encountered in areas where water is plentiful (e.g. Gharb, Tangerois, etc.) (Vaysse, 1950).

The demand on Beldi poultry products has increased because of their nutritious and healthy image as natural products, as the

Figure 1. Laying hens with various phenotypic characteristics.

Figure 2. The desired type of roosters.

birds are raised in a clean environment with no industrial residues. Furthermore, there is somehow a unanimous recognition of the high organoleptic properties of their meat and eggs, markedly superior to that of the so-called industrial modern birds (considered as lacking flavour and taste).

Beldi birds whether chickens or turkeys are always priced higher than other birds.

Very little is known however, about these flocks, their management, bird performance, disease resistance and adaptation to local conditions.

The aim of this study was to assess the current state of Beldi flock farming, to investigate their performance, management and productivity. Special attention was given to the assessment of the most limiting factors to raising Beldi chickens in rural systems and specific recommendations were also discussed.

Material and Methods

Location

The Khenifra Region was selected for this study because it was representative of several villages of the Middle-Atlas Mountains. The people of that Region preserved much of their cultural identity and traditions with very little input from the city. The area selected for the enquires was considered relatively uninfluenced by large-scale urbanization and yet relatively easily accessible at all times.

Duration

The information for the study was gathered in 2000 and 2001, after the usual harsh conditions of the wintertime.

Data collection and analysis

Participants in this study included all local households raising poultry (i.e. 52 out of 106 households) and those involved in the selling channels (nearly 12 intermediaries). All the households were interviewed by a team to provide an overall view of the socio-economic environment of the flocks and their owners. This preliminary phase lasted for the first three months of the study and was further completed during two yearly investigations conducted.

All data regarding flock size and composition, productive and reproductive performance and management were analysed with descriptive statistical methods and involved 554 chickens and 168 turkeys in 52 households.

Results

General information

Rural poultry keeping was essentially women's business. Seventy-three percent of the flocks were managed by women and represented their main activity in 58 percent of the cases. Ninety-four percent of the households owned chickens and 36 percent owned turkeys.

Fifty-four percent of the birds in the flocks were hatched on the farms while 46 percent were purchased mostly from the weekly rural markets. Poultry were by far the most prevalent livestock raised on the farm with flock size ranging from 0 to 58.

Each household owned on average 11 chickens and / or nine turkeys. The size of each individual turkey flock ranged from two to 25 birds, most of the flocks having between six and 11 turkeys. These numbers were for turkeys especially, survivors of larger clutches (hatched usually by a hen). The ratio of males to female was 1:1.7 for turkeys and 1:4.6 for chicken flocks (both figures did not seem to be a specific target aimed at by farmers). Beldi chicken flocks ranged in size from 1 to 38. Occasionally, turkeys and guinea fowls were kept with the chicken.

Description of the birds

Beldi chickens were characterized by a wide phenotypic variability particularly in plumage colour. Various colours were present (Figures 1 to 3).

Black, brown, grey and white colours pure or mixed, were frequently observed whereas mainly bronze turkeys were encountered. Fourteen naked necks (3.1 percent of the total birds observed) and no frizzled feathering was observed in chicken.

Barred, mottled and "mille fleur" patterns were observed in feathering in chickens. Four types of combs were the most frequently encountered; namely lobular (33 and 30 percent), dented (37 and 28 percent) leafy (4 and 4 percent) and single (26 and 38 percent) in roosters and chicken hens, respectively. Eggshell colour ranged from white to dark brown in chickens.

Management conditions

Rudimentary housing consisting of a variety of home-made shelters was made available in 79 percent of the households (an increased ratio compared to 64 percent in 1986 and 71 percent in 1993). Local materials such as bamboo, wood, stones and plastic screens were used in small unpaved windowless compound yards (Figure 4 and 6).

The birds spent the night in most cases on trees, in barns, on roofs and in sheepfolds, etc. The newly hatched chicks were usually kept in open areas of the houses whereas the

Figure 3. Birds with naked necks

Figure 4. A turkey clutch fed in the open area of a house.

young and laying birds were kept around the house in enclosed plots of land. Rarely were the flocks kept in total enclosure.

Poultry were encouraged to forage in and around the compound of the households and in leaf litter, with little or no feed supplementation.

Supplementary feeds provided (i.e. wheat bran, barley, wheat, screenings, corn, compound feed, dry bread and kitchen leftovers) were mostly locally available (25 to 95 percent of the cases) and were given on the floor or in recycled pots. Cereals, weed seeds, insects, worms and various herbs were the main feed resources scavenged by the birds.

About 94 percent of the surveyed farmers supplied their birds with water in rudimentary pottery pots, earth and plastic ware, cans and a variety of other recipients from their wells (61 percent) or from natural springs (9 percent).

Reproductive performance

Sexual maturity was reached at about 154 and 168 days for roosters and hens and around 217 and 231 days for turkey toms and hens, respectively. The age at which hens laid their first egg was 5.8 months for hens and 8.4 months for turkeys. Sixty-nine days separated two laying cycles on average for chickens whereas the number of clutches per year amounted to two or three. Hatchability figures were 78 percent (from 46-100 percent) for chickens and 80 percent (from 0-94 percent) for turkeys as shown on table 1.

Owners selected eggs for incubation based on hen performance, body size, egg size and colour and the presence or absence of males in the flocks. Rankings of these parameters were quite variable among households reviewed. Clutch size was on average 14 for a chicken hen (from eight to 20) and 19 for a turkey hen (14-30) depending on egg size and hen body size. The average number of

Table 1. Reproductive performance of Beldi chickens and turkeys.

	Chickens				Turkeys			
Performances	n[1]	Average	Min	Max[2]	n[1]	Average	Min	Max[2]
Sexual maturity								
Male (month)	50	5.50±1.33	-	10	19	7.70±2.75	-	12
Female (month)	50	5.80±1.24	-	10	19	8.20±3.37	-	18
Age at first egg (days)	52	5.80±1.13	4	10	19	8.40±2.56	5	12
Laying cycle duration (days)	52	27.00±8.90	15	60	19	31.0±5.90	20	40
Number of clutches per year	50	3.00±0.82	1	5		2.00±0.71	1	4
Clutch size (number of eggs)	50	14.00±2.10	8	20		19.0±3.5	14	30
Hatchability (%)	50	78±14	46	100		80±21	0	94

[1]Number of observations.
[2]Average, minimum and maximum values observed.

clutches per year was three for chickens (ranging from one to five) and two for turkeys (one to four). Quite often turkey eggs were hatched by hens, the newly hatched chicks serving as guides for the rest of the chicks.

Productive performance

The number of laying hens per household varied from zero to five in chickens. They laid eggs all year round with a marked peak in spring and summer (39 and 22 percent of the participants, respectively). Egg production averaged 78 eggs per hen per year (from 49-150) and 59 per turkey hens (from 25 to 100). Culling age was nearly two and a half years for chicken laying hens as shown in table 2.

Average body size was 1.2-1.4 kg. Body size and conformation were fairly homogeneous among birds, probably due to the low nutritional state of the flocks.

Mortality

Mortality rates were higher among young birds and laying hens. They ranged from 46-76 percent in young chicken and from 38-77 percent in mature ones and 46 and 12 percent, respectively for turkeys with a high incidence in winter and summer (Table 2). Mortality was essentially attributed to diseases with symptoms compatible with those of New Castle disease. Winter cold weather increased mortality rate by nearly 10 percent in cold years. A major concern for people raising Beldi chickens remains the high mortality rates which decimate several flocks in spite of the use of a variety of traditional medicines such as olive oil, onion, garlic, pepper, paprika and others.

Poultry products use

Most people recognize excellent organoleptic properties of both eggs and meat of Beldi chickens and turkeys, markedly superior to those of the modern breeds, which allegedly lack flavour and taste.

Poultry products are often used for local consumption (48 percent) and sales (52 percent) (Figure 5). Some exchange of fertile eggs occurs when there are no roosters in a given flock. On average household consumption is 16 chickens and about 11 turkeys and respectively, 50 and 36 eggs per year.

Table 2. Productive performance of Beldi poultry.

