

TABLE DES MATIÈRES / CONTENTS

Editorial	1
Nouvelles de l'association	2
News of the association	3
Actualités / News Update	
Séminaire (Libreville)	6-7
Registres / Stage	8
Directories / Training Session	9
Cricétomes / Escargots	10
Cricetomas / Snails – Usage des escargots	11
Prix de la Coopération au Développement	12
Prize of Development Cooperation	13
Ecology of bush-fowl, by Ekue	14
Noticias	
El pecari de collar, by Jori	16
Congreso Paraguay (1999)	17
Survey of the literature:	
Edible and useful rodents	19
Guinea pigs	24
Wild pigs	25
Birds	26
Edible tropical snails	27
Frogs	30
Insects	34
Minilivestock	35
Administrative information	cover page 3

EDITORIAL

Pas beaucoup de nouveautés cette fois-ci.

Une proposition a été soumise à la Commission Européenne afin de financer les activités de réseau de BEDIM pour quelques prochaines années. Le dossier a été réceptionné et est à l'étude.

Plusieurs lettres parmi celles parvenues au Secrétariat constituent en réalité l'amorce de vrais dialogues. Des détails sont donnés plus loin.

Deux nouvelles rubriques ont été ouvertes dans la revue de la littérature. Des précisions sont fournies plus loin aussi.

*

* *

Not many news this time.

A proposal has been submitted to the European Commission to finance the activities of the BEDIM network for some next years. The proposal has been acknowledged and will be examined.

Some letters out of those entered at our Secretariat do represent the start of true dialogues. Details are provided in further pages.

Two new headings have been opened in the Literature Review. Here also explanations are given in this Bulletin.

*

* *

Pocas novedades esta vez.

Una proposición ha sido depositada a la Comisión Europea para financiar las actividades de la red BEDIM durante los próximos años. El informe ha sido recibido y esta en estudio.

Varias cartas recibidas a la Secretaria de BEDIM constituyen el inicio de un verdadero dialogo con los socios. Descubriréis los detalles mas adelante.

En cuanto a los *Abstracts* o revisiones bibliográficas que lleva a cabo BEDIM, se han abierto dos nuevas secciones. Encontrareis la información necesaria a continuación.

NOUVELLES DE L'ASSOCIATION

Le CONSEIL D'ADMINISTRATION s'est réuni le 2 mai 2001, surtout pour faire le point sur les comptes et les réalisations de 2000, puisqu'il n'y a pas d'Assemblée Générale en 2001. Aucun progrès réel n'a été constaté dans le projet de collaboration puis de transmission des activités de BEDIM à l'une ou l'autre organisation. Dans ce contexte, le Secrétariat a décidé de préparer et soumettre une proposition de financement à la Commission Européenne, Direction Générale de la Recherche (précédemment D.G.XII) dans le cadre du Programme INCO-DEV, sous la rubrique « Mesures d'accompagnement ». Notre association fournit en effet un appui technique par son réseau encourageant le développement du mini-élevage. Le très lourd travail de conception et de rédaction pour les formulaires prévus a été effectué par Ir Olivier Machiels, qui en est remercié publiquement ici. Le Conseil a aussi approuvé les comptes et examiné diverses questions liées surtout à l'avenir.

*
* *

Le CONSEIL D'ADMINISTRATION a officialisé les activités que deux de ses membres réalisaient déjà depuis assez longtemps en précisant que Mme A. ROUBINKOVA est chargée de la documentation et que M. A. GUISSART est chargé des aspects de préservation de la biodiversité.

*
* *

Le CONTRAT avec la F.A.O. a été renouvelé pour poursuivre la rédaction et la distribution de notre Bulletin Semestriel. Ceci donne l'occasion de rappeler aux bibliothèques (Universités, Instituts de Recherche, Centres de documentation, ...) que le Bulletin peut leur être envoyé gratuitement, sur simple demande écrite, si ce service ne leur est pas encore assuré. Il est souhaitable que ce message soit transmis aux responsables par les utilisateurs potentiels du Bulletin.

*
* *

Le SITE WEB BEDIM est accessible dans sa version mise à jour et améliorée, en français et en anglais : <http://www.bedim.fsaqx.ac.be>

*
* *

Des GUIDES TECHNIQUES D'ÉLEVAGE ont été annoncés dans le Bulletin précédent. Quatre sont déjà disponibles (n°3 Grenouilles ; n°4 Cobayes ; n°5 Athérures ; n°7 Asticots), à raison d'un par personne. Il y a des retards pour les autres, mais les n°1 (Aulacodes) et n°2 (Escargots) sont pratiquement prêts. Un guide supplémentaire (n°8 Cricétomes) sera prochainement disponible également.

NEWS OF THE ASSOCIATION

The BOARD OF TRUSTEES met on 2 May 2001, mainly to assess the situation for year 2000 as there is no General Assembly in 2001. No real progress has been made towards handing over BEDIM activities to some other organization. In this context, action has been taken by the Secretariat who submitted a proposal to the European Commission, Directorate General for Research (formerly D.G.XII) in the INCO-DEV Programme, under the heading of « Accompanying Measures » to research. Our association indeed provides some technical assistance through its network promoting the development of minilivestock. The very heavy redactional work involved has been done by Ir Olivier Machiels who is hereby thanked for that. The Board approved also the accountancy of the association and discussed various topics connected with the future.

*
* *

The BOARD OF TRUSTEES made official the activities already implemented for a long time by two of its members and stated that Mrs A. ROUBINKOVA is in charge of the documentation and Mr A. GUISSART is in charge of the biodiversity preservation aspects.

*
* *

The contract with F.A.O. has been renewed to carry on the production and distribution of our semestrial Bulletin. This is an opportunity to remind libraries (Universities, Research Institutes, Documentation Centres, ...) that the Bulletin can be sent to them, free of charge, upon written request, if they are not supplied yet.

*
* *

The BEDIM WEB SITE is now available in English and in French:
<http://www.bedim.fsagx.ac.be>

*
* *

TECHNICAL GUIDES FOR BREEDING were announced in the previous Bulletin. Four of them (n°3 Frogs; n°4 Guinea pigs; n°5 Brush-tailed porcupines; n°7 Maggots) are already available, one by person. Some delay is encountered for the others, but n°1 Grasscutters and n°2 Snails are nearby ready. A supplementary one (n°8 Cricetomas) will become available very soon. The Bulletin readers are hereby informed that they can obtain by e-mail the texts of the Technical Guides for Breeding by simple request to roubinkova@fsagx.ac.be

BEDIM has no objection for local reproduction of these Technical Guides, as our association is not using copyrights.

Les lecteurs du Bulletin sont informés qu'ils peuvent obtenir par courrier électronique le texte des Guides Techniques d'Élevage par simple demande à <roubinkova@fsagx.ac.be>.

Aucun copyright n'existe pour ces Guides, qui peuvent donc être reproduits librement.

*
* *

Les **INFORMATIONS SUR LES DOCUMENTS PUBLIÉS LOCALEMENT** sont difficiles à trouver par le Secrétariat. Des livres, thèses, mémoires, travaux de fin d'études, voire rapports ou même des articles dans des revues locales sont cependant publiés. Certains de ces documents sont parfois d'un grand intérêt pour d'autres pays, alors qu'ils restent sur des étagères. Nos membres, abonnés ou lecteurs, sont aimablement priés de nous signaler de tels événements. Le Secrétariat a des chances en effet d'obtenir ces textes si les références complètes sont connues (auteur, titre, organisation, date et lieu de publication, ...). La même réaction est souhaitée pour tout congrès, séminaire, réunion, ... où le mini-élevage a été ou sera évoqué. Merci d'avance à tous.

*
* *

NOUVEAUX GROUPES D'ANIMAUX

Le mini-élevage est, par définition, en évolution permanente. Il est donc normal que de nouvelles espèces animales fassent l'objet d'études et de publications. BEDIM essaie toujours de rester très près de l'actualité. C'est pour cela que deux nouveaux groupes ont été introduits dans la revue de la littérature.

Les Suidés sauvages sont encore peu étudiés, alors que plusieurs espèces et genres possèdent manifestement un réel potentiel. En Europe, l'élevage contrôlé du vrai sanglier *Sus scrofa* est bien maîtrisé. Ce n'est apparemment pas le cas encore en Afrique, même pour le très commun phacochère *Phacochoerus aethiopicus*. Une intéressante communication au séminaire de Libreville était consacrée au potamochère *Potamochoerus porcus*; elle est analysée dans ce numéro. Espérons que d'autres études seront entreprises sur l'hylochère *Hylochoerus* spp. ainsi que sur les pécaris *Tayassu* spp.

Le deuxième groupe est consacré aux Oiseaux, en dehors de la volaille de basse-cour, des pigeons, des cailles, des autruches, ... dont l'élevage est bien maîtrisé. La production contrôlée de pintades au niveau villageois progresse mais peu d'articles sont publiés sur ce thème. Ici, c'est le francolin *Francolinus bicalcaratus* qui a été étudié. En plus du travail de fin d'études réalisé au Bénin, l'auteur a autorisé la publication dans ce numéro du résumé en anglais de ce travail.

