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Lumière

sur les publications scientifiques

CENTRE SUISSE DE RECHERCHES SCIENTIFIQUES EN CÔTE D'IVOIRE

La Recherche en Partenariat pour le Développement Durable.

ÉQUIPE D'ÉDITION

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Sommaire

Introduction

Lumière sur les publications scientifiques, document de valorisation des résultats de recherche du CSRS, prend petit à petit son envol avec une seconde parution. Véritable outil stratégique de visibilité des évidences produites par les chercheurs du CSRS, son but est d'accroître les opportunités de partenariat, de collaboration et la capacité de mobilisation de ressources en montrant les compétences et expertises développées par ce centre d'excellence.

La recension des articles scientifiques dans le présent document et dans le précédent porte le nombre de l'ensemble des publications des chercheurs du CSRS à quatre-vingt-dix-sept (97) pour l'année 2019. Cette production, qui fait mention plus qu'honorable pour la taille relativement petite de ce centre de recherche en termes de nombre de chercheurs associés, démontre à la fois sa fertilité scientifique et son envie affichée de consolider sa notoriété d'institution de recherche d'excellence sous-régionale et internationale. Au-delà du nombre d'articles, ces productions ont été publiées dans des revues scientifiques de renommée internationale à comité de lecture et à impact factor élevé tel que Science, The Lancet Global Health. En ciblant ces revues scientifiques sélectives, le CSRS s'engage ainsi à renforcer sa démarche qualité au niveau de la recherche.

Au bout d'une année pleine de défis marquée par le changement de direction – le CSRS a su encore une fois tenir la barre haute en matière de recherche avec une production scientifique en quantité et de qualité. De manière indiscutable, la capacité à maintenir une recherche de qualité renforce donc l'attractivité et la compétitivité de cet institut de recherche. Pour l'année 2020, l'objectif de qualité de la recherche au CSRS reste inchangé. Par conséquent, l'accent devra être mis sur le mentorat et la formation en rédaction d'articles et de projets de recherche pour une augmentation significative du nombre publications scientifiques.

La Recherche au CSRS

La recherche au CSRS est caractérisée par des programmes pluriannuels, sur des thématiques porteuses de changement et susceptibles de susciter l'intérêt et les financements, selon des axes de recherches ayant fait l'objet d'une discussion stratégique approfondie, objective et résolument critique.

Le CSRS maintient le choix de la diversité et la transversalité de ses thèmes de recherche. Les thématiques de recherches s'inscrivent dans huit DAP transversaux. Quatre groupes de recherche dérivés des huit précédents travailleront à couvrir ces DAP (tableau 1). Les quatre groupes se présentent comme suit :

- Conservation et Valorisation des Ressources Naturelles (CVRN)
- Sécurité Alimentaire et Nutrition (SAN)
- Environnement et Santé (ESA)
- Gouvernance, Société et Développement Economique (GSDE)

L'organisation des groupes de recherche vise à plus d'efficacité et de synergies entre les groupes de recherche. Chacun des quatre groupes de recherche assure la coordination de deux DAP en veillant à développer des synergies avec les autres groupes de recherche. Chaque DAP est décliné en axes de recherche pour lui donner une orientation opérationnelle. Ainsi, les thématiques de recherche sont identifiées au sein des axes de recherche sur la base de la curiosité scientifique d'une part, et de l'ambition de contribuer à l'atteinte des indicateurs des ODD d'autre part. Par ailleurs, le choix des thématiques de recherche est influencé par les besoins locaux, l'actualité nationale et internationale sans pour autant renoncer à l'indépendance de la recherche et au choix structurel du CSRS. Ces thématiques de recherche sont identifiées et mises en œuvre dans un cheminement Recherche-Innovation-Validation-Application.

Les projet au CSRS sont organisé en portefeuilles. Un portefeuille est un ensemble de projets interdépendants partageant des ressources communes. Ces ressources peuvent être humaines, techniques et financières, mais aussi des connaissances et des technologies. Les projets de recherche du CSRS seront structurés autour de cinq portefeuilles :

- Gestion de la biodiversité et des services écosystémiques ;
- Sécurité alimentaire et nutritionnelle ;
- Systèmes de santé et gestion l'environnement ;
- Adaptations aux changements climatiques ;
- Environnement politique et systèmes sociaux.

Domaines d'activités Principales (DAP)

La contribution du CSRS à l'atteinte des objectifs de Développement Durable (ODD) se fait par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP)

Biodiversité animale, Ethologie et Service écosytémique

Biodiversité végétale et Bioproductions

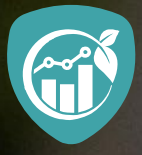
Risques environnementaux et sanitaires

Mode de vie, et transition nutritionnelle

Durabilité des systèmes de Production agricole et Sécurité alimentaire

Santé Humaine et Animale

Systèmes sociaux



Économie de l'Environnement et du Développement Local

Mots Clés

| Ecoimmunology | Immune response | Energy allocation | Costs | Captive and wild living Tambruya | embonpoint | modernité | dynamique sociale | alimentaire Consumers Food microbiology Food safety Food science Health risks Microbiology attieke | heavy metal; microbiogical | chemical | hazard Ecoimmunology | Immune response | Energy allocation | Costs | Captive and wild living anthropogenic impact | duikers | ecological niche | hierarchical clustering | species community begging efficiency interindividual differences learning nut-sharing ontogeny opportunity provision scaffolding tool-sharing tool-use Cannibalism | Chimpanzee | Maternal cannibalism | Parental investment comparative method | gastrointestinal parasites | next generation sequencing | parasite communities disease vector | polyspecific associations | sociality Animals Conservation of Natural Resources Hominidae Humans Pan troglodytes alarm callcooperationpredatorpublic goods gamesooty mangabey Buruli ulcer | Perception; Côte d'Ivoire borders | dozos | Mande hunters | Côte d'Ivoire | hunter associations | post-conflict | statehood Hypertension, Social representation, Therapeutic strategy, Abidjan, Côte d'Ivoire Tambruya, embonpoint, modernité, dynamique sociale et alimentaire Anopheles gambiae, Burkina Faso, Long-lasting insecticidal nets, Malaria control, Net durability, Olyset, Olyset Duo, Permethrin, Pyriproxyfen Vector-borne diseases; built environment | sub-Saharan Africa Sub-Saharan Africa adaptive and non-adaptive sampling design model-based geostatistics mosquito sampling remote sensing and field data stratification Sub-Saharan Africa; adaptive and non-adaptive sampling design; model-based geostatistics | mosquito sampling; remote sensing and field data | stratification Electronic analyser | Haematuria | Schistosoma haematobium | Urinalysis | Urinary dip-stick Chauves-souris paillées, habitudes alimentaires, effet de la saison, conservation, Côte d'Ivoire Amphibia, global change, Ivory Coast, mate choice, parasitism, Phrynobatrachus, rain forest, Taï National Park Diagnosis | Global health | Microscope | Mobile phone | Point of care; Schistosomiasis Expansion, Aedes africanus, Parc National, arboviroses, Abidjan, Côte d'Ivoire | Diabetes mellitus; Fasting glucose | Glycated hemoglobin; Malaria | Plasmodium dose-finding trial | hookworm; soil-transmitted helminthiasis | tribendimidine One Health, Africa Côte d'Ivoire | Schistosoma haematobium | Schistosoma mansoni | prevalence; risk factors; schistosomiasis Bacillus | attiéké | CCP | HACCP | hazard, knowledge, management, rice, rice farmers, weeds Inventory, woody flora, diametric structure, apiary, protected forest, Badenou Diversité floristique, Îles du barrage de Buyo, Anthropisation, Conservation object, wear facet Surgafe tecture, Taî, ontogeny, phytolith, hard object, wear Pygmy hippopotamus, home range, habitat requirements, West Africa, Animals Conservation of Natural Resources Hominidae Humans Pan troglodytes association patterns Biomonitoring camera trap chimpanzee fissionefusion Pan troglodytes social network analysis Sustainable Development Goals; global challenges; multisector | partnership; transdisciplinarity | transnational Chimpanzee, encounter rates, gallery forest, King Colobus, river Dodo Consumers | Food microbiology | Food safety; Food science; Health risks | Microbiology Diagnosis | Global health; Microscope | Mobile phone | Point of care | Schistosomiasis |

Le **CSRS** œuvre, à travers la Recherche Scientifique et avec ses partenaires, à faire du Développement Durable une réalité pour Tous et ce, par le biais de 8 priorités thématiques baptisés **Domaines d'Activités Principales (DAP).**

DAP 1
Biodiversité animale, Ethologie et Service écosystémique

La sous-région ouest africaine jouit d'une diversité faunique exceptionnelle qui participe à la fourniture des nombreux services écosystémiques. Les recherches et actions en faveur de la préservation de cette diversité faunique nous permettent de comprendre l'origine et l'évolution des comportements humaines à travers l'éthologie cognitive et l'écologie comportementale, mais aussi d'assurer le maintien de ces services rendus par la variété d'écosystèmes. Dans une approche transdisciplinaire, nous envisageons suivre la dynamique des espèces animales, appréhender des comportements clés affichés par plusieurs taxa et surtout contribuer à l'évaluation et au maintien des services écosystémiques qui profitent directement à nos populations mais également l'économie de nos pays.