	Chickens				Turkeys			
Performance	n[1]	Average[2]	Min	Max	n[1]	Average[2]	Min	Max
Number of egg laid	52	78.0±20.9	49	150	19	59.0±21.0	25	100
Mortality (%)	52	Young	46	76	19	Young	46	
		Adults	30	77		Adults	12	

[1]Number of observations.
[2]Average, minimum and maximum observed.

The long time taken for growth along with the seasonal demand were claimed to be the main reasons for high prices of adult turkeys which may range from 95-133 Dh per tom and 69-93 Dh per hen, respectively (US$1=10 Dh); whereas chicken prices varied from 54-62 Dh for roosters and 34-43 Dh per hen.

The tradition of raising Beldi poultry also had a strong sense of pride for women who kept several types of birds.

Figure 5. Roosters for sale in Khenifra city.

Discussion

Scientific reports or investigations on Beldi chicken and turkeys are lacking. Further investigations are currently undertaken to precisely measure, for example, on-farm specific targeted weight; and average weight gains at different ages for each sex and species.

The preliminary data observed on flock management and rearing techniques of Beldi chickens are fairly similar to those encountered elsewhere. Bird productive performance such as body size, rate of lay and egg weight are slightly higher than those recently reported from Sénégal (Missohou, 1998) or Cameroon (Agbede *et al.*, 1995).

Exposure to disease outbreaks, drought and other environmental conditions have led to naturally selected strains of chicken and turkeys with high rusticity and wide diversity that may help create crosses for specific purposes. Indeed cross-breeding offers a possible strategy to use local breeds for farm poultry production. Cross-breeding offers the possibility to benefit from heterosis and the development of synthetic lines. Previous work from our laboratory has shown that special crosses of local lines and a special commercial cross may sustain acceptable performance levels with an overall economic profitability (Benabdeljelil and Merat, 1992).

The concomitant improvement of raising conditions in association with efficient sanitary programmes will significantly reduce mortality losses and increase productivity. Mallia (1998) describes Mediterranean breeds as light breeds with a low weight and slender appearance. They are characterized by a well developed single comb and prominent white ear lobes. The males have a rather large arched tail with prominent sickles. The hens are non-sitting and lay white-shelled eggs. These characteristics also found in the Beldi chickens are quite different from their African counterparts such as in Senegal (Missohu, 1998) and Cameroon (Agbede, 1995). Given Morocco's geographical location, it seems likely that Beldi chicken have had more random cross- breeding with strong Mediterranean influence than with other populations.

Conclusion

There is a great sense of urgency and need to preserve the genetic variability of the Beldi poultry in Morocco. More information needs to be collected and assessed to prevent their extinction and to promote their utilization.

Further studies should focus on a detailed assessment of morphometric characteristics and production data on samples taken from

Figure 6. Birds of various species housed in metal and wooden boxes.

different regions of the country. They should emphasize the genetic characterization of the populations.

Acknowledgements

The authors would like to thank the people of Agoudim villages (Khenifra) for their kind collaboration and the Benson Institute (BYU University, Provot USA) for their financial support.

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Report of Second *ad hoc* session of International Stakeholders in Animal Genetic Resources FAO, Rome (Italy), 5-6 June 2001

Main conclusions of the session

- Animal genetic resources are global assets that will increasingly contribute to food security and alleviation of poverty, and must be wisely used, developed and conserved, to meet current and future demands for animals and animal products.
- FAO has been given the important task to coordinate the preparation of the First Report on the State of the World's Animal Genetic Resources, which will for the first time bring together all those with primary interests and responsibilities for the management of animal genetic resources. In order to undertake this important initiative, stakeholders and donors should enhance their efforts to support FAO.
- To facilitate the involvement of the donors and stakeholders, FAO should clarify the outcomes that result from the preparation of the First Report on the State of the World's Animal Genetic Resources. FAO also needs to increase understanding of the financial and other resources required to undertake these activities, continue to identify opportunities for the involvement of donors and stakeholders throughout the process, and define modalities for their involvement, including the establishment of formal arrangements for collaboration.
- The initial phase of the process for developing the First Report on the State of the World's Animal Genetic Resources will focus on the preparation of Country Reports. These are intended to be planning instruments enabling countries to strategically plan the management of animal genetic resources to increase the contribution of animals and animal products to food security and economic development. Stakeholders and donors agreed that it will be essential that a large number of Country Reports be prepared over the next 18 months to encourage and assist all countries to participate in this important initiative.
- Many developing countries might not have sufficient financial resources to undertake preparation of their Country Reports. Donors and stakeholders have agreed to assist FAO to seek financial and other resources necessary to undertake the preparation of the First Report on the State of the World's Animal Genetic Resources, including the preparation of Country Reports. In order to facilitate this collaboration, FAO should prepare documentation of the required resources, and the countries and regions that need assistance.
- Donors and stakeholders have agreed to increase awareness of the First Report on the State of the World's Animal Genetic Resources using their networks of contacts, meetings, workshops, and other events. The following intergovernmental meetings were identified as important events where animal genetic resources should be profiled: the seventh meeting of the Subsidiary Body on Scientific, Technical and Technological Advice to the Convention on Biological Diversity (SBSTTA 7 - November 2001); regional biological diversity convention preparatory meetings; the sixth meeting of Parties to the Convention on Biological Diversity (COP 6 - April 2002); and Regional Conferences of FAO (2002).
- Efforts by FAO to involve and expand the range of stakeholders should continue in the preparation of the First Report on the State of the World's Animal Genetic Resources, further engaging international organizations, regional institutions and networks, agricultural production and research organizations, national universities, professional and scientific

societies, private sector interests, consumer associations, relevant international nongovernmental organizations, zoos and farm parks, and other stakeholders. It was recognized that many of these interests would require financial support to enable their full participation and contribution to the preparation of the First Report.

- FAO should establish or enhance existing mechanisms to ensure regular, preferably monthly, updating and reporting to all interested parties of activities related to the preparation of the First Report on the State of the World's Animal Genetic Resources. The update should report on progress and indicate opportunities for the involvement of donors and stakeholders, and the issues that require their assistance.
- Opportunities for national stakeholders to be involved in the process of developing Country Reports should be identified, especially to ensure the participation of farmers, breeders, and local and indigenous communities. Donors and stakeholders have agreed that if the recommended process described in the Guidelines for the Development of Country Report is followed, opportunities for contributions of a wide range of national stakeholders can be achieved.
- Pilot projects are necessary to demonstrate the roles and values of Country Reports as strategic documents that will enable the better management of animal genetic resources. Pilot projects involving donors and stakeholders should be initiated as soon as possible to put into practice the strategic priorities identified in the Country Reports. They should also be undertaken to initiate action in response to the Strategic Priorities Report that will result from the synthesis of the first available Country Reports.
- Donors and stakeholders concluded that the preparation of Country Reports by August 2002 is an extremely ambitious schedule. However, they supported this schedule, indicating the need to complete Country Reports in order to ensure preparation of the Strategic Priority Report by 2003 and its presentation to the Commission on Genetic Resources for Food and Agriculture, and to ensure completion of the First Report on the State of the World's Animal Genetic Resources by 2005.

Workshop on "Community-Based Management of Animal Genetic Resources" 7-11 May, 2001 Mbabane, Swaziland

The workshop was jointly planned and organized by the SADC/FAO/UNDP project on "Management of Farm Animal Genetic Resources in the SADC Region", the Southern Africa Centre for Cooperation in Agricultural Research and Training (SACCAR), the SADC Livestock Coordination in Botswana and the German Technical Cooperation (GTZ) through the project "Managing Agrobiodiversity in Rural Areas". The workshop was hosted by the Department of Veterinary and Livestock Services of the Kingdom of Swaziland. Seventy one participants from the SADC region and beyond attended.