*
* *

USAGE DES ESCARGOTS : voir bas de la page 11

INFORMATION ON DOCUMENTS ISSUED LOCALLY is very difficult to collect by the BEDIM Secretariat. However, books, theses, dissertations and even reports are produced. Some of them are of high interest for other countries but they remain too often on some dusty shelves. Our members, subscribers and readers are kindly asked to inform us would such a situation come to their knowledge. With complete reference (author, title, organization, date and place of issue, ...) we are usually able to obtain a complimentary copy, which will be then analyzed for the benefit of all. The same action is expected for any meeting, seminar or congress where minilivestock has been or will be discussed. Many thanks in advance to all of you.

*
* *

NEW ANIMALS GROUPS

Minilivestock is by nature in permanent move. Consequently it is normal that supplementary animal species are studied and related publications issued. BEDIM tries always to remain close to the events. This is the reason why two new groups have been opened in the literature review.

Wild pigs are still little studied though several species and genera show evidently some true potential. In Europe controlled breeding of the wild boar *Sus scrofa* is well documented and practiced. It is apparently not the case yet in Africa, even for the very common Warthog *Phacochoerus aethiopicus*. An interesting communication at the Libreville seminar was devoted to the bush-pig *Potamochoerus porcus*; it is analyzed in this issue. We expect that other publications will come on *Hylochoerus* spp. and on peccaris *Tayassu* spp.

The second group deals with Birds other than poultry, pigeons, quails, ostriches, ... for which breeding is well known. Guinea fowl production in villages is improving, but related articles are still rather scarce. Here, the bush-fowl *Francolinus bicalcaratus* has been studied. On top of his end of studies memory in Bénin, the author cleared the publication in this issue of the summary of the work.

*
* *

Interest for **MAGGOTS USE** remains, and it seems even move on. Time is ripe now to undertaken tests and trials on the use of these maggots by other animals (poultry, rodents, frogs, ...). It is rather simple launching trials with very limited investments and this should suffice to prepare related protocols based on what is already known.

ACTUALITÉS

Un SÉMINAIRE international sur l'élevage intensif de gibier à but alimentaire en Afrique s'est tenu à Libreville-Gabon les 23 et 24 mai 2000. Le Bulletin 9/1 l'avait déjà signalé (page 8). Les actes de ce séminaire viennent de paraître ; plusieurs articles sont analysés dans ce bulletin, et d'autres le seront dans les numéros suivants. On trouvera ici une analyse générale de cette intéressante réunion. Le document lui-même (204 pages) est disponible sur demande à D.G.E.G., BP 9129 à Libreville (vsfgab2@internet.gabon.com).

Le projet « Développement au Gabon de l'Élevage de Gibier » D.G.E.G., financé par la Commission Européenne et géré par l'ONG française Vétérinaires Sans Frontières, avait très bien organisé cette manifestation où 120 invités, orateurs et participants figuraient au programme.

En plus des allocutions officielles d'ouverture (2) et de clôture (3), le séminaire était structuré en séances plénières et en ateliers. Des débats animés ont suivi toutes les interventions, ce qui est la preuve de l'intérêt. Après 2 exposés en guise d'introduction, 10 orateurs ont abordé les aspects techniques et ont parlé de la diffusion. Trois autres ont évoqué l'élevage de gibier en liaison avec l'environnement et un autre celui d'une antilope.

La couverture géographique des textes était assurée par 5 exposés généraux, 6 sur le Gabon, 6 sur le Bénin, 2 sur le Cameroun, 1 sur le Burkina Faso et 1 sur le Ghana. Un texte concernait à la fois le Bénin et la Côte d'Ivoire.

Toutefois, on a eu parfois l'impression que l'on assistait à un séminaire sur l'Aulacode, ce qui n'était pas l'objectif des organisateurs. En effet, 10 textes sur les 17 concernaient l'aulacode, deux les escargots géants, et un seul, pour chacune des espèces suivantes : cricétome, athérure, potamochère et francolin. Les trois dernières espèces représentent de réelles nouveautés en mini-élevage, et le séminaire D.G.E.G. de Libreville fera date à ce propos.

Les organisateurs ont confié au représentant de BEDIM que des spécialistes d'autres espèces de gibier avaient été pressentis mais qu'ils n'ont pas donné suite aux propositions, pour l'une ou l'autre raison. Le titre du séminaire permettait en effet d'espérer qu'on aurait entendu parler du cobaye de boucherie, des grenouilles, des serpents, des vers de palmier, des chenilles, ... puisque toutes ces catégories animales sont exploitées à des fins alimentaires en Afrique. Cela laisse le champ libre pour d'autres organismes qui envisageraient l'organisation de séminaires similaires. Le Secrétariat de BEDIM est à leur disposition.

On notera les points principaux suivants concernant les recommandations formulées par les participants lors de la séance plénière de clôture :

- 1) reconnaître officiellement l'élevage des espèces non conventionnelles [y compris le gibier n.d.l.r] comme production animale à part entière ;
- 2) rattraper le retard dans le développement de ces espèces non conventionnelles ;
- 3) développer la communication au sein de la Communauté internationale des producteurs et des chercheurs ;

NEWS UP-DATE

An International SEMINAR on intensive breeding of wildlife for food in Africa has been held at Libreville-Gabon on 23 and 24 May 2000. The Bulletin 9/1 already provided the announcement of this event (page 9). Related Proceedings just came out; many articles are analyzed in this Bulletin, and others will be in the next issues. The document (204 pages) is available on request at D.G.E.G., B.P. 9129 Libreville Gabon (vsfgab2@internet.gabon.com).

The project "Development in Gabon of Wildlife Breeding" D.G.E.G., funded by the European Commission and run by the French NGO Vétérinaires Sans Frontières VSF, organized very well the meeting where 120 guests, lecturers and participants were enlisted.

Besides the official opening (2) and closure (3) speeches, the seminar was organized in plenary sessions and workshops. Active discussions took place after each lecture, showing the general interest of the audience. After 2 introductory lectures, 10 specialists spoke on technical aspects and 7 on extension. Three others examined wildlife breeding in the framework of the environment, and one described the case of an antelope.

The geographical coverage was obtained by 5 general lectures, 6 on Gabon, 6 on Benin, 2 on Cameroon, 1 on Burkina Faso and 1 on Ghana. One text concerned both Benin and Ivory Coast.

One got sometimes the impression attending a grasscutter seminar, which was however not the objective of the organizing committee. Indeed 10 texts amongst 17 dealt with grasscutter, 2 with giant snail, and 1 only with each of the following species: cricetoma, brush-tailed porcupine, bush-pig and brush-fowl. The three last species represented a real breakthrough in minilivestock, and the D.G.E.G. seminar of Libreville will mark a date in the matter.

Some of the organizers told the BEDIM representative that specialists in other species of wildlife or minilivestock had been contacted and were foreseen for invitations, but answers were never received. The seminar title gave indeed the impression that lectures would have been given on breeding of guinea pigs, frogs, snakes, palm grubs, caterpillars, ... as all these animal species are used as food in Africa. This leaves an open field to other organisms which would be prepared to set up similar seminars. The BEDIM Secretariat is prepared to assist in the matter if need be.

Main points mentioned in the recommendations formulated by the participants during the closing seminar are:

- 1) official recognition of the un-conventional species breeding [inclusive of the wildlife species] as a full sector of animal production;
- 2) recovery of the delay in the development of these un-conventional species breeding;
- 3) development of communications within the international community of producers and researchers;
- 4) support to the establishment of producers organizations;

- 4) encourager la création d'organisations professionnelles de producteurs ;
- 5) reconnaître aux éleveurs de gibier un rôle dans la conservation de la biodiversité ;
- 6) confirmer le droit des pays producteurs à conserver leurs cultures et leurs habitudes alimentaires.

On notera que le B.E.D.I.M. a été mentionné comme un des dispositifs susceptibles de coordonner les actions des chercheurs et des producteurs.

REGISTRES

Après l'annonce faite dans le Bulletin précédent, quelques réactions positives ont déjà été enregistrées concernant la création de registres par espèce animale. On trouvera dorénavant les indications qui permettent de connaître les noms et adresses des personnes intéressées, espèce par espèce. D'autres registres seront ouverts dès que des propositions (noms et adresses par espèce) parviendront au Secrétariat.

Registre des Cricétomes

MALEKANI Jean,
Projet Cricétomes, Dép. Biol., Fac. Sciences, UNIKIN ; B.P. 218
Kinshasa XI, Rép. Dém. CONGO

Registre des Escargots géants

CASALI Paolo
Rue des Remparts
F-34380 Notre Dame de Londres, FRANCE

*
* *

STAGE GROUPE INTERNATIONAL – (Du 17/09/2001 au 17/12/2001)

« Formation de partenaires à la gestion du cycle de projets de génie sanitaire et de gestion des déchets en milieu urbain »

organisé par Aide au Développement Gembloux asbl (ADG)
cofinancé par la Direction Générale de la Coopération Internationale (DGCI)

Ces stage s'adresse à des acteurs du développement local (Afrique, Asie, Amérique latine), membres d'ONG, du secteur associatif ou privé.