17 Articles scientifiques dans 13 journaux avec 15 contributeurs du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

ELEVATED NEOPTERIN LEVELS IN WILD, HEALTHY CHIMPANZEES INDICATE CONSTANT INVESTMENT IN UNSPECIFIC IMMUNE SYSTEM.

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Journal : BMC Zoology
Année : 2019
Volume : 4
Numéro : 1
Page : 1-7

Télécharger

Abstract

Background: Ecological immunology proposes that the optimal immune defence, and the costs coming with it, vary across environments. In environments with higher pathogen load, the immune system should experience greater challenges and, therefore, investment in maintaining it should be higher. The biomarker neopterin allows monitoring of innate immune responses, and is therefore an ideal tool to investigate the effects of ecological variables on the immune system. Here, we compared urinary neopterin levels of apparently healthy chimpanzees without acute symptoms of sickness across two environments: in captivity (22 zoos) and in the wild (two populations). Results: Our results revealed that urinary neopterin levels were nearly twice as high in wild compared to captive chimpanzees, independent of chimpanzee subspecies. Conclusion: We conclude that wild chimpanzees experience more frequent immune challenges in comparison to captive individuals. Therefore, wild individuals have to allocate more energy to immune function and away from reproduction and growth. Our data indicate that the generally delayed development of wild animals in comparison to captive individuals might not only be related to lower energy intake but might result from greater energy allocations to immune function. Finally, our data highlight the importance of understanding immune costs for accurate characterization of energy budgets in animals.

SEASONAL DISTRIBUTION OF DUIKERS IN THE DIFFERENT VEGETATION TYPES OF TAÏ NATIONAL PARK (CÔTE D'IVOIRE).

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Journal : International Journal of Biosciences
Année : 2019
Volume : 14
Numéro : 2
Page : 386-397

Télécharger

Abstract

Knowledge of species occurrence in a particular habitat and determining factors limiting its expansion are important in ecology and conservation planning. This study was carried out at Taï National Park, aims to determine the spatio-temporal distribution of duikers with a particular focus on seasonal habitat occupancy by duikers. We collected yearly data about species' presence and their habitat of occurrence along 184 line transects of two kilometers each from 2005 to 2017. Each recorded duiker observation took into account habitat description. In total, seven sympatric species of duikers were observed with 1303 sightings of individuals. Significant differences are found between the monthly observation means of Cephalophus dorsalis ($F = 2.7462$, $p = 0.0018$) and Philantomba maxwelli ($F = 3.031$, $p = 0.0006$). For the other five species did find any difference, it is about Cephalophus jentinki ($F = 1.6269$, $p = 0.0877$), Cephalophus niger ($F = 2.27$, $p = 0.01$), Cephalophus ogilbyi ($F = 0, 99$, $p = 0.45$), Cephalophus silvicultor ($F = 1.18$, $p = 0.29$) and Cephalophus zebra ($F = 1.81$, $p = 0.049$). According to the canonical analysis of redundancy, it appears that Cephalophus niger and Cephalophus silvicultor were mainly observed in inselberg forests as well as in forests on hydromorphic soils. Cephalophus jentinki, Cephalophus zebra and Cephalophus ogilbyi do not have any particular preferences in the selection of habitats. Ecological monitoring and anti-poaching strategies must therefore integrate the ecology and activity rhythms of these duikers to improve the conservation of Taï National Park and its biodiversity.

DIFFERENTIAL RESPONSE OF SEVEN DUIKER SPECIES TO HUMAN ACTIVITIES IN TAÏ NATIONAL PARK, CÔTE D'IVOIRE.

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Journal : African Journal of Ecology
Année : 2019
Volume :
Numéro : 1
Page : 1 - 11

Télécharger

Abstract

African rainforest is severely impacted by human activities, ranging from resource collection, selective logging to fragmentation and scale deforestation. Consequently, large mammal communities occurring therein are strongly modified. Here, we present a study conducted in Taï National Park (TNP), which characterises the spatial distribution and differential response of seven duiker species to human activities. Based on extensive survey data recorded between 2005 and 2015, we used a maximum entropy modelling approach for predicting duiker species distribution and a hierarchical clustering approach to identify potential subgroups in the duiker community. The seven duiker species clearly differed in their spatial distribution, with Cephalophus dorsalis and Philantomba maxwellii being the most common and widely distributed with no clear response towards gradients of impact from human activities. In contrast, Cephalophus ogilbyi, Cephalophus jentinki, Cephalophus sylvicultor and Cephalophus zebra showed increasing responses towards anthropogenic impact gradients, with the latter two being particularly sensitive. These duikers are not found in areas of illegal human activities. The restricted distribution of Cephalophus niger seems artificial and may indicate species misidentification. The strong spatial signature of human activities in the duiker community of TNP is of concern. Effective park management, including extensive ranger patrols, is vital for ensuring the persistence of this unique duiker community in West Africa.

MATERNAL INFLUENCE ON THE DEVELOPMENT OF NUT-CRACKING SKILLS IN THE CHIMPANZEES OF THE TAI FOREST, CÔTE D'IVOIRE (PAN TROGLODYTES VERUS). TROGLODYTES VERUS).

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Journal : Am J Primatol 81: 23022
Année: 2019
Volume: 81
Numéro: 7
Page: 23-22

Télécharger

Abstract

Chimpanzees Pan troglodytes) nut-cracking behavior represents one of the most complex forms of tool-use known among nonhuman animals. Given the close phylogenetic relationship between these apes and humans, investigating how such complex behavior develops in immatures can reveal the evolutionary roots of the cognitive processes that enabled the evolution of outstanding technological skills in our lineage. In this study, we investigated whether maternal behavior directly enhanced nut-cracking skills in immature individuals. We analyzed the behavior of 11 immatures and their mothers (N = 8) during nut-cracking activity, spanning over three consecutive nut-cracking seasons in the Tai National Park, Cote d'Ivoire. We used generalized linear mixed models to (a) obtain values of maternal scaffolding (defined as provision of learning opportunities) and active nut-sharing behavior of each mother according to the age of their offspring, and their average nut-cracking efficiency; (b) to test whether these variables enhanced immatures' nut-cracking skills; and (c) to test whether immatures' features (age, sex, and begging behavior) influenced maternal behavior as observed in our videos. Although the predicted values of maternal scaffolding and active nut-sharing did not obviously affect immatures' skills, they were positively influenced by the average maternal efficiency and by sharing hammers with their mothers. In addition, our observations showed that mothers were more likely to share nuts with their sons than with their daughters, and the more their offspring begged. Concurrently, male immatures were also found to beg more often than females. Our results add evidence on the ontogenetic pathway leading to the full acquisition of nut-cracking in wild chimpanzees and on the effect that maternal behavior can have in promoting the acquisition of this complex tool-use behavior. Moreover, our study strengthens the importance of naturalistic observations to understand complex skill acquisition. Finally, we suggest future avenues for investigating the maternal influence on learning.

MATERNAL CANNIBALISM IN TWO POPULATIONS OF WILD CHIMPANZEES.

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Journal : Primates
Année : 2019
Volume : 61
Pages : 181–187

Télécharger

Abstract

Maternal cannibalism has been reported in several animal taxa, prompting speculations that the behavior may be part of an evolved strategy. In chimpanzees, however, maternal cannibalism has been conspicuously absent, despite high levels of infant mortality and reports of non-maternal cannibalism. The typical response of chimpanzee mothers is to abandon their deceased infant, sometimes after prolonged periods of carrying and grooming the corpse. Here, we report two anomalous observations of maternal cannibalism in communities of wild chimpanzees in Uganda and Ivory Coast and discuss the evolutionary implications. Both infants likely died under different circumstances; one apparently as a result of premature birth, the other possibly as a result of infanticide. In both cases, the mothers consumed parts of the corpse and participated in meat sharing with other group members. Neither female presented any apparent signs of ill health before or after the events. We concluded that, in both cases, cannibalizing the infant was unlikely due to health related issues by the mothers. We discuss these observations against a background of chimpanzee mothers consistently refraining from maternal cannibalism, despite ample opportunities and nutritional advantages. We conclude that maternal cannibalism is extremely rare in this primate, likely due to early and strong mother–offspring bond formation, which may have been profoundly disrupted in the current cases.