The workshop was a joint venture of interested to enhance the potential of Animal Genetic Resources (AnGR) for the improvement of rural livelihoods and conserving genetic diversity in SADC region. The aspect of community-based management is relatively new with regard to the animal genetic resources. Therefore, the workshop aimed at reaching a common perspective and shared understanding among the major players in the SADC region and to identify joint learning opportunities for future action. During the workshop a group was formed who tried to capture the essence of the output in a short statement to be presented to relevant fora. Instead of a summary, this statement will be shown here:

The workshop was a first step to develop a conceptual framework for community-based management of animal genetic resources (CBMAnGR). This concept is based on the assumption that farmers are the custodians of Farm Animal Genetic Resources (FAnGR) and, therefore much better placed to manage these resources. CBMAnGR is an approach that integrates the livelihood needs of local communities (food security and poverty alleviation) and the call of the Convention on Biological Diversity to conserve biodiversity in its "natural habitats" through sustainable use.

Objectives of the workshop were to:

- elaborate recommendations to policy makers, donors, NGOs and other relevant actors of the SADC region with regard to community-based *in situ* conservation;
- develop strategic elements for *in situ*-conservation of AnGR at the political, institutional and communal level of the management of agricultural biodiversity;
- strengthen networking on AnGR in SADC and further the harmonisation of AnGR-related national policies and strategies.

The workshop provided an opportunity for scientists, extensionists and representatives from NGOs from the SADC region to meet together with some international colleagues and exchange experiences and ideas. The highly motivated participants created a momentum for further developing and implementing the concept of CBMAnGR. The achieved results and recommendations provide input to SADC processes dealing with FAnGR management and will be brought to the respective FAO and CBD processes for consideration. It was recommended to formulate policies for the support of CBMAnGr in the SADC region. The next steps will be the publication of the papers and case studies and the outputs of the theme groups established.

Seventh session of the "Subsidiary body for scientific, technical and technological advice of the Convention on Biological Diversity" 12-16 November 2001, Montreal, Canada

The seventh session of the Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA-7) of the Convention on Biological Diversity (CBD) met from 12-16 November 2001, in Montreal, Canada. Over 515 participants from 113 governments, joined by representatives from intergovernmental, non-governmental, academic and indigenous organisations, attended the meeting. Delegates met in two working groups. Working Group I , focusing on forest biodiversity, held general discussions on a recommendation addressing bushmeat and status, trends and threats, as well as on a work programme with elements on: conservation, sustainable use and benefit sharing; institutional and socioeconomic enabling environments; and knowledge, assessment and monitoring. Working Group II considered and prepared recommendations on agricultural biodiversity, including the International Pollinators Initiative, the plant conservation strategy; incentive measures; indicators; and environmental impact assessment.

The forest work programme proved to be a considerable undertaking, which will require extensive intersessional work on actors, timeframes and process indicators. Overall, delegates were pleased with the substance of the final outputs, while noting that the challenge ahead is prioritization of activities within the forest work programme. Delegates also appreciated Working Group II's expedient discussions on agricultural biodiversity, the plant conservation strategy, incentives, indicators, and environmental impact assessment. The recommendations from SBSTTA-7 will be forwarded to the sixth meeting of the Conference of the Parties (COP-6), to be held from 8-19 April 2002, in The Hague, the Netherlands. The task for COP-6 will be to make the necessary political decisions to ensure effective implementation of the work of the SBSTTA and other intersessional processes under the Convention.

Proceedings of the 2001 International Conference on Boer Goats

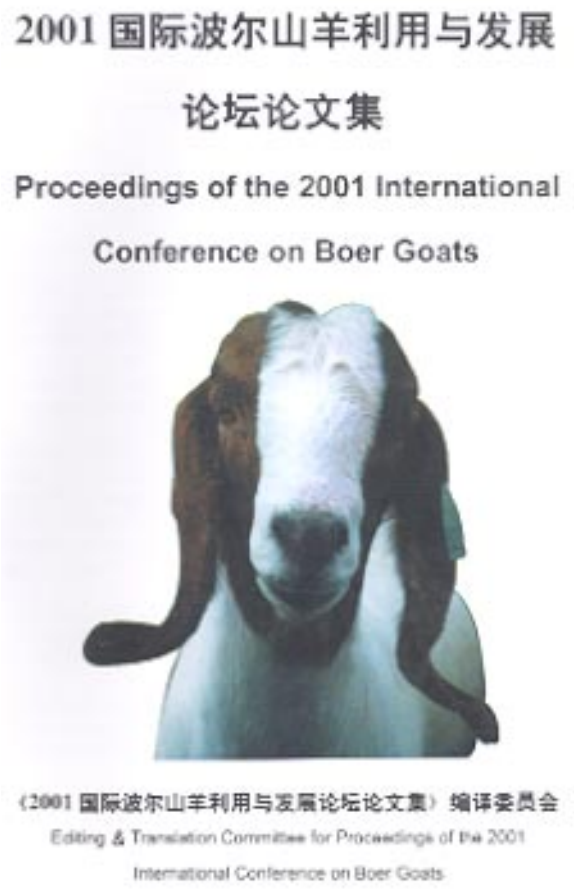
Guizhou, China, 21-24 October 2001
Sponsored by International Goat Association (IGA), Society of Sheep and Goat Research (SSGR) and Chinese Association of Animal Science & Veterinary Medicine (CAAV)
Edited by Boer Goat Breeding Co. Ltd, Guizhou
Boer Park Ganbao Anshun, P.O. Box 99, 561014 Anshun
Guizhou, China
Published in 2001, pp. 328

The 2001 International Conference on Boer Goats was held in Guizhou, China, from 21 to 24 October. The meeting was initiated by the Guizhou Boer Goat Company, Ltd. and the Guizhou Provincial Agriculture Department, strongly supported by Heifer International (HI) China Office, sponsored by the International Goat Association (IGA), the Society of Sheep and Goat Research (SSGR) and the Chinese Association of Animal Science & Veterinary Medicine (CAAV).

This conference was a great opportunity for promoting communication among academic researches, the exchange of production experiences and marketing information for the advancing of meat (Boer) goat industry in China.

The opening ceremony was held on October 21, chaired by Prof. Huang Yonghong, President of the Organising Committee. 101 participants from USA, Korea, Australia and China attended the conferences. Prof. Christopher D. Lu, Vice President of IGA, Dean of School of Agriculture & Natural Resource of New York State University, inaugurated the opening ceremony, analysing the goat industry development in China and appointing much importance to local goat genetic resources. Prof. Lu also introduced what IGA is and its mission

Nineteen speakers presented their paper during the plenary session. Following the plenary session, two sub-groups were formed, focusing on basic theory of breeding and production application, respectively. The works of these two sub-groups analysed the relationship between goats and environmental conservation, local breeds' preservation, marketing management of Boer goats, reproduction, extension of Boer goats among the family farms.

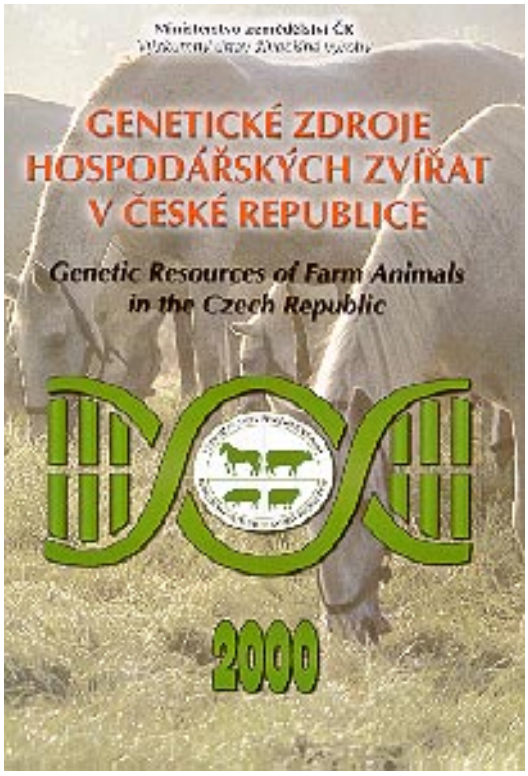


Genetic Resources of Farm Animals in the Czech Republic

Research Institute of Animal Production,
Ministry of Agriculture, Prague, Czech Republic
Published in 2000, pp. 42

This small pamphlet, in Czech and English, covers genetic resources in cattle, pigs, sheep, goats, horses, poultry, rabbit and nutria, fish and bee. It is obvious that the pamphlet does not cover all breeds in these species and it is not clear on what basis the reported breeds were chosen. In all species, but bee and fish, the publication unfortunately reports only 15 breeds, while the corresponding number of breeds in the FAO DAD-IS is 74. Quality colored photos are provided for the reported breeds.