Profil des participants : les participants auront un niveau d'étude équivalent à 3 années d'enseignement supérieur (Baccalauréat + 3) avec un minimum de 3 années d'activités professionnelles ou le niveau baccalauréat avec un minimum de 6 années d'activités professionnelles.

Le stage sera donné en français.

- 5) recognition of the role the wildlife species breeders have in biodiversity conservation;
- 6) confirmation of the right the producing countries have to keep their cultures and food uses.

It has to be noted that BEDIM has been specially mentioned as one of the possible means to coordinate actions of the producers and the researchers.

DIRECTORIES

Following the information issued in the previous Bulletin, some positive reactions have already been received concerning the directories to be open by animal species. The readers will find regularly the details regarding interested people. Other directories will be open in due time according to suggestions received at Secretariat (names and addresses, species by species).

Directory for Cricetoma

**MALEKANI Jean,
Projet Cricétomes, Dép. Biol., Fac. Sciences, UNIKIN ; B.P. 218
Kinshasa XI, Rép. Dém. CONGO**

Directory for Giant Snails

**CASALI Paolo
Rue des Remparts
F-34380 Notre Dame de Londres, FRANCE**

*
* *

TRAINING SESSION

An international group training session will be organized by the NGO "Aide au Développement Gembloux asbl" from 17 September 2001 to 17 December 2001 at Gembloux, Belgium.

As this session will be run in French only, interested candidates can find the information at the opposite page.

*
* *

Chaque participant aura, préalablement au stage, identifié un avant-projet qu'il désire examiner pendant le stage en vue d'une éventuelle réalisation ultérieure.

Un formulaire d'inscription peut être obtenu auprès d'ADG. Ce formulaire doit être renvoyé à Gembloux avant le 30 mai 2001.

Renseignements et inscriptions :

Passage des Déportés, 2
B-5030 Gembloux (Belgique)
Tél. : 00 32 (0)81 62 25 75
Fax : 0032 (0)81 60 00 22
E-mail : ADG@FSAGX.AC.BE

*
* *

CRICETOMYS SP.

Dans une lettre que nous adresse Mr J.M. Malekani (UNIKIN, R.D. Congo), ce spécialiste bien connu rappelle notamment que les noms admis actuellement et recommandés pour les publications relatives à ce rongeur sont : cricétome en français, cricetoma en anglais, cricétomo en espagnol et cricetomie en néerlandais.

*
* *

ESCARGOTS

Le Bulletin 9/2 en page 8 citait un article de A. Gomot de Vaufleury et F. Pihan qui décrivaient l'emploi d'escargots comme sentinelles de pollution dans l'environnement. On annonçait aussi que cet article était analysé dans la revue de littérature du même numéro. Le Secrétariat s'excuse auprès de ses lecteurs de l'omission, car cette analyse a été oubliée lors de la préparation du Bulletin 9/2. L'erreur est réparée dans ce Bulletin vol. 10 n°1.

Dans le même contexte, M. P. CASALI (France) (pcasali@citoyen.com) a informé le Secrétariat que le Dr Alan BEEBY est expert en matière de suivi continu de pollutions et qu'il utilise depuis 1983 des escargots comme bioindicateurs. Il est possible d'entrer en contact avec lui par internet : http://www.sbu.ac.uk/research_people/people/beebym.html Merci Monsieur Casali pour votre collaboration.

*
* *

CRICETOMYS SP.

Mr Jean Malekani (UNIKIN, R.D. Congo), well known cricetoma specialist, drew our attention on the vernacular names presently accepted and used in publications dealing with this rodent: cricétome in French, cricetoma in English, cricétomo in Spanish and cricetomie in Dutch.

*
* *

SNAILS

Bulletin 9/2 in page 9 mentioned a paper written by A. Gomot de Vaufleury & F. Pihan who described the use of snails as bio-indicators of environmental pollution. It was suggested at the same time to refer to the Review of Literature in same issue for our analysis of the paper. The Secretariat apologizes for the omission, as that analysis had been forgotten during the typing process. The readers will find it in the present Bulletin vol. 10 n°1.

In the same context, Mr P. Casali (France) (pcasali@citoyen.com) informed the Secretariat that Dr Alan Beeby is an expert in pollution monitoring, using snails as bioindicators since 1983. He can be contact through <http://www.sbu.ac.uk:research-people/people/beeby.html>

Thank you Mr Casali for your collaboration.

*
* *

Nouvelles de l'association (suite de la page 4)

L'intérêt pour l'USAGE DES ASTICOTS se maintenant, et il semble même progresser. Il est temps actuellement que l'on entreprenne des recherches simples sur l'usage des asticots dans l'élevage d'autres animaux (volaille, rongeurs, grenouilles, ...). La mise en route d'essais est assez simple, et de plus les investissements nécessaires sont très limités. Ces deux arguments devraient convaincre les scientifiques de préparer des protocoles sur l'utilisation des asticots, en appliquant ce que l'on connaît maintenant sur leur production.

REMISE DU PRIX (BELGE) DE LA COOPÉRATION AU DÉVELOPPEMENT

Africa Museum, Tervuren, Belgique, 23 avril 2001.

Le Musée Royal de l'Afrique Central organise depuis trois ans (au nom de la coopération belge au développement) un concours annuel pour récompenser de jeunes scientifiques originaires de pays en développement ou de Belgique qui ont effectué un travail original contribuant au développement des pays d'outre-mer. Ce prix d'encouragement incite les lauréats à continuer à s'intéresser à la coopération internationale.

La remise des prix de cette année a été rehaussée par la présence de Monsieur Eddy Boutmans, Secrétaire d'Etat à la Coopération Belge.

BEDIM, qui était représenté par le Dr Eric Thys, est heureux de faire savoir à ses membres que, parmi les lauréats, on compte un chercheur qui s'est intéressé au mini-élevage.

Il s'agit de Marcus Rodrigue Mensah Ekue, ingénieur agronome de la Faculté des Sciences Agronomiques de l'Université Nationale du Bénin, qui s'est distingué par le travail suivant :

« Etude de l'écologie du francolin commun (*Francolinus bicalcaratus* Linneaus 1766) et élaboration d'un référentiel pour son élevage en captivité étroite ».

Cette étude donne une vue précise sur l'habitat, les particularités de reproduction et la dynamique de population de cet animal, ainsi que sur l'importance socio-économique de la chasse au francolin, la variabilité morphologique de l'espèce, le suivi du comportement du francolin en captivité et de la valeur nutritive de sa viande.

Cet excellent travail, dont les mérites viennent donc d'être reconnus par la Coopération Belge, fait de son auteur un membre à part entière de la communauté des chercheurs en mini-élevage. Nous ne pouvons que nous en réjouir.

Attribution of the (Belgian) prize of development cooperation

Africa Museum, Tervuren, Belgium, 23 April 2001

The Royal Museum of Central Africa organizes since three years, on behalf of the Belgian Development Cooperation, an annual competition to reward young scientists from developing countries or Belgium who have produced an original work contributing to the development of overseas countries. This encouragement price is an incentive for the winners to continue their activities in the same field.

This year the attribution of the prize has been heightened by the presence of M. Eddy Boutmans, State Secretary (Deputy Minister) of the Belgian Cooperation. BEDIM was represented by Dr Eric Thys and is pleased letting know to its members that, amongst the winners, there is a scientist concerned by minilivestock. His name is Marcus Rodrigue Mensah EKUE, ingénieur agronome from the Faculty of Agricultural Sciences / National University of Benin, who produced a document entitled “Etude de l’écologie du francolin commun (*Francolinus bicalcaratus* Linnaeus, 1766) et élaboration d’un référentiel pour son élevage en captivité étroite / Ecological study of bush fowl (*Francolinus bicalcaratus* Linnaeus, 1766) and working out pattern for its breeding in strict captivity”.

This work offers a precise view of the habitat, the reproduction particularities, the population dynamics and the socio-economic importance of bush-fowl hunting as well as the morphological variability of the species, the monitoring of its behaviour in confinement and the nutritive value of its meat.

Due to this excellent study, which value has just be recognized by the Belgian Cooperation, its author becomes a full member of the minilivestock scientists’ Community. We are very proud for this.

ECOLOGY STUDY OF BUSH FOWL (*FRANCOLINUS BICALCARATUS* LINNAEUS, 1766) AND WORKING OUT PATTERN FOR ITS BREEDING IN STRICT CAPTIVITY

Marius Rodrigue Mensah EKUE
PEEANC/INRAB ; 05BP993 Cotonou, Bénin ekue1973@avu.org

submitted in partial fulfilment of requirement for degree of Ingénieur Agronome, DAGE (Option : Natural Resources Management) /FSA/UNB, Cotonou- Bénin.