METABARCODING OF EUKARYOTIC PARASITE COMMUNITIES DESCRIBES DIVERSE PARASITE ASSEMBLAGES SPANNING THE PRIMATE PHYLOGENY.

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Journal : Molecular Ecology
Année : 2019
Volume : 20
Numéro : 1
Pages : 204-215

Télécharger

Abstract

Despite their ubiquity, in most cases little is known about the impact of eukaryotic parasites on their mammalian hosts. Comparative approaches provide a powerful method to investigate the impact of parasites on host ecology and evolution, though two issues are critical for such efforts: controlling for variation in methods of identifying parasites and incorporating heterogeneity in sampling effort across host species. To address these issues, there is a need for standardized methods to catalogue eukaryotic parasite diversity across broad phylogenetic host ranges. We demonstrate the feasibility of a metabarcoding approach for describing parasite communities by analysing faecal samples from 11 nonhuman primate species representing divergent lineages of the primate phylogeny and the full range of sampling effort (i.e. from no parasites reported in the literature to the best-studied primates). We detected a number of parasite families and regardless of prior sampling effort, metabarcoding of only ten faecal samples identified parasite families previously undescribed in each host ($\bar{x}$ = 8.5 new families per species). We found more overlap between parasite families detected with metabarcoding and published literature when more research effort-measured as the number of publications-had been conducted on the host species' parasites. More closely related primates and those from the same continent had more similar parasite communities, highlighting the biological relevance of sampling even a small number of hosts. Collectively, results demonstrate that metabarcoding methods are sensitive and powerful enough to standardize studies of eukaryotic parasite communities across host species, providing essential new tools for macroecological studies of parasitism.

TROPICAL RAINFOREST FLIES CARRYING PATHOGENS FORM STABLE ASSOCIATIONS WITH SOCIAL NONHUMAN PRIMATES.

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Journal : Mol Ecol 28
Année : 2019
Volume : 28
Numero : 18
Pages : 4242-4258

Télécharger

Abstract

Living in groups provides benefits but also incurs costs such as attracting disease vectors. For example, synanthropic flies associate with human settlements, and higher fly densities increase pathogen transmission. We investigated whether such associations also exist in highly mobile nonhuman primate (NHP) Groups. We studied flies in a group of wild sooty mangabeys (Cercocebus atys atys) and three communities of wild chimpanzees (Pan troglodytes verus) in Taï National Park, Côte d'Ivoire. We observed markedly higher fly densities within both mangabey and chimpanzee groups. Using a mark-recapture experiment, we showed that flies stayed with the sooty mangabey group for up to 12 days and for up to 1.3 km. We also tested mangabey-associated flies for pathogens infecting mangabeys in this ecosystem, Bacillus cereus biovar anthracis (Bcbva), causing sylvatic anthrax, and Treponema pallidum pertenue, causing yaws. Flies contained treponemal (6/103) and Bcbva (7/103) DNA. We cultured Bcbva from all PCR-positive flies, confirming bacterial viability and suggesting that this bacterium might be transmitted and disseminated by flies. Whole genome sequences of Bcbva isolates revealed a diversity of Bcbva, probably derived from several sources. We conclude that flies actively track mangabeys and carry infectious bacterial pathogens; these associations represent an understudied cost of sociality and potentially expose many social animals to a diversity of pathogens.

EFFECTS OF ANTI-POACHING PATROLS ON THE DISTRIBUTION OF LARGE MAMMALS IN TAÏ NATIONAL PARK, CÔTE D'IVOIRE.

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Journal : Oryx
Année : 2019
Volume : 53
Numéro : 3
Pages : 469-478

Télécharger

Abstract

The effectiveness of protected area management is a major concern. In Taï National Park, Côte d'Ivoire, recurrent human pressure challenges the ability of law enforcement authorities to protect wildlife. During 2010–2015 we studied the implementation of law enforcement in the Park to determine (1) the potential for improvement of the protection of large mammals and (2) the minimum patrolling effort needed to obtain increases in their populations. We recorded presence of large mammals and illegal activities in two areas within the Park, the research area (210 km2) and the rest of the Park (5,150 km2), and compiled data about patrolling efforts from the Park authorities. Using a generalized linear mixed model we identified a relationship between increased patrolling effort and the relative abundance of large mammals, especially for monkey groups, pygmy hippopotamuses Choeropsis liberiensis and duikers. At low patrolling efforts duiker encounter rates remained stable, whereas rates of encounter with monkey groups and pygmy hippopotamuses decreased. Chimpanzee Pan troglodytes verus encounter rates were slower to respond and remained stable at higher patrolling effort, but decreased at low patrolling effort. Our findings suggest that a minimum of 1.32 patrol days per km2 over 2 years is required for chimpanzee and monkey populations to increase, whereas a patrolling effort of 0.48 days per km2 over 2 years would lead to an increase in duiker and pygmy hippopotamus populations. We maintain that the patrolling effort required to ensure an increase in wildlife can be estimated relatively precisely from multi-year biomonitoring programmes.

DOMINANCE STYLE AND VOCAL COMMUNICATION IN PRIMATES.

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24 University of Portsmouth
25 University of Calgary
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30 University of Wisconsin-Madison
31 University of Pretoria [South Africa]
32 University of St Andrews [Scotland]

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Télécharger

Abstract

Consumption of bushmeat, a staple food of people living in the vicinity of protected areas, is a challenge for the conservation of wildlife. The underlying factors driving this consumption are, however, relatively understudied, particularly among rural households, and improved understanding would facilitate the development of conservation strategies. We therefore aimed to identify the factors that influence bushmeat consumption in rural households to the west of Taï National Park, in Côte d'Ivoire.Wecarried out enquiries in a total of 144 rural households in 20 localities during July–December 2012. Bushmeat, the majority of which comprised rodents and bovids, accounted for 13%of the animal protein consumed in these households. This consumption was significantly higher in households in which poverty was more acute (low annual income and more dependent children). We found that repeated awareness campaigns involving theatre performances and/or film screenings (multimedia campaigns) contributed to a decrease in bushmeat consumption. This decrease exceeded 62% after exposure to four multimedia campaigns. We highlight the importance of awareness campaigns for reducing consumption of wild animals, and demonstrate the importance of recurring multimedia campaigns to maximize the impact of such conservation activities in rural communities.

BUSHMEAT CONSUMPTION AND ENVIRONMENTAL AWARENESS IN RURAL HOUSEHOLDS: A CASE STUDY AROUND TAÏ NATIONAL PARK, CÔTE D'IVOIRE

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Journal : Oryx
Année : 2019
Volume : 53
Numéro :
Pages : 293-299

Télécharger

Abstract

Consumption of bushmeat, a staple food of people living in the vicinity of protected areas, is a challenge for the conservation of wildlife. The underlying factors driving this consumption are, however, relatively understudied, particularly among rural households, and improved understanding would facilitate the development of conservation strategies. We therefore aimed to identify the factors that influence bushmeat consumption in rural households to the west of Taï National Park, in Côte d'Ivoire.Wecarried out enquiries in a total of 144 rural households in 20 localities during July–December 2012. Bushmeat, the majority of which comprised rodents and bovids, accounted for 13%of the animal protein consumed in these households. This consumption was significantly higher in households in which poverty was more acute (low annual income and more dependent children). We found that repeated awareness campaigns involving theatre performances and/or film screenings (multimedia campaigns) contributed to a decrease in bushmeat consumption. This decrease exceeded 62% after exposure to four multimedia campaigns. We highlight the importance of awareness campaigns for reducing consumption of wild animals, and demonstrate the importance of recurring multimedia campaigns to maximize the impact of such conservation activities in rural communities.

INCLUSIVE CHIMPANZEE CONSERVATION-RESPONSE.