For each breed, the national structure for animal controls and methods of breeding and conservation are briefly exposed, together with a short summary of their production characteristics, population numbers and economic values. In some cases, short historical notes are also given, in order to provide a frame of the national animal genetic resources.

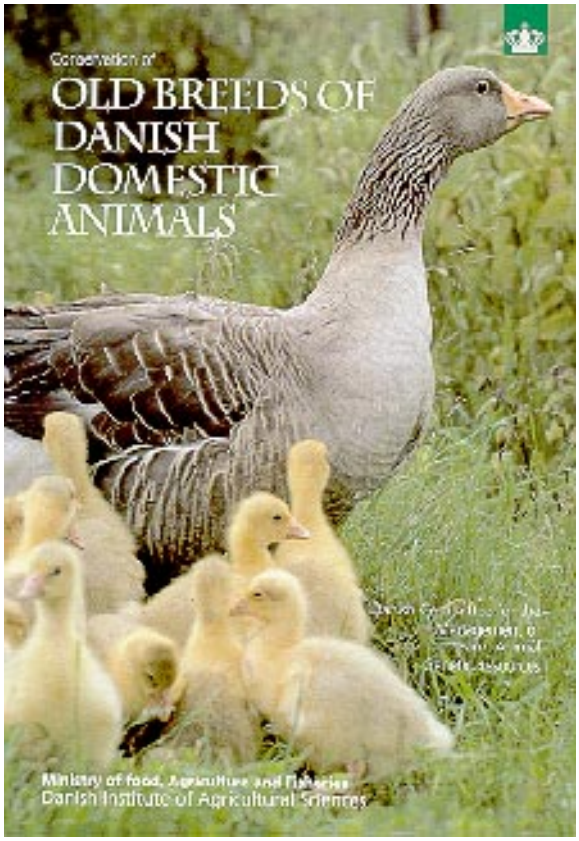


Old Breeds of Danish Domestic Animals

Danish Institute of Agricultural Sciences, Ministry of Food, Agriculture and Fisheries, P.O. Box 50 DK-8830 Tjele, Denmark.
ISBN: 87-7026-2918. pp. 35, English (no explicit year of publication)

This brochure describes the start of the animal genetic resources conservation in Denmark and the activities of the Danish Genetic Resources Committee. The publication gives description and the state of population for 20 old breeds; 3 horse, 4 cattle, 2 pigs, 1 sheep, 1 goat, 1 rabbit, 1 fowl, 1 goose, 1 duck, 3 pigeon, 1 bee and 1 dog with quality photos for each of them. The brochure provides what actions are being taken to safeguard some of these breeds.

A brief description of the conservation activities undertaken in Denmark are also listed and a summary of the future conservation work is described. Clear photos of the reported breeds illustrate to the reader the individual physical characteristics of the animals and production data report the economic relevance, justifying the preservation work.



Management of Animal Genetic Resources Diversity at Community Level

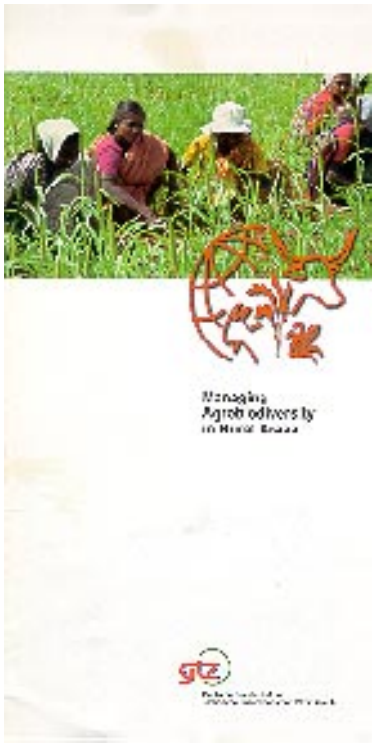
I. Kohler-Rollefson (Ed.)
Deutsche Gesellschaft Fur Technische Zusammenarbeit (GTZ) GmbH
Published in 2000, pp. 24

This publication, dealing with management of genetic diversity in agriculture, summarises different aspects of general biodiversity by the same publisher.

The historical framework, that has as starting point the Convention of Biodiversity signed in Rio de Janeiro (1992), is reported, following the temporal steps through which the public awareness was aroused.

The publication emphasizes the importance of local breeds and the indigenous knowledge in maintaining genetic resources, menaced by erosion and loss.

Interestingly, the publication criticises the attitude of policy makers and donor community, GOs and NGOs, for pushing exotic breeds without clear view of their sustainability in the foreign environments. It gives examples / elements of how to initiate community-based conservation programs for the development of livestock breeds. The publication is quite readable with an extensive list of relevant bibliography.



Pig Genetic Resources in Europe

L. Ollivier, F. Labroue, P. Glodek, G. Gandini & J.V. Delgado (Eds)
EAAP publication no. 104
WageningenPers, P.O. Box 42, 6700 AA Wageningen, The Netherlands
Published in 2001
ISBN 9074134939
ISSN 0071-2477, pp. 150

Europe shares a large part of the world pig population (circa 20%) as well as of the world pig genetic diversity (circa 46% of the breeds in the world inventory). However, the European pig industry relies on a rather limited number of breeds, among which the Yorkshire pig, named also Large White, is largely predominant.

The necessity to maintain diversity and to develop alternative stocks for meeting a wide variety of production / market conditions is recognised, as well as the ensuing need to establish sound conservation programmes. This book presents an overview of the situation of pig genetic resources in 4 major pig producing countries of the European Union, namely France, Germany, Italy and Spain. The information gathered is intended as a basis for rationalising the conservation of European pig genetic resources, through a better characterisation of the available breeds and an evaluation of their genetic diversity. Conservation policies are also outlined, addressing both live animals and cryopreserved germplasm; in particular recommendations are given for establishing gene banks from local breeds exposed to serious risks of genetic erosion if not complete extinction.

Contributions from a large number of European experts in the field of pig production and genetics, conservation genetics and reproductive physiology have been gathered in this book: it should thus be of interest for a wide audience throughout the pig industry.

Students and researchers will find in it information of scientific interest on a very diverse sample of breeds. Finally, the economic dimension given to the various conservation strategies should be of some benefit to decision-makers in the area of domestic animal conservation under European conditions.

Horses of the Anglo Boer War

F J. van der Merwe (Ed.)
P.O. Box 664, Kleinmond 7195, South Africa
Published in 2001 (in English and Afrikaans)
ISBN 0-620-25889-6
pp. 50

Commemorating the centenary of the Anglo Boer War, it is more than fitting to also pay attention to the role played by hundreds of thousands of horses in that dreadful conflict which lasted for three years between the British and the South Africans; a war which - amongst other horrible outcomes - dealt a devastating blow to the South African horse-breeding industry.

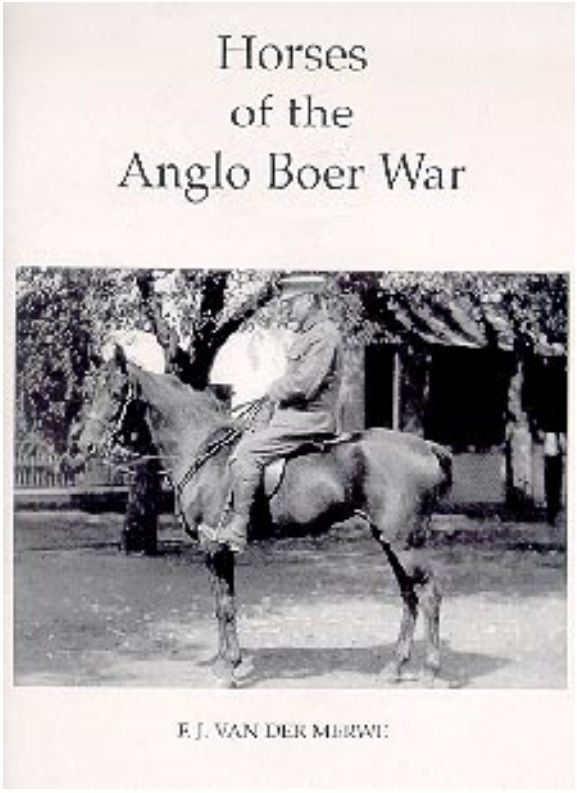
It is also entirely fitting that the Nooitgedacht Horse Breeders' Association should have taken the initiative, to undertake a symbolic, commemorative ride on Nooitgedacht horses from Cape Town to Pretoria.