Abstract

This study permitted to examine and analyze the habitat, reproduction characteristics and population dynamic, the socio-economic importance of francolin hunting, the external morphological variability of francolins, the behaviour follow-up of francolins raised in captivity and the nutritional value of francolin meat.

The work required a field phase that was carried out in sous prefectures of Ifangni and Sakété in the south of Plateau Department, a follow-up phase in captivity carried out in experimental field of Unité de Recherches Zootechniques et Vétérinaire (URZV) in Abomey-Calavi, and analysis in the Laboratoire de Production Animale and the Laboratoire des Sciences du Sol of the Faculté des Sciences Agronomiques (FSA).

Francolinus bicalcaratus biotope is a mosaic of fallows and cultures which provides to it suitable refuge. Vegetation re-covering rate varying between 50 and 90%, herbaceous and shrub stratum height between 1.50 and 2.70 meters, average litter recovering of soil about 21% and a mean temperature in soil around 30°C were favourable to francolins.

Francolins nested preferably in fallows. Eggs are laid in a shallow depression dug by the bird on dry soil. Nests were exposed at free air and contained dried leaves and pens. The highest clutch-size was 8 eggs. The average of the longest diameter length was 38.00 ± 0.18 mm.

Trapping with net was effective since 1981 living and unharmed francolins were captured in 95 days. Besides this capture method doesn't have any worst impact of the environment.

October was the most abounding game bird month with an average of 36.9 captured francolins per day.

Monthly and seasonally variations of sex-rate and age-rate have showed the coincidence of the captured period with the reproduction period. Sex-rate balanced only in August and for the whole small dry season. Age-rate was higher in October and for the whole small rainy season.

The study of external morphological variability revealed that the distinction between males and females of *Francolinus bicalcaratus* are noticed on the body and legs. At body-level, lengths of body, tail, elongated wing and

wingspan with males were higher than with females. The length and the diameter of tarsus, lengths of three fingers and those of their claws, the number of spurs, distances between the second spur and the heel, between spur and the soil with males were higher than with females. The differentiation was clear on the left leg.

Francolinus bicalcaratus adapted quickly on captivity and freely ate and drunk. The stay of francolins newly captured in a grasscutter-pen before transferring them on aviary revealed to be a system which permitted to reduce stress and instinct of panic in human presence manifesting by noisy and disorderly flights causing wounds and a big energy loss having bird's death.

Francolinus bicalcaratus had 68% of carcass yield, crude protein contain above 87% and a rich in essential minerals in the human diet. The consumption of this meat provided from natural milieu is very appreciated by the population.

Hunting revenue was very important (13 814 CFA/day).

Résumé

Etude de l'écologie du francolin commun *Francolinus bicalcaratus* Linnaeus 1766 et élaboration d'un référentiel pour son élevage en captivité étroite.

Ce travail de fin d'études de 123 pages fait le point sur les connaissances concernant le francolin commun dans la nature et relate en détail les succès et difficultés de ce premier essai d'élevage en captivité. L'adaptation en volière est facile. Les rendements sont de 68% en carcasse et de 60% en viande. La viande est très appréciée pour la consommation.

NOTICIAS – NOTICIAS – NOTICIAS – NOTICIAS – NOTICIAS – NOTICIAS

EL PECARI DE COLLAR (*Tayassu tajacu*) , UN BUEN CANDIDATO PARA LA MINICRIA EN LATINO AMERICA.

DR. Ferran JORI, CIRAD EMVT, Programa Pasturas Naturales y Fauna, TA 30/F, Montpellier 34398, Francia.

Hasta ahora la mayor parte de información existente sobre la minicría hacia referencia a invertebrados y vertebrados de pequeño tamaño. El animal mas pesado considerado como apto para la minicría es sin duda el capibara (*Hydrochaeris hydrochaeris*) que alcanza un peso medio de 50 Kg. de peso, algunos machos adultos pudiendo alcanzar hasta 80 Kg. No obstante, hasta la fecha se ha prestado muy poca atención a los suidos silvestres como especies animales aptas para la minicría. De hecho el tamaño de la mayor parte de los cerdos silvestres o asilvestrados es parecido o incluso inferior al del capibara. El pecari de collar (*Tayassu tajacu*), tiene un peso medio entre 17 y 35 kg., y el pecari labiado (*Tayassu pecari*), un peso entre 25y 45 Kg. No obstante, estas especies raramente se mencionan como animales aptos para el desarrollo de minicría.

El pécarí de collar es una de las especies de fauna silvestre mas populares en América Latina no solo por su carne, que figura entre las mas apreciadas, pero también por su piel, para la cual existe una gran demanda en el mercado internacional, y principalmente en la Europa comunitaria, EEUU y Japón. El Perú, es el único país Latinoamericano con permiso para exportar pieles de pécarí procedentes de una caza de subsistencia correctamente gestionada. Esta actividad genera un beneficio anual de 1.400.000 US\$ en divisas, con un valor total 3 veces superior en el mercado internacional (Bodmer y Pezo, 1999). A raíz de estos valores culturales y comerciales, el pécarí de collar se caza extensivamente en gran parte de su área de distribución, que va del sur de EEUU hasta el Norte de Argentina y en algunos casos, ha desaparecido de varias zonas de Latinoamérica por ser cazado en exceso.

El pécarí de collar, chanco de monte o cateto, se cría bien en cautividad y existe en numero considerable de experiencias exitosas en países como Brasil, Perú o Guyana Francesa, por citar algunos ejemplos. En comparación con el pécarí labiado (*Tayassu pecari*), el pecari de collar es mucho menos agresivo y mas fácil de manejar en cautividad, y además su piel presenta mayor valor que la de su pariente en el mercado internacional. En Brasil, como en otros países, existe una demanda importante de carne de pécarí en las grandes ciudades como Sao Paulo, Rio de Janeiro o Salvador, donde su carne se comercializa en restaurantes de carnes exóticas a precios cercanos a 7 US\$/Kg de peso vivo. En la Amazonia, su cría es sin duda una opción interesante para abastecer la demanda existente en grandes centros urbanos como Belem, Manaus o Iquitos que la caza, a menudo ilegal, no alcanza a satisfacer. Además, la cría del pécarí de collar en cautividad, permite a los productores obtener pieles de mejor calidad que aquellas procedentes de poblaciones silvestres, a menudo dañadas por las balas o las peleas entre congéneres. De este modo, un criador además de vender la carne, puede aprovisionar al sector del cuero con pieles mas grandes y de mejor calidad. Un cazador puede recibir entre 3 y 5 US\$ por cuero (Bodmer y Pezo, 1999; Barbarán, 1999).

La cría del pécarí de collar es por tanto una especie que puede constituir una fuente de ingresos y de proteína para las poblaciones locales en áreas periurbanas de Amazonia y otras regiones de Latinoamérica y por lo tanto debe considerarse como una especie apta para la minicría.

Referencias

Bodmer R; y Pezo, E. Análisis económico del uso de la fauna silvestre en la Amazonia Peruana. Actas del III Congreso Internacional sobre el manejo y conservación de la fauna silvestre en América Latina, Santa Cruz, Bolivia. pp 171-181.

Barbaran, F.R.. Comercialización de cueros de pécarí el Chaco semi-árido de la provincia de Salta (Argentina). Actas del III Congreso Internacional sobre el manejo y conservación de la fauna silvestre en América Latina, Santa Cruz, Bolivia. pp 195-206.

RESULTADOS DEL TALLER SOBRE PRODUCCIÓN DE ANIMALES SILVESTRES EN CAUTIVERIO (Extraído de la actas del IV Congreso de Manejo y Conservación de Fauna silvestre en Amazonia y América Latina, Paraguay, Octubre 1999)

Este taller tuvo lugar en Paraguay, durante la celebración del IV Congreso Internacional sobre el manejo de fauna silvestre en Latinoamérica.

El objetivo fue el de divulgar las técnicas más frecuentes para la producción de fauna en cautiverio con finalidad científica, comercial, de subsistencia o reintroducción de especies y discutir sobre sus problemas.

A partir de discusiones con los diferentes participantes se relataron las experiencias observadas en diferentes países latinoamericanos y se discutieron eventuales soluciones y recomendaciones para mejorar el éxito de la cría de diferentes especies silvestres. La mayor parte de las discusiones giraron alrededor de la cría de capibaras (*Hydrochaeris hydrochaeris*), pécaris (*Tayassu spp*) y pacas (*Agouti paca*).