Hjalmar S. Kühl [1,2,*] I Christophe Boesch [1,3] I Lars Kulik [1] I Fabian Haas [1] I Mimi Arandjelovic [1] I Paula Dieguez [1] I Gaëlle Bocksberger [1] I Anthony Agbor [1] I Samuel Angedakin [1] I Emmanuel Ayuk Ayimisin [1] I Mattia Bessone [1] I Gregory Brazzola [1] I Rebecca Chancellor [4,5] I Heather Cohen [1] I Charlotte Coupland [1] I Emmanuel Danquah [6] I Tobias Deschner [1] I Dervla Dowd [3] I Annemarie Goedmakers [7] I Anne-Céline Granjon [1] I Josephine Head [1] I Daniela Hedwig [8,9] I Veerle Hermans [10] I Sorrel Jones [1,11,12] I Jessica Junker [1] I Kevin E. Langergraber [13] I Juan Lapuente [1] I Kevin Lee [1,13] I Manuel Llana [14] I Sergio Marrocoli [1] I Rumen Martin [1] I Maureen S. McCarthy [1] I Amelia C. Meier [1] I David Morgan [15] I Mizuki Murai1 I Emily Neil1 I Emma Normand3 I Lucy Jayne Ormsby1 I Liliana Pacheco14 I Alex Piel16 I Sebastien Regnaut [3] I Aaron Rundus [5] I Crickette Sanz [17] I Fiona Stewart [16] I Nikki Tagg [10] I Virginie Vergnes [3] I Adam Welsh [1] I Erin G. Wessling [1,2] I Jacob Willie [10,18] I Roman M. Wittig [1,19] I Yisa Ginath Yuh [1] I Kyle Yurkiw [1] I Ammie K. Kalan[1,*]

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Journal: Science
Année: 2019
Volume: 364
Numéro: 6445
Pages: 1040-1041

Télécharger

Abstract

Across the African continent, multiple chimpanzee communities have been observed to exhibit a wide variety of behavioural diversity, some of which cannot be explained by ecological or genetic variation. However, excluding subtle environmental factors has been suggested to be difficult between populations that live thousands of kilometres apart from one another. Taï National Park offers a unique opportunity to further explore the impact of social learning on observed behavioural diversity among wild chimpanzees, as communities live in the same stretch of tropical rain forest. Two groups of chimpanzees (Pan troglodytes verus) called 'the Taï South Group'and 'Djouroutou' live within 60 kilometres of each other in a similar, continuous ecosystem. However, these groups have been observed to apply semi-different techniques when nut-cracking. Djouroutou chimpanzees crack five species of nuts (Coula edulis, Parinari excelsa, Panda oleosa, Sacoglottis gabonensis and Detarium senegalensis) and exclusively use stones as hammers to open these nuts. The Taï South Group, however, only cracks four of those species and does not exploit Sacoglottis gabonensis nuts which are abundant in their territory. Moreover, this group uses stone and wooden tools to crack open nuts. Here, we compared tool-material availability and tool choice between these two groups. Our results show that both groups have the same nut trees available in their territories and their access to stone and wooden material is similar. Despite this, the Taï South and Djouroutou chimpanzees responded to these ecological conditions differently than predicted if these were the only factors responsible to shape chimpanzee behaviour. This highlights the potential role of cultural behaviour in wild chimpanzee feeding ecology.

CULTURAL DIVERSITY OF NUT-CRACKING BEHAVIOUR BETWEEN TWO POPULATIONS OF WILD CHIMPANZEES (PAN TROGLODYTES VERUS) IN THE CÔTE D'IVOIRE.

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Journal: Cambridge Universsity Press, TJ International Ltd, Padsrow Cornwall
Année: 2019
Pages: 194-220

Télécharger

Abstract

Across the African continent, multiple chimpanzee communities have been observed to exhibit a wide variety of behavioural diversity, some of which cannot be explained by ecological or genetic variation. However, excluding subtle environmental factors has been suggested to be difficult between populations that live thousands of kilometres apart from one another. Taï National Park offers a unique opportunity to further explore the impact of social learning on observed behavioural diversity among wild chimpanzees, as communities live in the same stretch of tropical rain forest. Two groups of chimpanzees (Pan troglodytes verus) called 'the Taï South Group'and 'Djouroutou' live within 60 kilometres of each other in a similar, continuous ecosystem. However, these groups have been observed to apply semi-different techniques when nut-cracking. Djouroutou chimpanzees crack five species of nuts (Coula edulis, Parinari excelsa, Panda oleosa, Sacoglottis gabonensis and Detarium senegalensis) and exclusively use stones as hammers to open these nuts. The Taï South Group, however, only cracks four of those species and does not exploit Sacoglottis gabonensis nuts which are abundant in their territory. Moreover, this group uses stone and wooden tools to crack open nuts. Here, we compared tool-material availability and tool choice between these two groups. Our results show that both groups have the same nut trees available in their territories and their access to stone and wooden material is similar. Despite this, the Taï South and Djouroutou chimpanzees responded to these ecological conditions differently than predicted if these were the only factors responsible to shape chimpanzee behaviour. This highlights the potential role of cultural behaviour in wild chimpanzee feeding ecology.

CAMERA TRAPS PROVIDE A ROBUST ALTERNATIVE TO DIRECT OBSERVATIONS FOR CONSTRUCTING SOCIAL NETWORKS OF WILD CHIMPANZEES.

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Journal : Animal Behaviour
Année : 2019
Volume : 157
Pages : 227-238

Télécharger

Abstract

Social network analysis provides valuable opportunities to quantify the nature of social relationships in animal societies including aspects of group structure, dynamics and behaviour transmission. Remote monitoring approaches such as camera trapping offer rich data sets from groups and species that are difficult to observe, yet the robustness of these data for constructing social networks remains unexplored. Here we compared networks of party association based on camera traps with those based on direct observations over the same 9-month sampling period in a group of habituated western chimpanzees, Pan troglodytes verus. Networks based on camera traps and direct observations were both stable with sufficient sampling, and had very similar structures, patterns of sex assortment and individual network positions. However, camera trap data led to lower estimates of group density and dyadic association strengths, and slightly higher modularity, illustrating the limitations raised by differences in data collection methods for network comparisons. We then constructed a social network using camera trap data from unhabituated eastern chimpanzees, P.t. schweinfurthii, demonstrating the feasibility of this approach in the absence of extensive prior knowledge of the study subjects. Further, differences between the eastern and western chimpanzee social networks followed expected patterns based on recognized social differences, illustrating the promise of this approach for detecting within-species social variation. Although long-term behavioural observations will continue to provide rich data for many species, camera traps offer a powerful alternative to gain information on social group dynamics in elusive or unhabituated animals, as well as to conduct systematic multisite comparative studies.

SNAKE ALARM CALLS AS A PUBLIC GOOD IN SOOTY MANGABEYS.

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Journal : Animal Behaviour
Année : 2019
Volume : 157
Pages : 227-238

Télécharger

Abstract

Transmitting information about the location of a predator in social animal species can be seen as an investment in a public good, where information is the resource and group members benefit from reduced fatalities of kin and cooperation partners in their community. As few empirical tests of this idea exist in natural settings, we conducted a field experiment using snake models in wild sooty mangabeys, Cercocebus atys atys. We tested sooty mangabey alarm-calling patterns when exposed to viper models, investigating whether individuals called to signal fitness, to warn specific group members, or when information about the threat is not public, as would be predicted by public goods games. Strong interindividual differences in the likelihood of alarm calling existed. We found that overlap between callers was rare. Individuals were more likely to call if fewer individuals were present at the encounter site and if they had not heard other alarm calls before arriving at the site, indicating that alarm calls extended the information about the threat to following group members. This group size effect is in line with predictions of the volunteer's dilemma, a public goods game. We found no indications that individuals called specifically to warn ignorant individuals, kin or cooperation partners. Calling when information about the threat was not public allowed individuals to warn following group members while avoiding redundancy. Public goods games have not been employed widely in studies of the evolution of primate cooperation and animal communication in general but may provide useful models for understanding group level cooperation.

URINARY CORTISOL, AGGRESSION, DOMINANCE AND COMPETITION IN WILD, WEST AFRICAN MALE CHIMPANZEES.

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Journal : Frontiers in Ecology and Evolution
Année : 2019
Volume : 7

Télécharger

Abstract

High dominance status is associated with fitness benefits in many social mammals. Yet, attaining and maintaining a high social status often comes with elevated energetic costs. Dominance rank-related exposure to energetic and psychosocial stressors is predicted to vary depending on the type of breeding system, the means a high rank is acquired and maintained, and the stability of the dominance hierarchy. Using behavioral data and urinary cortisol levels, we investigated whether a high dominance rank is associated with elevated energetic costs in Taï male chimpanzees and whether the relationship between male dominance rank and cortisol levels varies between stable and unstable dominance periods. Additionally, we investigated potential sources of energetic and psychosocial stress linked to competition over dominance status and mating opportunities. We found that higher-ranking males gave more aggressions than lower-ranking males in stable and unstable dominance periods, but that dominance rank and urinary cortisol levels were not associated in either period. Urinary cortisol levels were higher in all males in unstable compared to stable dominance periods, whereas aggression rates showed the reversed pattern, with higher rates in stable periods. Our results indicate that dominance maintenance is not associated with elevated physiological stress for dominant Taï male chimpanzees, and that social instability exposed all males to psychosocial stress, despite lower rates of aggressive interactions. Overall, these findings suggest that male chimpanzees adjust competitive behavior to context dependent conditions, possibly by means of predictability of outcomes of social interactions, and use conflict management strategies, such as avoidance of aggression potentially diminishing the risk of escalation.