The present-day Nooitgedacht horses can be taken as direct descendants of a true South African breed - the Basuto pony - which was ridden by combatants on both sides in the war and which themselves were direct descendants of the erstwhile world-renowned Cape Horse.

In preparing this brief publication the Author tried, in words and pictures, to bring to the reader some perception of the absolutely essential role played by horses in the war in South Africa; of the pain and suffering they endured.

In researching the subject, the Author found on the British side a wealth of printed information of all aspects of the part played by their horses and of the severe problems the British forces had with the supply and maintenance of this part of their army.

Unfortunately, during his research, the Author also showed that there are virtually no statistics or other objectively written evidence on the numbers of horses taking part on the Boer side, and of the losses in terms of riding and breeding stock.



The Preserved Slovenian Autochthonous Domestic Animals

D. Kompan, A. Salehar & A. Holcman (Eds)
Published by Slovenian Ministry of Agriculture Forestry and Food and by University of Ljubljana, Biotechnical Facylty, Zootechnical Dept.
Published in 1999, pp. 40
www.bfro.uni-lj.si/zoo/publikacije/avtohtone_pasme

The rearing of domestic animals in Slovenia was well developed as far back as the middle-ages. This is illustrated in a fresco painted calendar in the medieval church of Hrastovlje. Valvasor (1689) writes about the rearing of horses, cattle, sheep, goats, pigs, donkeys, etc. in the Kraniska province. He stresses the fact that the Karst horses from Kranjska region are among the best in Europe, known for their persistency, longevity, their patience with riders and willingness to work.

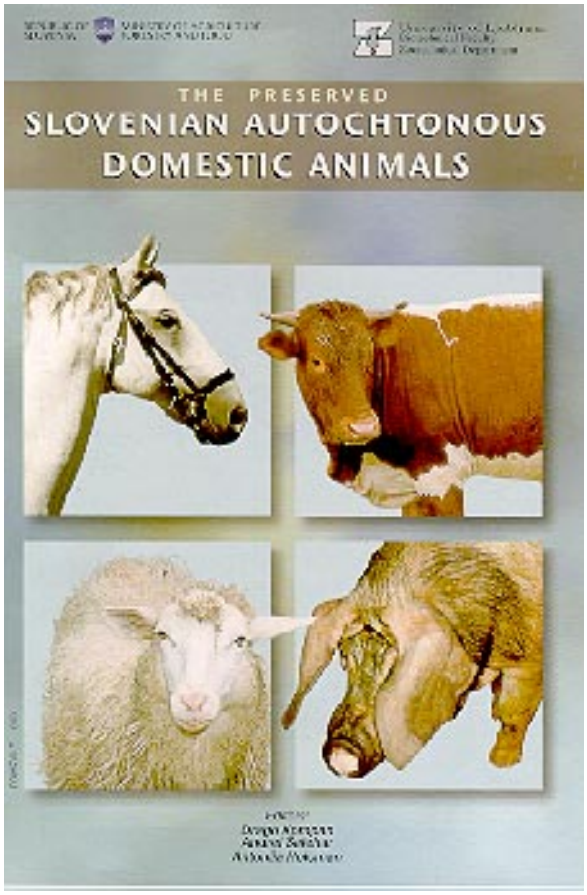
At the beginning of the century there were 713 502 heads of cattle (in 1998 there were 453 097), 166 398 sheep (72 361), 25 600 goats (16 779), 62 208 horses (9 898 in 1997) and 527 736 pigs (592 378) recorded in the inventory. Numerically, Slovenia had more animals in the past century than now. Of these animals, the Slovenian autochthons brought farmers the greatest share of their income. In some animal husbandry branches - namely chicken and pig rearing - the native breeds from a century ago have almost completely been replaced by today's modern breeds.

Today, the autochthonous domestic animals are relied upon as an important source of these unique animal's genes, that will retain biological diversity and contribute to the implantation of specific characteristics into the genotypes of modern breeds. For this reason, scientists have been trying to recover these ancient breeds.

Since 1991 the Slovenian Ministry of Agriculture, Forestry and Food has financially supported an on going project of conservation of native Slovenian species of domestic animals.

Thus, this small booklet summarises the national framework for the conservation of these genetic resources and show clear photos of the morphological characteristics of the breeds, including some well-known breeds as the Lipizzan horse, the Istrian Pramenka sheep and the Cika cattle.

This booklet does well in increasing the awareness for the importance of the conservation of these genetic resources.



Progress in South American Camelids Research

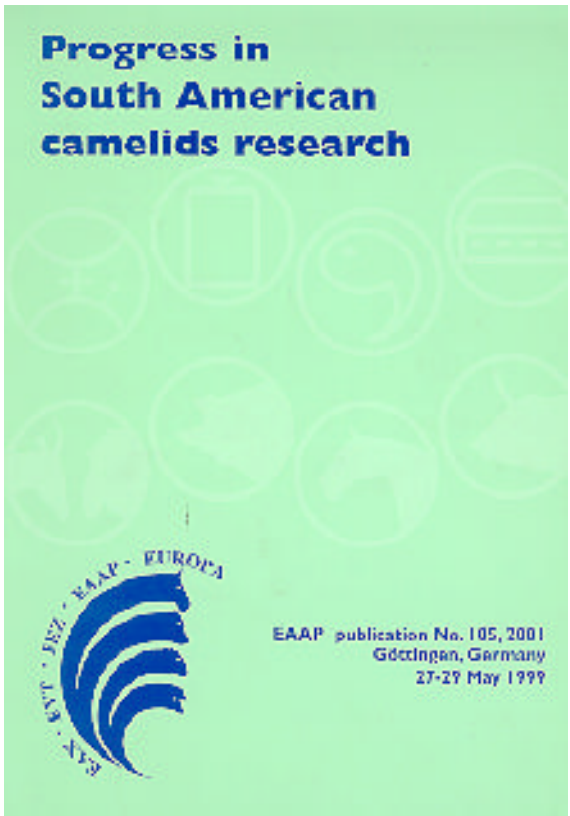
M. Gerken & C. Renieri (Eds)
Proceedings of the 3rd European Symposium on South American Camelids and SUPREME European Seminar, Gottingen, Germany 27-29 May 1999
EAAP publication no. 105
WageningenPers, P.O. Box 42, 6700 AA Wageningen, The Netherlands
Published in 2001
ISBN 9074134912
ISSN 0071-2477, pp. 350

Advanced and up-to-date research results are reported in these proceedings of the 3rd European Symposium on South American Camelids (Gottingen, Germany). Results were presented by European researchers working both on domesticated South American camelids (llama & alpaca) and Wild South American camelids (vicuna & guanaco), as well as by the EU research project SUPREME (Sustainable Production of Natural Resources and Management of Ecosystems). Results carried out on domestic camelids by research companies and NGOs from 4 different European (EU) countries (France, Germany, Italy & U.K.) and 5 Latin-American countries (Argentina, Bolivia, Chile, Ecuador & Peru) are also reported and presented.

The main themes of discussion were the following: Ecology, Sustainability and Socio-economics, Breeding and Genetics, Reproduction and Pathology, Fibre and Meat Production and Nutrition. Results were reported in three final round-table meetings "EU-Politics for the development of the Andean regions", "Sustainable use of South American camelids in South America" and "Breeders and keepers".

The significant attendance of farmers, as well as of private companies willing to engage in Camelid farming, along with the great interest shown on importing South American camelids into Europe, was noticeable at this symposium.

These proceedings thus constitute an important step towards the understanding of technical and socio-economic problems in South American camelids production. Researchers and farmers will find this volume a valid instrument for up-to-date knowledge on South American camelids, as well as for practical solutions to farming problems.