Participantes:

Selene Nogueira, Coordinadora (Brasil)
Martín Álvarez (Argentina)
Gustavo Alfaro (Paraguay)
Karina Muñoz (Bolivia)
Milagros Lencina (Peru)
Ferran Jori (España)
Natalia I. Albrurquerque (Brasil)
María das Dores Palha (Brasil)
Hernán Povedano (Paraguay)

Recomendaciones y conclusiones

A partir de las discusiones, se establecieron las siguientes prioridades de acción:

- 1. La necesidad de crear grupos de discusión vía Internet así como la creación de grupos de especialistas Latinoamericanos sobre la cría de animales silvestres en cautiverio.**
- 2. Realizar estudios locales sobre el análisis de costes y estudios de mercado para los productos y subproductos derivados de animales silvestres criados en cautiverio con el objetivo de analizar su viabilidad económica.**
- 3. Estimular la elaboración de estudios sobre el procesamiento de la carne, el cuero u otros subproductos, con el objetivo de agregar valores y aumentar la rentabilidad de los productores.**
Igualmente, se consideró necesaria la promoción del intercambio entre los diferentes países, es necesaria para viabilizar la comercialización de productos en función de la tradición de cada país.
- 4. Se sugirió la divulgación, a través de grupos de discusión, de puntos positivos y negativos de la legislación de cada país, con el objetivo de acelerar y facilitar localmente la cría y comercialización de animales silvestres.**
- 5. La investigación orientada hacia la viabilidad de utilización de materiales locales de bajo coste, aparece como una prioridad, sobretodo en áreas rurales cuyo objetivo es la producción de proteína subsistencia para el criador y su familia.**
- 6. El desarrollo de estudios de comportamiento para el establecimiento de técnicas de manejo y construcción de instalaciones apropiadas que favorezcan el bienestar de los animales.**
- 7. La divulgación de fuentes de financiamiento y créditos para la implantación de criaderos de animales silvestres a nivel de las asociaciones de productores rurales.**
- 8. Para aquellos programas de cría de animales con fines de reintroducción en ciertas zonas diezmadas por la caza, son necesarias metodologías para readaptar los animales a la vida libre, como por ejemplo la búsqueda de alimentos o el reflejo de reconocer y esquivar a sus depredadores naturales.**

SURVEY OF THE LITERATURE

EDIBLE AND USEFUL RODENTS

Jori F. – La cria de roedores tropicales (*Thryonomys swinderixanus* y *Atherurus africanus*) como fuente de alimento en Gabon, Africa Central [Breeding of tropical rodents (*Thryonomis scindericanus* & *Atherurus africanus*) as food source in Gabon, Central Africa]

Language : Spanish (with a 3 pages résumé in French; no Summary)

Source : thesis for a doctorate, Veterinary Faculty, Autonomous University of Barcelona, Catalogna, Spain; 2001, 150 pages.

Address : Programme ECONAT, CIRAD-EMVT, B.P. 5035, F-34032 Montpellier Cedex 1, France; e-mail: ferran.jori@cirad.fr

Abstract : It is difficult summarizing the document ,as it is composed of three scientific articles (two on the grass-cutter and one of the brush-tailed porcupine) followed by a discussion and conclusions. The general objective of the work aims at assessing the possibility for the two tropical rodents concerned to play a role in bush meat supply in Gabon. The first article was analysed in BEDIM Bulletin 1995, vol.4, n°2, p.20; the two others are under press in Veterinary Record 2001 (A survey of pathology on captive cane rats; Jori, Cooper & Casal) and in Journal of Zoology 2001 (Functional anatomy of the ovaries of wild brush-tailed porcupines from Gabon). It is foreseen to issue the Résumé in the next Bulletin.

Mensah G.A. – Présentation générale de l'élevage d'aulacodes, historique et état de la diffusion en Afrique [General Presentation of Grasscutter Breeding, History and Stage of Spreading in Africa].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 45-59.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com

2) Author: PPEEANC/INRAB, Ministère de l'Agriculture, 01 B.P. 2359, Cotonou, Bénin.

Abstract : The author describes with some details how grasscutter breeding started and developed in Bénin, Côte d'Ivoire, Gabon, Togo, Cameroun, Guinée Equatoriale, Congo, République Démocratique du Congo and Burkina Faso. He gives also technical data on infrastructures, feeding, handling, results, pathology and recommendations for the breeder's behaviour. He ends the paper with one of his well-known speciality: terms and terminology.

Ntsame Nguema M. & Edderai D. – La gestion de la reproduction en aulacodiculture [Reproduction management in grasscutter breeding].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 60-66.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: idem.

Abstract : The paper starts with the means and clear drawings to identify animals or genetic groups (lives), to check pregnancy and how to built up reproduction groups. The two mating systems (temporary or permanent) are described with respective advantages and disadvantages. A mixed model is also explained.

Yewadan L.T. – Schéma de sélection en élevage d’aulacodes [Selection Programme in Grasscutter Breeding].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l’Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 67-74.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: PPEAu; 08 B.P. 1132, Cotonou, Bénin.

Abstract : The paper is based on the experience gained at the grasscutter breeding project at Godomey-Lalair near Cotonou. Selection is based on domestication aptitude, stress, target, ... and the programme is described. Based on individual results, best males and females are identified and used for reproduction. Results and genetic progress are given. Mutations are expected to two targets: higher speed in the domestication process and new breeds creation.

Nguema M. & Edderai D. – Résultats zootechniques de la Station d’Aulacodiculture d’Owendo [Technical Results obtained at the Owendo Grasscutter Station].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l’Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 75-77.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: idem.

Abstract : More than 90% of the females are pregnant within 4 weeks, with an average of 5.5 youngs by birth. Weaning is practised at 40 days and liveweights are controlled at weaning 4 and 6.5 month for females and 8 months for males. These can then be sold (more than 3.5 kg). Data are provided in tables and graphs. Post weaning losses have increased from 5.2 to 9.4 and 20.1% from 1997 to 1999.

Méhoba R. – Techniques de diffusion en élevage d’aulacodes au Bénin. Contexte - Evolution des techniques. Résultats. Perspectives [Techniques used to disseminate Grasscutter Breeding in Bénin – Context and Evolution – Results – Perspectives].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 141-143.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: PPEAu; 08 B.P. 1132, Cotonou, Bénin.

Abstract : Steps and results are shortly given. In 2000 around 600 breeders keep 30 animals as an average.

Charbonnier A. & Edderai D. – Diffusion de l'aulacodiculture au Gabon. Stratégies et Résultats [Spreading of Grasscutter Breeding in Gabon – Strategies and Results].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 144-148.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: idem.

Abstract : The paper explains the situation encountered, the contacts with groups or individuals, the training at the project station in 3 steps, the relationships between project and breeders and the results achieved: 906 animals supplied in 5 years (1995-1999).

Yem Yem Z. – Présentation du projet de l'élevage d'aulacodes au Cameroun (P.E.A.C.) [Presentation of the Grasscutter Breeding Project (P.E.A.C.) in Cameroon].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 149-150.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: MINEPIA/PEAC, Yaoundé, Cameroun.

Abstract : The short paper describes the objectives of the project in Cameroon.

Durodjaye A.*, Mensah G.A. & Soule A.A. – L'association béninoise des Eleveurs d'Aulacodes (ABEA) : Organisation et Services [The Grasscutter Breeders Association of Bénin (ABEA) : Organization and Services].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 153-166.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author*: Lot 1442 Vedoico, Cotonou RBT01; B.P. 3075 Cotonou, Bénin.

Abstract : The ABEA was created when it became evident for the breeders that official extension services did not exist in the field. This NGO provides assistance for credit, technical advices and

training. It plays also an important role in the supply of live animals in foreign countries.

Dabogrogo M. – La ferme pilote d’aulacodiculture de Ouagadougou [The Grasscutter Pilot Farm at Ouagadougou].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l’Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 167-168.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: 06 B.P. 9419, Ouagadougou, Burkina Faso or s/c: ics@fasonet.bf

Abstract : This short note is a description by the author, private breeder, of his farm and how it is run; he works himself. A market survey in 1993 gave a demand in town for 1 ton/week of meat. Sale price is FCFA 2,500/kg for bled animals. It seems that 7 other farms have been created.

Nkili-Meyong B. – Le Comité des Eleveurs Gabonais d’Aulacodes [The Board of Grasscutter Breeders in Gabon].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l’Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 151-152.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: B.P. 18259 Libreville, Gabon.

Abstract : Grasscutter breeders were ± 20 two years ago and ± 50 today; 40% are in rural areas and the rest in peri-urban zones. Costs of production are high in Gabon, specially if compared to the sale price of FCAF 3,500/kg as fixed by the project station. The breeders association asks for better control on poaching and illegal sales of bush-meat, official extension and training, and also the introduction of minilivestock and wildlife breeding in development policy.

Ajayi S.S. – Domestication of the African giant rat *Cricetomys gambianus* Waterhouse : its potential for meat production.

Language : English

Source : Proceedings (Actes du Séminaire International sur l’Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 106-111.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: Forest Research Institute, FORIG, P.O. Box 63, Kumasi, Ghana – [jacobbinah@forig.org](mailto:jcobbinah@forig.org)

Abstract : After general considerations on giant rat as a source of meat, comments are made on cage designs (no drawings provided) and factors to be considered in caging small mammals and specially *C. gambinius* or cricetomas.