LEVERAGING RESEARCH PARTNERSHIPS TO ACHIEVE THE 2030 AGENDA: EXPERIENCES FROM NORTH-SOUTH COOPERATION

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5 Centro de Investigación para el Desarrollo, La Paz, Bolivia

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Journal : GAIA - Ecological Perspectives for Science and Society
Année : 2019
Volume : 28
Numéro : 2
Pages : 143-150

Télécharger

Abstract

Transmitting information about the location of a predator in social animal species can be seen as an investment in a public good, where information is the resource and group members benefit from reduced fatalities of kin and cooperation partners in their community. As few empirical tests of this idea exist in natural settings, we conducted a field experiment using snake models in wild sooty mangabeys, Cercocebus atys atys. We tested sooty mangabey alarm-calling patterns when exposed to viper models, investigating whether individuals called to signal fitness, to warn specific group members, or when information about the threat is not public, as would be predicted by public goods games. Strong interindividual differences in the likelihood of alarm calling existed. We found that overlap between callers was rare. Individuals were more likely to call if fewer individuals were present at the encounter site and if they had not heard other alarm calls before arriving at the site, indicating that alarm calls extended the information about the threat to following group members. This group size effect is in line with predictions of the volunteer's dilemma, a public goods game. We found no indications that individuals called specifically to warn ignorant individuals, kin or cooperation partners. Calling when information about the threat was not public allowed individuals to warn following group members while avoiding redundancy. Public goods games have not been employed widely in studies of the evolution of primate cooperation and animal communication in general but may provide useful models for understanding group level cooperation.

ONTOGENETIC DIETARY SHIFTS AND MICROSCOPIC TOOTH WEAR IN WESTERN CHIMPANZEES.

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Journal : Frontiers in Ecology and Evolution
Année : 2019
Volume : 7

Télécharger

Abstract

Microscopic tooth wear studies on primates have largely focused on interspecific dietary comparisons, while few have addressed intraspecific variations such as those among age groups.
Here, we examined to what extent dietary shifts during ontogeny can be revealed from microscopic tooth wear in a western chimpanzee population using 3D surface texture (3DST) analysis. To this end, we analyzed feeding observation data of 14 chimpanzees of the Taï National Park (Ivory Coast) and matched them to 3DST data analyzed on two wear facets (f9, f3) of deciduous fourth premolars and permanent molars of 41 specimens (infants, juveniles, adolescents, adults) of the same population. We expected to find an age-dependent increase in texture complexity resulting from the more frequent consumption of seeds and insects in older compared to younger individuals.
Furthermore, we expected the introduction of phytolith-producing plants to the diet of post-weaned individuals to result in many small and parallel-orientated 3DST features in juveniles, adolescents and adults compared to infants. We found that the 3DST pattern did not mirror the observed increase in dietary breadth from infants to adults. However, we found that age-dependent differences in the consumption of phytolith producing plants were reflected to some extent in the 3DST pattern: infants and adolescents who spent more time feeding on phytolith-producing plants than older individuals had more parallel orientated 3DSTs with higher peaks, while adults had flatter and more randomly orientated 3DST features.
Provisional Tooth wear in western chimpanzees This is a provisional file, not the final typeset article Our results suggest that phytoliths as small abrasive particles may 37 be of greater importance for the DST formation than food categories such as fruits, leaves or seeds. However, compared to the variation in the feeding data, 3DST results show only little variation among age groups. We conclude that 3DST does not explicitly reflect ontogenetic dietary changes in chimpanzees. Rather, other factors, such as individual- or sex-based feeding habits as well as seasonal variation in dust accumulation, may be of greater importance for 3DST formation.

DAP 2
Biodiversité végétale et Bioproductions

Les biomolécules des plantes offrent une grande diversité de services à l'Homme. Aujourd'hui, les bioproductions constituent des solutions alternatives d'avenir avec l'avantage de préserver la biodiversité végétale et de permettre l'utilisation des espèces rares ou protégées pour produire des actifs végétaux à grande valeur. Les recherches et actions dans ce domaine visent à organiser une filière verte de bioproduction d'extraits végétaux naturels, favoriser l'accès aux substances actives pour l'innovation pharmaceutique, cosmétique, agro-alimentaire, agronomique, énergétique, à développer des bioproduits et à protéger la biodiversité. Dans l'optique de la création d'une économie verte forte pour nos communautés et les industries et ainsi contribuer significativement à la lutte contre la pauvreté, plusieurs études floristiques, ethnopharmacologies, «Social business model», phytochimie et procédés des biotechnologies vertes sont initiées dans une approche transdisciplinaire.

3 Articles scientifiques dans 3 journaux avec 4 contributeurs du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

Photo : Fruits secs de Coelocaryon oxycarpum en vente au marché, une plante utilisée pour la confection d'un repas thérapeutique servi aux femmes post-partum dans le Département de Bondoukou, Côte d'Ivoire. | **Crédits photo :** Doudjou Ouattara

ANALYSE DE LA DIVERSITÉ FLORISTIQUE DE QUELQUES ÎLES AMÉNAGÉES DU BARRAGE DE BUYO (CÔTE D'IVOIRE).

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2 Centre de Recherche en Ecologie, Abidjan, Université Nangui Abrogoua, Côte d'Ivoire,

3 Centre Suisse de Recherches Scientifiques, Côte d'Ivoire

Journal : European Scientific Journal ESJ
Année : 2019
Volume : 15
Numéro : 18
Pages : 1857 – 7881

Télécharger

Abstract

This paper focuses on analyzing the floristic composition of islands of Buyo's dam after strong anthropization. Using surfaces surveys, linear surveys and itinerant surveys, the floristic composition and diversity were determined. Seven hundred and twenty-three plants species belonging to 353 genera and 99 families were recorded. The ecological importance of the species has been assessed from the Value of Significance. The study showed that for tree species with diameter ≥ 10 cm, the species Alchornea cordifolia, Ceiba pentandra, Theobroma cacao, and Lannea welwitschii were the richest and had the highest Indices of Value Importance. The mean richness of species showed a significant difference (p≤ 0. 03797) among the Islands of Buyo's dam. Island D which is close to the Park with the presence of animals isrich in species(101 ± 10 74). Apolinaire and Laminebougou Islands farthest to the Park with strong agricultural activity are poor in species (51 ± 11. 14; 50 ± 6. 29). Floristic diversity and evenness do not vary statistically from one site to another.

CARACTÉRISTIQUES STRUCTURALES ET IMPORTANCE RELATIVE DE LA FLORE LIGNEUSE AUTOUR DE DEUX RUCHERS INSTALLÉS DANS LA FORÊT CLASSÉE DE BADENOU (NORD DE LA CÔTE D'IVOIRE). INTERNATIONAL

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Journal : Journal of Innovation and Applied Studies
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Volume : 26
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Télécharger

Abstract

This study was conducted around two experimental apiaries located in the Badenou protected forest, at the periphery and nearby the villages of Tiébila and Nafoun. Its purpose was to characterize the structure of woody vegetation and to evaluate its relative importance. For this purpose, a surface inventory was carried out in December 2017. The structure of the vegetation was studied through the density of woods, the basal area and the diameter structure. The relative importance of the flora was appreciated through the indices of importance value and rarefaction of species and families. An average floristic richness was observed with 96 species grouped into 72 genera and 30 families. The high density (1482 ± 657.15 stems/ha) and the average basal area (13.19±5.94 m2/ha) could be due to the good level of conservation of woodlands. The diametric structure of vegetation presented an appearance of "inverted J" and showed a predominance of small diameter trees. Eight species and eight families were predominant. Sixty-three species and 15 families were rare. Pending the results of the identification of honey plants, the woody flora studied is potentially melliferous. Its medium diversity and its high density were a major asset for beekeeping because they were likely to provide the floral resources necessary for a large production of honey.

FARMERS' KNOWLEDGE AND MANAGEMENT PRACTICES OF WEEDS IN RICE FIELDS IN COTE D'IVOIRE.