Editorial Policies and Procedures

The mission of the Animal Genetic Resources Information Bulletin (AGRI) is the promotion of information on the better use of animal genetic resources of interest to food and agriculture production, under the Global Strategy for the Management of Farm Animal Genetic Resources. All aspects of the characterization, conservation and utilization of these resources are included, in accordance with the Convention on Biological Diversity. AGRI will highlight information on the genetic, phenotypic and economic surveying and comparative description, use, development and maintenance of animal genetic resources; and on the development of operational strategies and procedures which enable their more cost-effective management. In doing this AGRI will give special attention to contributions dealing with breeds and procedures capable of contributing to the sustainable intensification of the world's medium to low input production environments (agro-ecosystems), which account for the substantial majority of the land area involved in livestock production; the total production of food and agriculture from livestock; and of our remaining farm animal genetic resources.

Views expressed in the paper published in AGRI represent the opinions of the author(s) and do not necessarily reflect those of the institutions which the authors are affiliated, FAO or the Editors.

The suitability of manuscripts for publication in AGRI is judged by the Editors and reviewers.

Electronic publication

AGRI is available in full electronically on the Internet, in addition to being published in hard copy, at:
<< http://www.fao.org/dad-is>>

Types of Articles

The following types of articles are published in AGRI.

Research articles

Findings of work on characterization, conservation and utilization of farm animal genetic resources (AnGR) in well described production environments, will be considered for publication in AGRI. Quality photographs of these genetic resources viewed in the primary production environment to which they are adapted, accompanying the manuscripts are encouraged.

Review articles

Unsolicited articles reviewing agro-ecosystems, country-level, regional or global developments on one or more aspects of the management of animal genetic resources, including state-of-the-art review articles on specific fields in AnGR, will be considered for publication in AGRI.

Position papers

Solicited papers on topical issues will also be published as deemed required.

Other published material

This includes book reviews, news and notes covering relevant meetings, training courses and major national, regional and international events and conclusions and recommendations associated with the outcomes of these major events. Readers are encouraged to send such items to the editors.

Guidelines for Authors

Manuscript submission

Manuscripts prepared in English, French or Spanish with an English summary and

another summary in either French or Spanish, should be submitted to AGRI Editor, AGAP, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy. Alternatively a manuscript may be sent as a WinWord Electronic Mail attachment to < agri@fao.org >. Photographs, coloured or black and white, and figures must be always sent by mail.

Manuscripts should be typed double-spaced and with lines numbered in the left margin. All pages, including those of references, tables etc., must be consecutively numbered. The corresponding author is notified of the receipt of a manuscript.

For manuscripts that are accepted after revision, authors are encouraged to submit a last version (3½" disc format) in Word 6.0 for Windows of their revised manuscript along with the printed copy.

Preparation of the manuscript

The first page of the manuscript must include the running head (abbreviated title), title, names of authors, institutions, full addresses including postal codes and telephone number and other communication details (fax, e-mail, etc.) of the corresponding author. The running head not exceeding 45 characters plus spaces, should appear at the top of page 1 of the manuscript entirely in capital letters. The title of the manuscript is typed in upper and lower case letters. The title should be as brief as possible not exceeding 150 characters (including spaces) with species names when applicable. Authors, institutions and addresses are in upper and lower case italics. There is one blank line between the title and the authors. Addresses are typed as footnotes to the authors after leaving one blank line. Footnotes are designated numerically. Two lines are left below the footnotes.

Headings

Headings of sections, for example Summary, Introduction, etc., are left-justified. Leave two blank lines between addresses footnotes and Summary and between the heading Summary and its text. Summary should not exceed 200 words . It should be an objective summary briefly describing the procedures and findings and not simply stating that the study was carried on such and such and results are presented, etc. Leave one line between the summary text and Keywords which is written in italics as well as the keywords themselves. All headings of sections (14 regular) and sub-sections (12 regular) are typed bold and preceded and succeeded by one blank line and their text begins with no indention. The heading of a sub-subsection is written in italics, and ends with a dot after which the text follows on the same line. Keywords come immediately after the summaries. They should be no more than six, with no "and" or "&".

Tables and figures

Tables and figures must be enclosed with the paper and attached at the end of the text according their citation in the document. Photos will not be returned

Tables

Tables, including footnotes, should be preceded and succeeded by 2 blank lines. Table number and caption are written, above the table, in italics (12) followed by a dot, then one blank line. For each column or line title or sub-title, only the 1st letter of the 1st word is capitalized. Tables should be numbered consecutively in Arabic numerals. Tables and captions should be left justified as is the text. Use horizontal or vertical lines only when necessary. Do not use tabs or space-bar to create a table but only the appropriate commands.

Figures

Figures including titles and legends should be preceded and succeeded by two blank lines. Figure number and title are written, below the figure, in italics (12) and end with a dot. The term figures includes photos, line drawings, maps, diagrams etc.

All the submitted diagrams, must be

accompanied with the original matrix of the data used to create them. It is strongly advised to submit diagrams in Word 6.0 or Excel 5.0. Figures should be numbered consecutively in Arabic numerals.

References

Every reference cited in the text should be included in the reference list and every reference in the reference list should have been mentioned in the text at least once. References should be ordered firstly alphabetically by the first author's surname and secondly by year.

Example for reference in a periodical is:

Köhler-Rollefson, I., 1992; The camel breeds of India in social and historical perspective. Animal Genetic Resources Information 10, 53-64.

When there are more than one author:

Matos, C.A.P., D.L. Thomas, D. Gianola, R.J. Tempelman & L.D. Young, 1997; Genetic analysis of discrete reproductive traits in sheep using linear and nonnlinear models: 1. Estimation of genetic parameters 75, 76-87.

For a book or an ad hoc publication, e.g., reports, theses, etc.:

Cockril, W.R., (Ed), 1994; The Husbandry and Health of the Domestic Buffalo. FAO, Rome, Italy, pp 993.

For an article in the proceedings of a meeting:

Hammond, K., 1996; FAO's programme for the management of farm animal genetic resources. In C. Devendra (Ed.) Proceedings of IGA/FAO Round Table on the Global Management of Small Ruminant Genetic Resources, Beijing, May 1996, FAO, Bangkok, Thailand, 4-13.

Where information included in the article has been obtained or derived from a World Wide Web site, then quote in the text, e.g. "derived from FAO. 1996" and in the References quote the URL standard form:

FAO, 1996; Domestic Animal Diversity Information System <http://www.fao.org/dad-is/>, FAO, Rome

For all future manuscript dispatch and correspondence regarding AGRI, please use the following mailbox:

agri-bulletin@fao.org

Thanks for the collaboration

Normes et règles éditoriales

L'objectif du Bulletin d'Information sur les Ressources Génétiques Animales (AGRI) est la vulgarisation de l'information disponible sur la meilleure gestion des ressources génétiques animales d'intérêt pour la production alimentaire et agricole, d'après les recommendations de la Stratégie Mondiale pour la Gestion des Ressources Génétiques des Animaux Domestiques. Tous les aspects relatifs à la caractérisation, la conservation et l'utilisation de ces ressources seront pris en considération, suivant les normes de la Convention pour la Biodiversité.

AGRI désire diffuser de l'information sur la génétique, les enquêtes phénotypiques et économiques et les desciptions comparatives, l'utilisation et la conservation des ressources génétiques animales, ainsi que toute information sur le développement de stratégies opérationnelles et de normes qui puissent permettre une meilleure gestion de la relation coût/efficacité. C'est pour cela que AGRI prendra spécialement en considération toutes les contributions référées aux races et aux normes capables de permettre une intensification durable des milieux (agroécosystèmes) à revenus moyens et bas dans le monde; qui comprennent la majeur partie des terres consacrées à l'élevage, à la production totale des aliments et l'agriculture provenants de l'élevage; et tout ce qui reste comme ressources génétiques des animaux domestiques.

Les opinions exprimées dans les articles publiés dans AGRI appartiennent seulement aux auteurs et donc ne représentent pas nécessairement l'opinion des instituts pour lesquels ils travaillent, la FAO ou les éditeurs.

L'opportunité ou non de publier un article dans AGRI sera jugée par les éditeurs et les réviseurs.