Three kinds of cages have been tested: feeding, rehabilitation and breeding cages. Experience gained in management and behaviour in captivity is shortly explained. The most important pathological problems seem to be overeating and tympany, urinary cystolithiasis, taeniasis (*Hymenolipis diminuta* & *H. nana*), capillariasis and some bacteria infections. Suggestions for future development of domestication close the article.

Salgado J.M.*, Galvão M.T.E.L., Storer M ; de L.P. & Canniatti-Brazaca S.G. – Utilização da carne de capivara na elaboração de salsicha e fiambre [Capybara meat utilization in sausage and cold cuts elaboration].

Language : Portuguese (with short summary in English)

Source : Boletim do Centro de Pesquisa e Processamento de Alimentos, Curitiba (Brazil), 1999, 17, 83-92.

Address* : Setor de Nutrição Humana e Alimentos da Escola Superior de Agricultura “Luiz de Queiroz” (ESALQ/USP), Campos de Piracicaba, SP.

Abstract : Sausage and cold cuts were produced with capybara meat. Such products were compared to similar ones made of beef and pork and evaluated through sensory and bromatological analyses. All characteristics analysed in the tested samples were considered acceptable and did not differ statistically from the control sausage. The replacement of pork for capybara meat in the elaboration of sausage and cold cuts did not modify the organoleptic properties of all products analysed, except for the attribute flavor in the cold cuts.

GUINEA PIGS

Darmon N., Abdoul E., Roucayrol A.M., Blaton M.A., Briend A., Desjeux J.F. & Heyman M. – Sensitization to Cow's Milk Proteins during Refeeding of Guinea Pigs Recovering from Polydeficient Malnutrition.

Language : English

Source : Pediatric Research, 1998, 44, 6, 931- .

Address : Institut National de la Santé et de la Recherche Médicale U290, Hôpital Saint-Lazare, 107 rue du Faubourg Saint-Denis, 75010 Paris, France.

Abstract : The paper gives the results of an experiment aiming at better understanding of intestinal dysfunction in connection with sensitization of guinea pigs to cow's milk, mainly cow's milk protein. It has been shown that sensitization to cow's milk proteins can develop in guinea pigs recovering from experimental malnutrition through refeeding.

Kouonmenioc J., Ngou Ngoupayou J.D. & Fotso Tagny J.M. – Consommation de quelques graminées tropicales par le cobaye (*Cavia porcellus*) : performances et détermination des surfaces nécessaires à l'entretien d'un cheptel [Consumption of some Tropical Forages by Guinea-Pigs (*Cavia porcellus*) : Performances and Determination of Required Areas to Maintain a Flock].

Language : French

Source : Tropicultura, 2000, 18, 2, 80-83.

Address : Institut de Recherches Zootechniques et Vétérinaires de Nkolbisson, B.P. 1457 Yaoundé – République du Cameroun.

Abstract : In order to develop the mini-livestock sector in the agricultural production systems, investigations have been carried out on five tropical grass forages in the Cameroon forest humid zone in order to show the impact of organic manure on the total biomass production for guinea-pigs feeding. Adequate forages area required to maintain a family size guinea-pigs flock was determined.

These various forage species compared in terms of growth showed positive response to guinea pigs manure. *Panicum maximum* with a 8 weeks regrowth which yielded 5146.7 kg DM/ha (on increase of 1500.8 kg) seemed to be the best forage in terms of production.

Positive response of these grasses to organic manure from guinea-pigs farming may direct the farmer not to use the manure not only for food and cash cropping, but also to sustain forage production.

For a 8 weeks cutting frequency, the adequate forage area to maintain a family flock size of 20 animals ranges from 90.8 m² x 2 for *Brachiara ruziziensis* to 152.9 m² x 2 for *Trypsacum laxum*.

WILD PIGS

Bourgeais J., Fanguinoveny M. & Ibingal C. – Technique d’Elevage du Potamochère au Gabon au parc de la Lekedi [Breeding techniques of the bushpig in Gabon, at the Lekedi Park].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l’Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 123-128.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: c/o SODEPAL; B.P. 52, Bakoumba, Gabon.

Abstract : Attempts to breed bushpig *Potamochoerus porcus* have been undertaken in the framework of land rehabilitation. Capture techniques are described as well as the infrastructures. Feeding is based on agro-industrial by-products. After 4 years, the authors mention that handling and protection against the cold are two major constraints. The animals did not fall sick, but they are highly susceptible to stress.

BIRDS

Ekue M.R.M. – Etude de l'écologie du francolin commun (*Fracolinus bicalcaratus* Linnaeus, 1766) et élaboration d'un référentiel pour son élevage en captivité étroite [Ecology study of bush fowl (*Fracolinus bicalcaratus* Linnaeus, 1766) and working out pattern for its breeding in strict captivity].

Language : French (with a summary in English)

Source : Thesis submitted for degree of Ingénieur Agronome at Département d'Aménagement et de Gestion de l'Environnement / Faculté des Sciences agronomiques – Université Nationale du Bénin, 1999, 125 p.

Address : DAGE/FSA/UNB, B.P. 526 Cotonou, Bénin.

Abstract : see in this Bulletin text of the full abstract as written by the author.

EDIBLE TROPICAL SNAILS

Gomot de Vaufleury A.* & Pihan F. – Growing snails used as sentinels to evaluate terrestrial environment contamination by trace elements.

Language : English

Source : Chemosphere, 2000, 40, 275-284.

Address* : Laboratoire de Biologie et Ecophysiologie, Université de Franche-Comté des Sciences et Techniques – place Leclerc – 25030, Besançon Cedex, France.

Abstract : *Helix aspersa* has been used successfully to test the presence of pollutants like cadmium, copper, lead and zinc through mortality and growth rates.

Yalçın S., Dogruer Y. & Gürbüz U. – Vakum paketleme ve muhafaza sıcaklığının kara salyangozu etinin kalitesine etkisi [Effect of vacuum packaging and storage temperature on the quality of snail meat].

Language : Turkish (with English summary)

Source : Veterinarium, Special Issue 9th Congress of Kütem, 1997, 20, 3, 82- .

Abstract : Meat of boiled-frozen snails (*Helix aspersa*) was used divided into two groups as vacuum and unvacuum packed kept at 4°C in refrigerator and -18°C in deepfreezer for 60 days. Samples were analysed for chemical composition and microflora.

There were no statistically significant differences ($p>0.05$) among snail meat samples at different packaging and storage temperature in terms of chemical composition during the storage period.

pH values of snail meat samples stored in refrigerator at + 4°C reached higher values significantly ($p<0.05$) on days 7 and 15 for unvacuum and vacuum packed, respectively. Unvacuum and vacuum packed samples were found to be spoiled on days 15 and 30, respectively.

Coliform group microorganisms, stafilococci and yeast and mould were not found in the samples. The numbers of general viable microorganisms and total anaerobic microorganisms were statistically higher in unvacuum packed samples stored in deepfreezer (-18°C) on days 30 and 60 than that of first day.

Adrians P. – Naissance de 65 *Eobania vermiculata* Müller, 1774 en Belgique [Birth of 65 *Eobania vermiculata* Müller, 1774 in Belgium].

Language : French

Source : L'Escargot Observateur n°7, p. 2.

Address : c/o "Li Caracole" a.s.b.l.; 41 avenue de Lauzelle; B-1340 Ottignies / Louvain-la-Neuve, Belgium.

Abstract : Short information (7 lines + 3 photographs) on the eclosion at the author's house of 65 animals of the species *E. vermiculata*, which is originating from arid biotopes of the Mediterranean area. Normal adult weighs 5 g at size 25-35 mm.

Dupont-Nivet M., Coste V., Coinon P., Bonnet J.C. & Blanc J.M. – Rearing density effect on the production performance of the edible snail *Helix aspersa*

Müller in indoor rearing [Influence de la densité sur les performances zootechniques d'escargots Petit-Gris (*Helix aspersa* Müller) en élevage hors sol].

Language : English

Source : Ann. Zootech., 2000, 49, 447-456.

Address : INRA, Laboratoire de Génétique des Poissons, 78352 Jouy-en-Josas Cedex, France.

Abstract : It was observed that, at low densities, the animals consumed more, were bigger and more of them became adults. However, the total amount of biomass produced is greater at higher densities. If the breeder merely fattens the snails, then the gross margin is maximal at a density of 250 animals per m². If the breeder fattens and cooks his own produce, then the gross margin is maximal at high densities.

Cobbinah J.R. & Kankam B.O. – Rearing of the Giant African Snails for Food.