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Journal : African Crop Science Journal
Année : 2019
Volume : 27
Numéro : 2
Page : 165

Télécharger

Abstract

Rice (Oryza sativa L.) is one of the most consumed cereal food crops in the world, in particular in sub-Saharan Africa. However, in Cote d'Ivoire its production faces severe competition from weed infestation. This study was carried out to identify practices and traditional management methods of weeds in rice fields from Cote d'Ivoire that can be used in an integrated weed managment package with less pesticide usage. A survey was conducted among 396 farmers in three locations (six villages per area) of rice production in Cote d'Ivoire, using semi-structured interviews and field observations. The results revealed that upland, irrigated and lowland rice were cultivated in the study areas. In rice fields, the main weeds difficult to control were Cyperus rotundus, Eleusine indica, Oryza longistaminata, Porophyllum ruderale and Rottboellia cochinchinensis. Biological control and a combination of chemical and manual methods were used to manage the weeds due to their resistance to most of the herbicides. The farmers cited 23 plant species (seven herbicidal and 16 allelopathics) used for the control of weeds. Studies of these plants in the effective control of weeds would be worthwhile to explore the development of alternative to chemical controls, less harmful to humans, crops and environment.

Dap 3 :
Durabilité Des Systemes De Production Agricole Et Securité Alimentaire

L'évaluation de la complexité de l'interface 'Homme, Environnement, Santé' dans un contexte d'urbanisation accélérée, de pression démographique et des variabilités climatiques nécessite des approches innovantes impliquant des méthodes inter- et transdisciplinaires. Nous voulons apporter ici des réponses durables et adaptées à cette thématique, conformément aux Objectifs du Développement Durable pour 2030. Une telle investigation associe entre autres des approches qualitatives, la microbiologie, la physico-chimie et la modélisation des systèmes. Les résultats attendus portent sur la réduction des vulnérabilités des populations aux chocs liés aux changements globaux et l'apport d'informations scientifiques viables sur les facteurs de risques aux décideurs.

3 Articles scientifiques dans 3 journaux avec 1 contributeur du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

ASSESSMENT OF SAFETY RISKS ASSOCIATED WITH PORK MEAT SOLD ON THE MARKET IN ABIDJAN CITY (CÔTE D'IVOIRE) USING SURVEYS AND MICROBIAL TESTING.

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Journal : Heliyon
Année : 2019
Volume : 5
Numéro : 7
Page : 2172

Télécharger

Abstract

Pork meat is consumed in several forms base on the mode of cooking in Cote d'Ivoire. It is most often braised, grilled or cooked in soup. The aim of this study was to assess the importance of pork meat consumption in the diet of the Ivorian population. It also tried to assess the risks that consumers of this meat may incur in order to provide solutions through the implementation of good hygiene and manufacturing practices at the sites where this meat is sold.Thus, a consumption survey was conducted in the municipalities of Adjame, Abobo and Yopougon. The enumeration of germs such as mesophilic aerobic germs, Staphylococcus aureus, Salmonella and coliforms was carried out too. It appeared that out of the three hundred (300) interviewees were all familiar with pork meat and 99% consumed it. The majority of consumers was masculine and 98% had Ivorian nationality. Among consumers, 52% had had at least one discomfort after eating pork. Symptoms of these ailments were vomiting, diarrhea and stomach aches. In addition, microbiological analyses of commercial forms of pork meat have revealed pathogenic germs such as Staphylococcusaureus, coliforms and mesophilic aerobic germs. Loads of mesophilic aerobic germs, Staphylococcus aureus and fecal coliforms ranged respectively from (1.2 +/- 0.07)10(10) to (1.3 +/- 0.6)10(11) CFU/g; from (2 +/- 0.7)10(5) to (3.1 +/- 0.7)10(6) CFU/g and from (1.1 +/- 0.6)10(4) to (1.7 +/- 0.91)10(5) CFU/g. All samples contained microbial loads above the European Community (EC) Standards No 2073/2005 for ready-to-eat pork meat. Pork meat then poses a health risk to consumers.

MICROBIOLOGICAL AND CHEMICAL HAZARDS OF COMMERCIAL ATTIEKE (A FERMENTED CASSAVA PRODUCT) PRODUCED IN THE SOUTH OF CÔTE D'IVOIRE.

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Journal : Food Quality and Safety
Année : 2019
Volume : 3
Numéro : 3
Page : 187–190

Télécharger

Abstract

Objectives: Information on the distribution and presence of microbiology and chemical hazard of commercial attieke (a fermented cassava product) produced in the south of Côte d'Ivoire were evaluated.
Materials and Methods: Microbiological analyses and chemical were carried out, which included the total viable bacteria, Staphylococcus aureus, Salmonella and Bacillus spores, heavy metal (pb,Cd, Mn, Fe, Cu, and Cr). Results and Conclusions: The results revealed that the viable bacteria counts ranged from in all of samples. Staphylococcus aureus counts in the samples were comprised between (1.8 ± 0.4)102 (Jacqueville localitie) and (4.3 ± 1.8)103 (1.1 ± 0.9)102 (Adzopé localitie) and (5.1 ± 3.2)102 (Abidjan localitie). While that of Bacillus cereus was ranged from (Abidjan localitie). Salmonella spp. was not found. The levels of Pb in all samples were between 2.2 ± 0.1 mg/kg (Grand-lahou localitie) and 4.5 mg/kg ± 0.15 (Abidjan localitie) while the Cd levels of the samples varied between 0.02 ± 0.1 mg/kg (Adzopé localitie) and 0.07± 0.1 mg/kg (Divo localitie). The levels of Cr in the samples were comprised between 0.1 ± 0.03 mg/kg (Adzopé localitie) and 0.95 ± 0.1 mg/kg (Abidjan localitie) while Fe (7.3 ± 1.5 mg/kg) and Cu (1.7 ± 0.2 mg/kg) levels were the highest, respectively in Sikensi and Grand-Lahou localities. Samples from Divo localitie contained high amounts of Mn (1.6 ± 0.1 mg/kg). The occurrence of some microbiological and chemical hazard that commercial attieke collected in Cote d'Ivoire may act as a reservoir of pathogenic micro-organisms and heavy metal for human.

IDENTIFICATION OF HAZARDS AND CRITICAL CONTROL POINTS DURING ATTIEKE (A FERMENTED CASSAVA PRODUCT) PROCESS IN CÔTE D'IVOIRE.

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Journal : Lett Appl Microbiol
Année : 2019
Volume : 70
Numéro : 2
Page : 87-94

Télécharger

Abstract

Attiéké is the major fermented plant food in Côte d'Ivoire. The aim of this study was to identify hazards and critical control points (CCP) in order to implement a HACCP system for the production of attiéké. Physico-chemical and microbiological analyses were carried out. pH of the cossettes used as raw material for attieke process was slightly acidic (6·5 ± 0·23). But attiéké produced had an acid pH (4·55 ± 0·67). The very high amount of hydrocyanic acid in cassava roots (116 ± 9·42 mg kg-1) was reduced to a lower value (3·4 ± 0·14 mg kg-1) in attiéké. It was less than the Codex Alimentarus recommended dose (10 mg kg-1). Microbiological analysis of the samples revealed the presence of coliforms, bacillus, Staphylococcus aureus and moulds in the intermediate products, the packaged attieke, the utensils, environment and ingredients. During the fermentation and pressing stage, the coliforms disappeared and the loads of Bacillus cereus, S. aureus and moulds were reduced. Cooking eliminated all micro-organisms except B. cereus (spores) whose load was reduced to a value of (1·1 ± 0·4)102 CFU per gram. All these micro-organisms reappeared in attiéké just after packaging. The load of micro-organisms in the packaged attiéké was lower than the Codinorm standard, CCP were cassava roots, the crushing, fermentation, and drying, cooking and packaging stage. SIGNIFICANCE AND IMPACT OF THE STUDY: This study demonstrates the great need to carry out microbiological tests frequently on attieke and even more the need to apply correct HACCP system during the production. This study will make it possible to minimize the problems encountered by women producers of attiéké, ensure consumer safety, face competition from imported starch products (wheat, rice, etc.), contribute to the opening of a small and medium-scale industrialization path for the production of attiéké and strengthen standardization on attiéké to facilitate its export.