Publication électronique

En plus de sa version imprimée, la version totale de AGRI se trouve disponible sur Internet, sur le site:
<<http://www.fao.org/dad-is/>>

Types d'articles

Les articles suivants pourront être publiés sur AGRI:

Articles de recherche

Seront prises en considération pour leur publication sur AGRI les études sur la caractérisation, la conservation et l'utilisation des ressources génétiques des animaux domestiques (AnGR) accompagnées d'une bonne description du milieu. On encourage les auteurs à envoyer des photographies de bonne qualité qui montrent les races en question dans leur milieu naturel de production.

Révisions

Occasionnellement, des articles contenant une révision des agroécosystèmes, au niveau national, régional ou mondial, avec un ou plusieurs aspects se rapportant à la gestion des ressources génétiques animales, y comprises les mises à jour des différentes zones de AnGR, seront pris en considération.

Articles spécifiques

Ponctuellement, des articles sur des thèmes spécifiques pourront être demandés pour la publication d'éditions spéciales.

Autre matériel pour publication

Ceci comprend la révision de livres, nouvelles et notes de réunions importantes, cours de formation et principaux évènements nationaux, régionaux et internationaux; ainsi que les conclusions et recommendations par rapport aux objectifs des ces principaux évènements. Les auteurs sont priés d'envoyer ce genre de matériel aux éditeurs.

Guide pour les auteurs

Présentation du manuscript

Les articles se présenteront en anglais, français ou espagnol, avec un résumé en anglais et sa traduction en français ou en espagnol; et seront envoyés à l'éditeur de AGRI, AGAP, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italie. L'autre possibilité est d'envoyer l'article par courrier électronique avec le document adjoint en version WinWord à <agri@fao.org>. Les photographies, en couleur ou en blanc et noir, seront toujours envoyées par courrier normal.

Les manuscripts se présenteront à double interligne et avec le numéro correspondant à chaque ligne sur la marge gauche. Toutes les pages seront numérotées, y comprises celles avec les références bibliographiques, les tableaux, etc. L'auteur recevra une lettre lui donnant bonne réception de son document.

Lorsqu'un article, après sa révision, sera accepté, on demandera à l'auteur d'envoyer la version finale révisée sur disquette (format 3 1/2") en Word 6.0 x Windows, ainsi qu'une copie sur papier.

Préparation du manuscript

Sur la première page du manuscript on indiquera le titre de l'article en abrégé, le titre et noms des auteurs, des institutions, les adresses complètes (y compris code postal et numéro de téléphone); ainsi que tout autre moyen de contact tel que fax, e-mail, etc. avec l'auteur principal. Le titre abrégé ne devra pas dépasser les 45 caractères, plus les espaces nécessaires, et s'écrira sur la partie supérieure de la page 1 du manuscript en majuscules. Le titre en entier du manuscript sera écrit en majuscules et minuscules; il devra être aussi bref que possible, sans dépasser les 150 caractères (y compris les espaces nécessaires), et avec l'indication des noms des espèces. Les noms des auteurs, des institutions et les adresses seront en italique et en lettres majuscules et minuscules. On laissera un espace en blanc entre le titre et les noms des auteurs. Les adresses seront indiquées comme des notes à pied de page pour chacun des auteurs après avoir laissé un espace en blanc après les noms. Chaque note de pied de page sera numérotée. On laissera deux espaces en blanc après les adresses.

Titres

Les titres de chaque chapitre, par example Résumé, Introduction, etc. seront alignés à gauche. Laisser deux espaces en blanc entre les notes de pied de page avec les adresses et le Résumé, et entre le titre Résumé et le texte qui suit. Le résumé ne devra pas dépasser les 200 mots. Il s'agira d'un résumé objectif qui fasse une brève description des processus utilisés et des résultats obtenus, et non pas une simple présentation du travail réalisé avec une description générale des résultats. Laisser un espace en blanc entre la fin du texte du résumé et les mots-clés, qui seront écrits en italique ainsi que le titre Mots-clés. Les mots-clés seront au maximum six et il ne devra pas y avoir de "et" ou "&". Tous les titres principaux de chapitre (14 regular) et sous-chapitre (12 regular) seront en gras avec un espace en blanc avant et après. Le texte commencera sans retrait. Un titre à l'intérieur d'un sous-chapitre s'écrira en italique, suivi d'un point, avec le texte à continuation.

Tableaux et figures

Les tableaux et les figures iront à la fin du texte en suivant l'ordre d'apparition dans le texte. Les photographies ne seront pas dévolues aux auteurs.

Tableaux

Les tableaux, y compris les notes de pied de page, devront avoir un espace en blanc avant et après. Le numéro du tableau et le titre s'écriront sur la partie supérieure en italique (12) avec un point à la fin et un espace en blanc en dessous. Sur chaque colonne, titre d'en-tête ou sous-titre, seulement la première lettre du premier mot sera en majuscule. Les tableaux et leur titre seront alignés à gauche, ainsi que le texte. Les lignes verticales et

horizontales seront utilisées seulement si nécessaires. Ne pas utiliser les tabs ou la barre de séparation pour créer un tableau.

Figures

Les figures, y compris les titres et les légendes, seront précédés et suivis de deux espaces en blanc. Le numéro de la figure et le titre s'écriront sur la partie supérieure en italique (12) avec un point à la fin. Sous la rubrique figure on trouvera les photographies, les graphiques, les cartes, les diagrammes, etc. Dans le cas des diagrammes, la matrice originale avec les données utilisées pour son élaboration devra être envoyée. On recommande l'utilisation de Word 6.0 ou Excel 5.0 pour la présentation des diagrammes.

Références

Toute référence présente dans le texte devra apparaître sur la liste des références, et chaque référence de la liste aura été citée au moins une fois dans le texte. Les références iront en ordre alphabétique du nom de l'auteur, suivi de l'année. Example dans le cas d'une référence sur une revue:

Köhler-Rollefson, I.,1992; The camel breeds of India in social and historical perspective. Animal Genetic Resources Information 10, 53-64.

Lorsqu'il s'agit de plus d'un auteur:

Matos, C.A.P., D.L. Thomas, D. Gianola, R.J. Tempelman & L.D. Young, 1997; Genetic analysis of discrete reproductive traits in sheep using linear and nonnlinear models: 1. Estimation of genetic parameters 75, 76-87.

Dans le cas d'un livre ou d'une publication ad hoc, par example un rapport, une thèse, etc.:

Cockril, W.R., (Ed), 1994; The Husbandry and Health of the Domestic Buffalo. FAO, Rome, Italy, pp 993.

S'il s'agit d'un acte d'une réunion:

Hammond, K., 1996; FAO's programme for the management of farm animal genetic resources. In C. Devendra (Ed.) Proceedings of IGA/FAO Round Table on the Global Management of Small Ruminant Genetic Resources, Beijing, May 1996, FAO, Bangkok, Thailand, 4-13.

Lorsque l'information contenue dans l'article ait été obtenue ou dérive d'un site World Wide Web, il faudra mettre le texte entre guillemets; par example "tiré de la FAO. 1996" et indiquer dans les Références la forme standard URL:

FAO, 1996; Domestic Animal Diversity Information System <http://www.fao.org/dad-is/>, FAO, Rome

Pour tout envoi de manuscripts ou correspondence au sujet d'AGRI, vous êtes prié d'utiliser l'adresse suivante:

agri-bulletin@fao.org

Merci pour votre collaboration

Reglas y normas editoriales

El objetivo del Boletín de Información sobre Recursos Genéticos Animales (AGRI) es la divulgación de la información sobre una mejor gestión de los recursos genéticos animales de interés para la producción alimentaria y agrícola, siguiendo la Estrategia Mundial para la Gestión de los Recursos Genéticos de los Animales Domésticos. Todos los aspectos referidos a la caracterización, la conservación y el uso de estos recursos serán tomados en consideración, de acuerdo con la Convención sobre la Biodiversidad.