Language : English

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 89-97.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: Forest Research Institute, FORIG, P.O. Box 63, Kumasi, Ghana – icobbinah@forig.org

Abstract : Field research has been conducted in Ghana over the past 15 years by the Forestry Research Institute, mainly on *A. achatina*, *A. fulica* and *Archachatina marginata*, the first being the most appreciated and consumed. Infrastructures are described (trench, box, pen, paddock, ...) with drawings and costs. Food and feeding (plants and compound food), reproduction and growth, breeding techniques are described as well as the aestivation or "resting phase" which occurs in nature. The article ends with description of natural enemies, key management issues and marketing. The conclusion is that achatiniculture can be a highly rewarding activity if well run.

Codjia J.T.C. – Note sur la méthodologie de la vulgarisation en achatiniculture appliquée au Bénin [Note on Extension Methodology on Achatiniculture as applied in Bénin].

Language : French

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 131-141.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: F.S.A./U.N.B.; B.P. 526, Cotonou, Bénin. E-mail: ccodjia@syfed.bj.refer.org

Abstract : The paper describes what has been applied by the author and his collaborators, i.e. 3 successive phases and 3 blocks. During the preparatory phase, discussions with potential producers lead to proposals (how, where, who ...) and to trainers identification. The training phase is organized in 3 blocks and

in several small breeders groups, each group spending the required time in each block. One very important point is that the future snail breeders, who are small farmers, attend each training session for maximum 5 days and return to their villages. A longer absence cannot be afforded. The trainees came several times for short periods. The content of each block is described. The third part is the monitoring phase, when the trainers visit the trainees in their respective villages. Experience has shown that the trainees ask for and need printed documents on the subjects taught; these small technical guides have to be very simple and preferably illustrated by drawings. A model is given with *Archachatina marginata*, cost prices and revenues.

FROGS

Thongyoon Thongkiongsye & Pichit Punsri – A Study of the Optimum Protein Levels on Growth for Frog (*Rana vagulosa*, Wiegmann).

Language : Thai

Source : Lampang Agricultural Research and Training Centre, Lampang, Thailand, Proceedings of Seminar on Agric. Science; January 1993.

Address : Rajamangala Inst. of Technology, Kalasin Campus, Kalasin, Thailand.

Abstract : The completely small frogs with averaging 2.18 gm. of body weight were used to determine the growth rate with 5 protein levels of experimental diets; 26, 29, 32, 35 and 38% RCBD was introduced to utilize for this experiment. Frogs were raised in the round cement pond (1.20 m size) with 50 frogs/pond (total 10 ponds for 500 frogs). Animals were given each diet at the rate of 10% of body weight and fed twice daily. Water replacement in the ponds were administrated at 3 third daily. Total experimental period was 90 days. Ground diet was offered to frogs at the first stage of growing (1-3 days age). Pellet diet was offered to frogs at the last stage of growing (31-90 days). Body weight and body length of frogs were determined every 2 weeks. The results were found, 38% crude protein in diet was suitable required for 1-30 days. 32% crude protein in diet was suitable required for 30-60 days of frog. 26% crude protein in diet was suitable required for 60-90 days of frog. The averaging optimum crude protein requirement of frogs during 1-90 days age should be determined 32% for growth and low FCR. value and low cost of production. [original abstract]

Sant'ana Costa C.L., Lima S.L., Ricardo Andrade D. & Agostinho C.A. – Caracterização Morfológica dos Estádios de Desenvolvimento do Aparelho Reprodutor Feminino da Rã-touro, *Rana catesbeiana*, no Sistema Anfigranja de Criação Intensiva [Morphological Characterization of the Development Stages of Female Reproduction Apparel of Bullfrog, *Rana catesbeiana*, in the Intensive Anfigranja Systems].

Language : Portuguese

Source : R. Bras. Zootec., 1998, v.27, n.4, p. 642-650.

Abstract : The objective of this work was to characterize the morphological characterization of the development stages of female reproduction apparel of bullfrog *Rana catesbeiana* from intensive Anfigranja system. During the period of one year, 836 bullfrog females were removed from regrowing and reproduction sections of the Anfigranja system to study the basic aspects of the reproduction of this specie. The collections were realized monthly and, in that occasion, the body and ovary weights for each animal were recorded and their macroscopic gonadal characteristics, registred. The ovaries from 303 females were removed and histologically examined. From the macro and microscopic characteristics analysis set of the ovary, five stages of gonadal maturation for the female of

Rana catesbeiana were determined: juvenile, beginning of maturation, intermediate maturation, advanced maturation and spent.

Parmelee J.R. – Trophic Ecology of a Tropical Anuran Assemblage.

Language : English

Source : Scientific Papers, Natural History Museum, The University of Kansas, 1999, 11, 1-59.

Address : Division of Herpetology, Natural History Museum, and Department of Ecology and Evolutionary Biology, The University of Kansas Lawrence, Kansas 66045-2454, USA.

Abstract : The diets of 867 anurans of 58 species from Cuzco Amazónico, Peru were examined. Anuran species differ greatly in average number of prey per individual and the relative size of prey consumed. Beetles, orthopterans, and millipedes are important prey items volumetrically, and ants and beetles are most important numerically. Head shape is important in the number and size of prey consumed regardless of overall size; anurans with narrower heads and shorter jaws eat more, and smaller prey items.

Puga S. & Torres P. – Helminths Parasites of *Eupsophus roseus* (Anura : Leptodactylidae) from Southern Chile.

Language : English

Source : Mem Inst Oswaldo Cruz, Rio de Janeiro, 1999, 94(6), 725-726.

Address : Instituto de Parasitologia, Universidad Austral de Chile, Casilla 567, Valdivia, Chile.

E-mail: parasito@uach.cl

Abstract : *Eupsophus roseus* Dumeril & Bibron, 1841 is a small sized (2.6-9.5 cm) endemic frog of the temperate forests of Southern Chile. In this species the following parasite endohelminths have been reported: *Oswaldocruzia neghmei*, *Rudolphitrema chilensis* and *Centrorhynchus* sp. The aims of this survey were to determine the prevalence and mean intensity of infection by parasitic helminths in a population of *E. roseus*.

Spieler M.* & Linsenmair E. – The Larval Mite *Endotrombicula pillersi* (Acarina : Trombiculidae) as a Species-specific Parasite of a West African Savannah Frog (*Phrynobatrachus francisci*).

Language : English

Source : Am. Midl. Nat., 142, 152-161.

Address* : Muséum Koenig, Adenaueralle 160, 53113 Bonn, Germany.

E-mail: h.spieler.2fmk@uni-bonn.de

Abstract : Thirty-four anuran species in Comoé National Park, Ivory Coast (West Africa), were checked for infestation by larvae of the intradermal chigger mite, *Endotrombicula pillersi* (Acarina: Trombiculidae) for 5 y (1991-1995). *E. pillersi* is a species-specific parasite of *Phrynobatrachus francisci* (Anura: Ranidae) at this site with the typical symptom of red excrescences on their ventral side. None of the other 33 species was infested, with the exception of 1 individual of *Bufo maculatus* (Anura:

Bufoidea). Not any pathological effects were found in frogs kept in terraria up to 3 years.

Bishop C.A.*, Mahony N.A., Struger J. Pettit P.N.G. & Pettit K.E. – Anuran development, density and diversity in relation to agricultural activity in the Holland River Watershed, Ontario, Canada (1990-1992).

Language : English

Source : Environmental Monitoring and Assessment, 1999, 57, 21-43.

Address* : Canadian Wildlife Service, Environment Canada, Canada Centre for Inland Waters, Box 5050, 867 Lakeshore Rd., Burlington, Ontario, Canada, L7R 4A6.

Abstract : Total abnormality was higher in green frog *R. ilamitans melanota* eggs in water from the agricultural site and a downstream site. Trace concentrations of organophosphorus pesticides were detected most often in agricultural zone water and sediments than in upstream and downstream sites.

Albinati R.C.B., Costa G.B., das Neves A.P. & Santos B.G. – Efeito densidade populacional de girinos de Rã-Touro (*Rana catesbeiana*, Shaw, 1802) sobre tempo de metamorfose e peso dos imagos [Effect of populational density of bullfrog tadpoles (*Rana catesbeiana*, Shaw, 1802) on the time of metamorphosis and the newly metamorphosed frogs weight].

Language : Portuguese (with summary in English)

Source : Arg. EMV-UFBA, Salvador, 1997-98, v. 19, 1, 89-99.

Address : Escala de Medicina Veterinaria, Av. Ademar de Barros 500, Ondina 40170-110 Salvador-Bahia, Brazil.

Abstract : This experiment has been done to test five different bullfrog's (*Rana catesbeiana*) tadpoles populational densities evaluating the metamorphosis' time as well as the newly metamorphosed frogs weight. The following populational densities: 100, 200, 300, 400 and 500 tadpoles/m³ of water in containers of 100 liters on a partial renewing system (10% per day) were tested. There was a linear decreasing in the tadpoles weight as result of the raise in the tadpoles populational densities, from the lower level tested (100 tadpoles/m³) up to the estimated density value of 239 tadpoles per water cubic meter. As from this value, the variety of weight wasn't statistically different. The best results, within a metamorphosis lesser time and higher newly metamorphosed frogs weight are related to the smaller densities tested (100 to 200 tadpoles/m³).