DAP 4 :
Mode de vie, et transition nutritionnelle

Depuis plusieurs décennies, la croissance démographique, les mouvements migratoires, l'urbanisation, les besoins alimentaires sont des défis à relever dans les contextes en pleine mutation des pays en développement. Les dégradations de l'environnement transforment le milieu et occasionnent un rapprochement entre les populations humaines et animales. Ces contextes épidémiogènes sont favorables aux maladies infectieuses et non-infectieuses dont 70% sont à caractère zoonotique. Nous visons ici le renforcement de la lutte intégrée contre les maladies à l'interface Homme-Animaux-Ecosystème et palier les conséquences économiques et sociales qui en découlent. Cela nécessite une approche holistique, transdisciplinaire et multisectorielle telle que préconisé par le concept "One Health" et une synergie entre la médecine humaine et la médecine vétérinaire. Les acquis de ces recherches serviront aux décideurs et acteurs de développement pour la mise en œuvre de programmes de surveillance sanitaire et au renforcement durable du système de santé.

1 Article scientifique dans 1 journal avec 2 contributeurs du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

NUTRITION PATTERNS OF HOUSEHOLDS IN THE TAABO HDSS, SOUTH-CENTRAL CÔTE D'IVOIRE: A PILOT STUDY.

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Journal : The african Academy of Sciences
Année : 2019
Volume :
Numéro :
Page :

Télécharger

Abstract

Objective : This study was carried out to determine current nutritional practices in south-central Côte d'Ivoire. Methodology: Eight households, four from a village and four from a town were investigated. Participatory observation provided insights on the exact preparation methods of meals, food distribution and hygiene standards of the cook. Taboos and local beliefs connected to food, diets of vulnerable household members including child nursing practices, and the origin of the food products were assessed using a semi-structured interview and focus groups. Food availability in the localities was estimated through a market visit.

Results : A diverse range of food is available and prepared. Vegetable consumption per individual is rather low and hand washing practices before eating have room for improvement. Protein products derived from animals are given in preference to elderly people and adults, whereas children receive small portions or leftovers. Fruits are mostly consumed by children and elderly people. Taboos related to forbidden foods relate mostly to wild animal sourced protein. Poor hygiene practices (inadequate hand washing) before eating were found.

Conclusion : This study provides a good base for planning larger, quantitative studies for which it could serve as a guide.

DAP 5 :
Risques environnementaux et sanitaires

L'évaluation de la complexité de l'interface 'Homme, Environnement, Santé' dans un contexte d'urbanisation accélérée, de pression démographique et des variabilités climatiques nécessite des approches innovantes impliquant des méthodes inter- et transdisciplinaires. Nous voulons apporter ici des réponses durables et adaptées à cette thématique, conformément aux Objectifs du Développement Durable pour 2030. Une telle investigation associe entre autres des approches qualitatives, la microbiologie, la physico-chimie et la modélisation des systèmes. Les résultats attendus portent sur la réduction des vulnérabilités des populations aux chocs liés aux changements globaux et l'apport d'informations scientifiques viables sur les facteurs de risques aux décideurs.

1 Article scientifique dans 1 journal avec 1 contributeur du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

ENVIRONMENTAL HEALTH RESEARCH CHALLENGES IN AFRICA

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Journal : Environmental Epidemiology
Année : 2019
Volume : 6
Numéro : 3
Page : 74

Télécharger

Abstract

Africa presents research challenges and opportunities for environmental health researchers. The African population is increasing rapidly with a rapid urban growth1, an increasing industrialization, a higher adoption of a wide variety of technologies and health interventions (e.g. more cars on one hand and higher vaccination rates on the other) and an intensive exploitation of environmental resources. Consequently, African countries are undergoing an epidemiologic transition from high endemic prevalence of communicable diseases to a double burden led by non-communicable diseases followed by communicable diseases. According to the United Nation1 by 2070, the bulk of the world's population growth is predicted to take place in Africa. Of the additional 2.4 billion people projected between 2015 and 2050, 1.3 billion will be added in Africa. This transition presents increased health risks for Africans from increased use of pesticides, more exposure to heavy metals, and higher concentrations of other pollutants from cities.2–4 Further, climate change is affecting the burdens of climate-sensitive health outcomes. Climate change projections and synergistic effects of heavy metals and pesticides pollutions suggest an increase of health risk in the coming decades without additional interventions,5,6 in a global African context of weak availability of reliable/precise data on burden of health problems attributed to environmental health hazards.4 Africans are particularly vulnerable to these risks,7–9 mainly due to weak institutional, technical, and financial capacities of African countries to cope with the risks compared with developed countries.

DAP 6
Santé humaine et santé animale

Depuis plusieurs décennies, la croissance démographique, les mouvements migratoires, l'urbanisation, les besoins alimentaires sont des défis à relever dans les contextes en pleine mutation des pays en développement. Les dégradations de l'environnement transforment le milieu et occasionnent un rapprochement entre les populations humaines et animales. Ces contextes épidémiogènes sont favorables aux maladies infectieuses et non-infectieuses dont 70% sont à caractère zoonotique. Nous visons ici le renforcement de la lutte intégrée contre les maladies à l'interface Homme- Animaux-Ecosystème et palier les conséquences économiques et sociales qui en découlent. Cela nécessite une approche holistique, transdisciplinaire et multisectorielle telle que préconisé par le concept "One Health" et une synergie entre la médecine humaine et la médecine vétérinaire. Les acquis de ces recherches serviront aux décideurs et acteurs de développement pour la mise en oeuvre de programmes de surveillance sanitaire et au renforcement durable du système de santé.

23 Articles scientifiques dans 23 journaux avec 23 contributeurs du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

Photo : Jeunes adolescents en plein échange, Sud de la Côte d'Ivoire | **Crédits photo :** Christian Heuss

HIGH PREVALENCE OF SCHISTOSOMA HAEMATOBIUM X SCHISTOSOMA BOVIS HYBRIDS IN SCHOOLCHILDREN IN COTE D'IVOIRE

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Journal : Parasitology
Année : 2019
Volume : 15
Page : 1-25

Télécharger

Abstract

Schistosomiasis is a neglected tropical disease, though it is highly prevalent in many parts of sub-Saharan Africa. While Schistosoma haematobium-bovis hybrids have been reported in West Africa, no data about Schistosoma hybrids in humans are available from Côte d'Ivoire. This study aimed to identify and quantify S. haematobium-bovis hybrids among schoolchildren in four localities of Côte d'Ivoire. Urine samples were collected and examined by filtration to detect Schistosoma eggs. Eggs were hatched and 503 miracidia were individually collected and stored on Whatman® FTA cards for molecular analysis. Individual miracidia were molecularly characterized by analysis of mitochondrial cox1 and nuclear internal transcribed spacer 2 (ITS 2) DNA regions. A mitochondrial cox1-based diagnostic polymerase chain reaction was performed on 459 miracidia, with 239 (52.1%) exhibiting the typical band for S. haematobium and 220 (47.9%) the S. bovis band. The cox1 and ITS 2 amplicons were Sanger sequenced from 40 randomly selected miracidia to confirm species and hybrids status. Among the 33 cox1 sequences analysed, we identified 15 S. haematobium sequences (45.5%) belonging to seven haplotypes and 18 S. bovis sequences (54.5%) belonging to 12 haplotypes. Of 40 ITS 2 sequences analysed, 31 (77.5%) were assigned to pure S. haematobium, four (10.0%) to pure S. bovis and five (12.5%) to S. haematobium-bovis hybrids. Our findings suggest that S. haematobium-bovis hybrids are common in Côte d'Ivoire. Hence, intense prospection of domestic and wild animals is warranted to determine whether zoonotic transmission occurs.

PREVALENCE AND RISK FACTORS FOR SCHISTOSOMIASIS AMONG SCHOOLCHILDREN IN TWO SETTINGS OF COTE D'IVOIRE.

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Journal : Trop Med Infect Dis
Année : 2019
Volume : 4
Numéro : 3
Page : 110

Télécharger

Abstract

Schistosomiasis is a parasitic disease affecting more than 250 million people, primarily in sub-Saharan Africa. In Côte d'Ivoire both Schistosoma haematobium (causing urogenital schistosomiasis) and Schistosoma mansoni (causing intestinal schistosomiasis) co-exist. This study aimed to determine the prevalence of S. haematobium and S. mansoni and to identify risk factors among schoolchildren in the western and southern parts of Côte d'Ivoire. From January to April 2018, a cross-sectional study was carried out including 1187 schoolchildren aged 5-14 years. Urine samples were examined by a filtration method to identify and count S. haematobium eggs, while stool samples were subjected to duplicate Kato-Katz thick smears to quantify eggs of S. mansoni and soil-transmitted helminths. Data on sociodemographic, socioeconomic, and environmental factors were obtained using a pretested questionnaire. Multivariate logistic regression was employed to test for associations between variables. We found a prevalence of S. haematobium of 14.0% (166 of 1187 schoolchildren infected) and a prevalence of S. mansoni of 6.1% (66 of 1089 schoolchildren infected). In the southern part of Côte d'Ivoire, the prevalence of S. haematobium was 16.1% with a particularly high prevalence observed in Sikensi (35.6%), while S. mansoni was most prevalent in Agboville (11.2%). Swimming in open freshwater bodies was the main risk factor for S. haematobium infection (adjusted odds ratio (AOR) = 127.0, 95% confidence interval (CI): 25.0-634.0, $p < 0.001$). Fishing and washing clothes in open freshwater bodies were positively associated with S. haematobium and S. mansoni infection, respectively. Preventive chemotherapy using praziquantel should be combined with setting-specific information, education, and communication strategies in order to change children's behavior, thus avoiding contact with unprotected open freshwater.