AGRI publicará información sobre genética, encuestas fenotípicas y económicas y descripciones comparativas, uso, desarrollo y conservación de los recursos genéticos animales, así como sobre el desarrollo de estrategias operacionales y normas que permitan una gestión más eficaz de la relación costo/eficacia. Por ello, AGRI prestará especial atención a las contribuciones referidas a razas y normas capaces de contribuir a la intensificación sostenible de los medios (agroecosistemas) con ingresos medio y bajos en el mundo, que comprenden casi la mayor parte de las tierras dedicadas a la producción ganadera; la producción total de alimentos y agricultura provenientes de la ganadería; y el resto de los recursos genéticos de animales domésticos.

Los puntos de vista expresados en los artículos publicados en AGRI son solamente las opiniones de los autores y, por tanto, no reflejan necesariamente la opinión de las instituciones para las cuales trabajan dichos autores, de la FAO o de los editores.

La oportunidad o no de publicar un artículo en AGRI será juzgada por los editores y revisores.

Publicación electrónica

Además de su publicación impresa, la versión íntegra de AGRI se encuentra disponible electrónicamente sobre Internet, en el sito: <<http://www.fao.org/dad-is/>>

Tipos de artículos

Serán publicados en AGRI los siguientes tipos de artículos:

Artículos sobre investigación

Se tomarán en consideración para su publicación en AGRI los estudios sobre la caracterización, conservación y uso de los recursos genéticos de los animales domésticos (AnGR) con una buena descripción del entorno. Se agradecerá el envío de fotografías de calidad que presenten a las razas en cuestión en su ambiente natural de producción.

Artículos de revisión

Se podrán tener en consideración ocasionalmente aquellos artículos que presenten una revisión de los agroecosistemas, a nivel nacional, regional o mundial, con el desarrollo de uno o más aspectos referidos a la gestión de los recursos genéticos animales, incluidas las revisiones sobre el estado actual de las distintas áreas de AnGR.

Artículos específicos

Se solicitarán puntualmente artículos sobre temas específicos para ediciones especiales.

Otro material para publicación

Incluye la revisión de libros, noticias y notas referidas a reuniones importantes, cursos de formación y principales eventos nacionales, regionales e internacionales, así como conclusiones y recomendaciones relacionadas con los objetivos de estos principales eventos. Se invita a los lectores a enviar este tipo de material a los editores.

Guía para los autores

Presentación del manuscrito

Los artículos se presentarán en inglés, francés o español, junto con un resumen en inglés y su traducción en francés o español, y se enviarán al editor de AGRI, AGAP, FAO, Viale delle Terme di Caracalla, 00100 Roma, Italia. Otra posibilidad es enviar el artículo por correo electrónico adjuntando el documento en versión WinWord a <agri@fao.org>. Las fotografías, a color o en blanco y negro, se enviarán siempre por correo normal.

Los manuscritos se presentarán con doble espacio y con el número correspondiente a cada línea en el margen izquierdo. Todas las páginas serán numeradas, incluidas las de las referencias bibliográficas, cuadros, etc. El autor recibirá una notificación sobre la recepción de su documento.

En el caso de aceptación de un artículo después de su revisión, se solicitará al autor una versión final de su artículo revisado en disquete (formato 3$^{1}/_{2}$") en Word 6.0 x Windows, así como una copia impresa del mismo.

Preparación del manuscrito

En la primera página del manuscrito se indicará el título abreviado del artículo, títulos y nombres de los autores, instituciones, direcciones completas (incluido código postal y número de teléfono); así como otros medios de contacto tales como fax, e-mail, etc., del autor principal. El título abreviado no deberá sobrepasar los 45 caracteres más los espacios correspondientes, y aparecerá en la parte superior de la página 1 del manuscrito en mayúsculas. El título entero del manuscrito viene escrito en mayúsculas y minúsculas. Dicho título debe ser lo más breve posible y no sobrepasar los 150 caracteres (incluidos los espacios necesarios), con los nombres de las especies, si necesario. Los nombres de los autores, instituciones y direcciones se escribirán en cursiva y en letras mayúsculas y minúsculas. Se dejará una línea en blanco entre el título y los nombres de los autores. Las direcciones se escribirán como notas de pie de página de cada autor después de dejar una línea en blanco entre los nombres y éstas. Cada nota de pie de página con la dirección vendrá indicada numéricamente. Se dejarán dos líneas en blanco después de las direcciones.

Títulos

Los títulos de cada sección, por ejemplo Resumen, Introducción, etc., vienen alineados a la izquierda. Dejar dos líneas en blanco entre las notas de pie de página con las direcciones y el Resumen y entre el título Resumen y el texto que sigue. El resumen no deberá exceder de 200 palabras. Deberá ser un resumen objetivo que describa brevemente los procesos y logros obtenidos, y no una presentación de cómo se ha llevado a cabo el estudio y una descripción genérica de los resultados. Dejar una línea en blanco entre el final del texto del resumen y las palabras clave, que se escribirán en cursiva así como el titulo Palabras clave. No deberán ser más de seis y no deberán contener "y" o "&". Todos los títulos principales de capítulo (14 regular) y subcapítulo (12 regular) serán en negrita e irán precedidos y seguidos de una línea en blanco. El texto correspondiente empezará sin sangrado. Un título dentro de un subcapítulo se escribirá en cursiva e ira seguido de un punto con a continuación el texto correspondiente.

Cuadros y figuras

Los cuadros y las figuras se incluirán al final del texto siguiendo el orden de cita dentro del mismo. Las fotografías no serán devueltas a sus autores.

Cuadros

Los cuadros, incluidas las notas de pie de página, deberán ir precedidos y seguidos por dos líneas en blanco. El numero del cuadro y su título se escribirán en la parte superior en cursiva (12) con un punto al final y seguido

de una línea en blanco. En cada columna o título de encabezamiento o subtítulo, sólo la primera letra de la primera palabra irá en mayúscula. Los cuadros irán numerados de forma consecutiva con números árabes. Los cuadros y sus títulos se alinearán a la izquierda, así como el texto. Se utilizarán líneas horizontales o verticales sólo cuando sea necesario. No utilizar tabuladores o la barra espaciadora para crear un cuadro.

Figuras

Las figuras, incluidos los títulos y leyendas, irán precedidas y seguidas de dos líneas en blanco. El número de la figura y el título se escribirán en la parte superior en cursiva (12) con un punto al final. La palabra figura incluye las fotografías, los gráficos, los mapas, los diagramas, etc. En el caso del diagrama se enviará la matriz original con los datos utilizados para crearlo. Se recomienda encarecidamente la utilización de Word 6.0 o Excel 5.0 para la presentación de los diagramas.

Referencias

Toda referencia presente en el texto deberá aparecer en la lista de referencias y, de la misma manera, cada referencia de la lista deberá haber sido citada por lo menos una vez en el texto. Las referencias deben ir en orden alfabético del apellido del autor, seguido por el año.

Ejemplo en el caso de una referencia de una revista:

Köhler-Rollefson, I.,1992; The camel breeds of India in social and historical perspective. Animal Genetic Resources Information 10, 53-64.

Cuando se trata de más de un autor:

Matos, C.A.P., D.L. Thomas, D. Gianola, R.J. Tempelman & L.D. Young, 1997; Genetic analysis of discrete reproductive traits in sheep using linear and nonnlinear models: 1. Estimation of genetic parameters 75, 76-87.

En el caso de un libro o de una publicación ad hoc, por ejemplo informes, tesis, etc.:

Cockril, W.R., (Ed), 1994; The Husbandry and Health of the Domestic Buffalo. FAO, Rome, Italy, pp 993.

Cuando se trate de un artículo dentro de las actas de una reunión:

Hammond, K., 1996; FAO's programme for the management of farm animal genetic resources. In C. Devendra (Ed.) Proceedings of IGA/FAO Round Table on the Global Management of Small Ruminant Genetic Resources, Beijing, May 1996, FAO, Bangkok, Thailand, 4-13.

Cuando la información contenida en el artículo haya sido obtenida o derive de un sito World Wide Web, poner el texto entre comillas; por ejemplo "sacado de la FAO. 1996" e indicar en las Referencias la forma estándar URL:

FAO, 1996; Domestic Animal Diversity Information System <http://www.fao.org/dad-is/>, FAO, Rome

Se ruega enviar los manuscritos o la correspondencia relativa a AGRI a la dirección siguiente:

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Gracias por su colaboración