Summers K. – The effects of cannibalism on Amazonian poison frog egg and tadpole deposition and survivorship in *Heliconia* axil pools.

Language : English

Source : Oecologia, 1999, 119, 557-564.

Address : Department of Biology, East Carolina University, Greenville, NC 27858, USA.

E-mail: summersk@mail.ecu.edu

Abstract : Patterns of egg and tadpole deposition and mortality in the Amazonian poison frog, *Dendrobates ventrimaculatus*, were monitored in rainforest in Sucumbios Province, Ecuador. Oviposition and tadpole deposition occurred in leaf axils of

Heliconia plants. Pools typically received more than one oviposition. Egg survivorship was lower when eggs were deposited in pools with large tadpoles, indicating that cannibalism is an important source of mortality. Tadpole survivorship was also associated with the presence of other tadpoles. The test revealed that *D. ventrimaculatus* avoid placing eggs or tadpoles into a pool which contains a large tadpole.

Puga S. & Torres P. – *Aplectana artigasi* n.sp. (Nematoda : Cosmocercidae) from the Frog *Eupsophus calcaratus* (Anura : Leptodactylidae) in Southern Chile.

Language : English

Source : Mem Inst Oswaldo Cruz, Rio de Janeiro, 1997, 92(6): 767-770.

Address : Instituto de Parasitología, Universidad Austral de Chile, Isla Teja, Casilla 567, Valdivia, Chile.

E-mail: parasito@uach.ch

Abstract : A new species of nematode found in the intestine of *Eupsophus calcaratus* (Anura Leptodactylidae) from Yaldad, Chile (45°5'S; 73°43'W) is described and compared with other South American species of the genus.

Puga S. – Fauna helmintológica en anuros chilenos [Helminthological Fauna of Chilean Anura].

Language : Spanish

Source : Bol. Chil. Parasitol., 1994, 49, 81-84.

Address : Instituto de Parasitología, Universidad Austral de Chile. Castilla 567, Valdivia, Chile.

Abstract : A list of the endoparasites described for the Chilean frogs and toads is presented with prevalence and intensity of the infection. Nine species of parasites have been described; three trematodes: *Gorgoderina chilensis* in *Rhinoderma darwinii*, *Gorgoderina valdiviensis* in *Caudiverbera caudiverbera*, and *Rudolphitrema chilensis* in *Eusophus roseus*; two cestodes: *Ophiotaenia noei* in *C. caudiverbera*, and *Baerietta chilensis* in *Batrachyla taeniata*; three nematodes: *Aplectana chilensis*, and *Cosmicerca chilensis* in *R. darwinii* and *Oswaldocruzia neghmei* in *Hylorina sylvatica*, *Eusophus miqueli*, *Eusophus vertebralis*, and *E. roseus*, and one acanthocephala: *Acanthocephalus caspanensis* in *Bufo spinulosus*.

INSECTS

Nuov S., Little D.C.* & Yakupitiyage A. – Nutrient flows in an integrated pig, maggot and fish production system.

Language : English

Source : Aquaculture Research, 1995, 26, 601-606.

Address : School of Environment, Resources and Development, Asian Institute of Technology, Bangkok, Thailand.

Abstract : Direct use of pig wastes as inputs into fish culture systems may be an inferior use of value inputs. Live feeds such as the larval stage of the green blow fly, *Lucilia sericata*, can be used as intermediate organisms to utilize pig waste and subsequently be fed live as a part of a complete ration for catfish raised in cages. The nutrient efficiency of the system is further enhanced by the stocking of phytophagous fish, the Nile tilapia, *Oreochromis niloticus* (L.), in the pond in which the catfish, *Clarias gariepinus*, culture cages are suspended. A model is presented. An extrapolated catfish production of 6 T year⁻¹ using only fly larvae produced from a standing herd of approximately 1000 fattening pigs was demonstrated.

Popov V.V. – Maggot breeding on waste in application to biological life support systems.

Language : English

Source : Folia Veterinaria, 1998, 42, 85-86.

Address : State Scientific Center – Institute for Biomedical Problems, 76A Khoroshevskoye shosse, Moscow 123007 Russia.

Abstract : A possibility to intensify the process of cultivation of fly maggots on excrements of Japanese quails was investigated. Duration of this process can be shortened from 5-6 days to 3-4 days. The reduction of the substrate humidity from 70-80% down to 55-65% corresponds to an increase of larvae of 150%

MINILIVESTOCK

Code sanitaire international pour les animaux aquatiques (3^e édition, 2000)
[Diagnostic Manual for Aquatic Animal Disease].

Language : French or English (2 different editions)

Source : Office International des Epizooties O.I.E.

Address : 12 rue de Prony, F-75017 Paris, France.

pub.sales@oie.int and <http://www.oie.int>

Abstract : Two documents focused on aquatic animal diseases have recently been produced by the O.I.E. Some parts of them could interest very specific animal species not far from minilivestock (some molluscs and crustacea), but the largest part concerns fish. Both documents are issued as a single book, though the code is available in French, in English and in Spanish but the manual only in English. The code is available free of charge in web version.

Houben P. – Rôle de l'élevage de gibier dans une stratégie générale d'alternatives au braconnage.

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 186-190.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com

2) Author: idem.

Abstract : A general strategy for a sustainable management of the fauna resource has to consider all the concerned parties, whose respective interests are sometimes contradictory. The demand exists mainly in urban and peri-urban areas. Sale prices and volume offered are somewhat connected, but the proportion between bush-meat from controlled breeding and that from the wild has to become rather high if one expects to reduce poaching. Official measures (support to the breeding of short-cycle animals, enforcement of the existing legislation, sensitization campaigns, ...) are required to avoid a reduction of the animal populations in the wild. In Gabon, discussions have already started between the concerned parties in the framework of a new legislation on forests, hunting, breeding, ...

Fantonji A. & Mensah G.A. – Rôle et impact économique de l'élevage intensif de gibier au Bénin et en Côte d'Ivoire [Role and Economic Impact of Wildlife Intensive Breeding in Bénin and Côte d'Ivoire].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Élevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 25-42.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com

2) Author: Programme Aulacode, Univ. d'Abobo Adjamé, 02BP1415, Abidjan 02, Côte d'Ivoire.

E-mail: agatfa@hotmail.com

Abstract : The two countries are amongst the few having officially included minilivestock in the activities relevant to rural development. Definitions, composition of meats, environmental impact, economics at large and return calculations, ... are provided. Many graphs and tables illustrate the article, which can be considered as an updated assessment of small wildlife and minilivestock development.

lovéva K. – Caractéristiques du Marché de viande de brousse de Yaoundé et l'élevage de gibier comme alternative potentielle pour en freiner le commerce [Characteristics of the Bush-meat Market at Yaoundé and Wildlife Breeding as a Potential Way to Reduce its Trade].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 171-173.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: K. lovéva, Chargée de Recherches, APFT, B.P. 460, Bata, Guinée Equatoriale.

Abstract : Daily introduction of bush-meat in Yaoundé has been controlled for 2288 Kg (yearly average 1995-96), and total introduction should be around 3T., with a nice corresponding income for the hunters. Next to what is poached in the bush, brush-tailed porcupines and grasscutters are sold 6,000 CFAF for 1,5 Kg and 8.000 for 3 Kg respectively. Surprisingly the price for one kilo bush-meat is very often lower than that of usual meat. It seems that minilivestock controlled breeding would be accepted by people gathering now in the wild.

Hardouin J. – Les espèces envisageables en élevage intensif du gibier [Eligible species for intensive wildlife breeding].

Language : French (no summary in English)

Source : Proceedings (Actes du Séminaire International sur l'Elevage Intensif de Gibier à But Alimentaire en Afrique; Libreville 23-24 mai 2000; 204p.), 186-190.

Address : 1) Organizing committee: Projet D.G.E.G., B.P. 9129, Libreville, Gabon. E-mail: vsfgab2@internetgabon.com
2) Author: c/o BEDIM, Fac. Univ. des Sciences Agronomiques, 2 Passage des Déportés, B-5030 Gembloux, Belgium.
E-mail: adg@fsagx.ac.be

Abstract : Following some comments on terminology (wildlife, domestication, breeding) and the need to use only local species, the most important characteristics for breeding are examined (life cycle duration, pregnancy, prolificity, adult liveweight, feed, ...) as well as the type of demand (food, sale, by-products, ...). Crocodiles, snakes, chameleons, insects, manure worms, giant snails, frogs, birds, ruminants, pigs, rodents, ... deserve interest. Many species are consumed in Latin America, and some are bred or have been exported for centuries in Europe and Africa (guinea pigs *Myocastor coypus*, *Ondatra zibethica*, ...). Three species look too neglected still: the pacas, the guinea pigs and the frogs. BEDIM is ready to help in the matter.