UNFINISHED ONE HEALTH AGENDA IN AFRICA

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Journal : The african Academy of Sciences
Année : 2019
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Télécharger

Abstract

Objectives: The One Health (OH) concept has become an integral part of an effective health system policy, planning and intervention since the last series of emerging diseases (e.g. SARS, Influenza and Ebola). At different levels, the concept has become a guiding health policy, at least in theory. Our objective is to take shock of how the OH concept has been picked up in Africa and to identify gaps in implementing it.
Methods: We reviewed the OH literature of the last decade, participated in different fora for targeting research,intervention, policy design on selected diseases in the frame of the global health security agenda. We conducted a gap analysis to identify ways to improve the implementation using the OH monitoring and evaluation tool.
Results: The majority of health stakeholders claim and embraced the concept, which at first is a good sign for raising awareness about the need for collaboration between disciplines and sectors to create an added value for health. However, our results show that OH has become a buzz-word. But most stakeholders are not acquainted
with collaboration and engagement culture to implement the concept. Nevertheless, great political engagements can be observed at the higher scale of the health pyramid.
Our analysis revealed limited iterative dialog with field workers and gaps in the area of knowledge co-production.
The main challenges are leadership claims at the onset of collaboration. We also observed slow pace of operationalization due to insufficient resources allocation and share. Many OH initiatives focus mainly on infectious emerging diseases without considering other determinants of health.
Conclusions: The case studies provide the potential and unfinished agenda of OH in Africa and show how the emerging knowledge can shape the global health. We also show the usefulness of economic analyses for motivation and behavior change in public and animal health.

EFFICACY AND SAFETY OF ASCENDING DOSAGES OF TRIBENDIMIDINE AGAINST HOOKWORM INFECTIONS IN CHILDREN: A RANDOMIZED CONTROLLED TRIAL.

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Journal : TClin Infect Dis
Année : 2019
Volume : 69
Numéro : 5
Pages : 845-852

Télécharger

Abstract

BACKGROUND:
The global strategy to control soil-transmitted helminthiasis is mainly focused on preventive chemotherapy with albendazole and mebendazole. We assessed the efficacy and safety of ascending tribendimidine doses against hookworm infections in African school-aged children, key information for the development of tribendimidine.
METHODS:
We performed a single blind, randomized, controlled trial in Côte d'Ivoire between June and August 2017. Eligible participants were randomly assigned to placebo, 100, 200, or 400 mg tribendimidine. Cure rates (CRs, primary outcome) and egg reduction rates (ERRs) were determined 14-21 days after treatment. Clinical symptoms were assessed before treatment and adverse events monitored 3 and 24 hours posttreatment.
RESULTS:
CRs calculated for 130 children dose-dependently increased. The observed CRs were 20.6% (7/34), 21.2% (7/33), 38.7% (12/31), and 53.1% (17/32) for placebo, 100, 200, and 400 mg of tribendimidine, respectively. The Emax model predicted a placebo corrected net effect of 34.3 percentage points (95% confidence interval [CI], 13.3-54.4) for the 400-mg tribendimidine dose. The ERRs (geometric mean) were 30.6% (95% CI, -24.7 to 64.1), 65.4% (95% CI, 24.5-85.9), 82.1% (95% CI, 58.4-92.5) and 92.2% (95% CI, 81.0-97.1) for placebo, 100, 200, and 400 mg tribendimidine, respectively. The Emax model predicted an ERR of 95% at 500 mg. Only mild adverse events and no abnormal biochemical parameters were observed.
CONCLUSION:
A 400-mg dose of tribendimidine yielded the highest efficacy and was well tolerated. Because children were mostly lightly infected, further investigations with tribendimidine against moderate/heavy hookworm infection are needed

PHARMACOKINETICS, SAFETY, AND EFFICACY OF A SINGLE CO-ADMINISTERED DOSE OF DIETHYLCARBAMAZINE, ALBENDAZOLE AND IVERMECTIN IN ADULTS WITH AND WITHOUT WUCHERERIA BANCROFTI INFECTION IN COTE D'IVOIRE.

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Journal : PLoS Negl Trop Dis
Année : 2019
Volume : 13
Numéro : 5
Pages : 0007325

Télécharger

Abstract

BACKGROUND:
A single co-administered dose of ivermectin (IVM) plus diethylcarbamazine (DEC) plus albendazole (ALB), or triple-drug therapy, was recently found to be more effective for clearing microfilariae (Mf) than standard DEC plus ALB currently used for mass drug administration programs for lymphatic filariasis (LF) outside of sub-Saharan Africa. Triple-drug therapy has not been previously tested in LF-uninfected individuals from Africa. This study evaluated the pharmacokinetics (PK), safety, and efficacy of triple-drug therapy in people with and without Wuchereria bancrofti infection in West Africa.

METHODS:
In this open-label cohort study, treatment-naïve microfilaremic (>50 mf/mL, n = 32) and uninfected (circulating filarial antigen negative, n = 24) adults residing in Agboville district, Côte d'Ivoire, were treated with a single dose of IVM plus DEC plus ALB, and evaluated for adverse events (AEs) until 7 days post treatment. Drug levels were assessed by liquid chromatography and mass spectrometry. Persons responsible for assessing AEs were blinded to participants' infection status.

FINDINGS:
There was no difference in AUC0-inf or Cmax between LF-infected and uninfected participants (P>0.05 for all comparisons). All subjects experienced mild AEs; 28% and 25% of infected and uninfected participants experienced grade 2 AEs, respectively. There were no severe or serious adverse events. Only fever (16 of 32 versus 4 of 24, P<0.001) and scrotal pain/swelling in males (6 of 20 versus 0 of 12, P = 0.025) were more frequent in infected than uninfected participants. All LF positive participants were amicrofilaremic at 7 days post-treatment and 27 of 31 (87%) remained amicrofilaremic 12 months after treatment.

CONCLUSIONS:
Moderate to heavy W. bancrofti infection did not affect PK parameters for IVM, DEC or ALB following a single co-administered dose of these drugs compared to uninfected individuals. The drugs were well tolerated. This study confirmed the efficacy of the triple-drug therapy for clearing W. bancrofti Mf and has added important information to support the use of this regimen in LF elimination programs in areas of Africa without co-endemic onchocerciasis or loiasis.

ASYMPTOMATIC PLASMODIUM INFECTION AND GLYCEMIC CONTROL IN ADULTS: RESULTS FROM A POPULATION-BASED SURVEY IN SOUTH-CENTRAL COTE D'IVOIRE.

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Journal : Diabetes Res Clin Pract
Année : 2019
Volume : 156
Numéro : 1
Pages : 107845

Télécharger

Abstract

AIMS:
We investigated the cross-sectional associations of Plasmodium infection (PI) with fasting glucose (FG) and glycated hemoglobin (HbA1c) in malaria-endemic south-central Côte d'Ivoire.
METHODS:
We studied 979 participants (non-pregnant; no treated diabetes; 51% males; 18-87 years) of the Côte d'Ivoire Dual Burden of Disease study. Fasting venous blood was obtained for PI, FG, and HbA1c assessment. We defined PI as a positive malaria rapid diagnostic test (RDT) or microscopic identification of Plasmodium species. We applied multivariable linear regressions to assess beta coefficients ( ) and 95% confidence intervals (CIs) of PI positivity for FG and HbA1c independent of diabetes risk factors.
RESULTS:
Prevalence of PI was 10.1% (5.5% microscopy; 9.7% RDT) without clinical fever. Prevalence of FG-based prediabetes (45.8%) and diabetes (3.6%) were considerably higher than HbA1c-based values (2.7% and 0.7%, respectively). PI was independently associated with FG among participants with higher body temperature (0.34, 95% CI 0.06-0.63, pheterogeneity = 0.028), or family history of diabetes (0.88, 95% CI 0.28-1.47, pheterogeneity = 0.009). Similar patterns observed with HbA1c were obliterated on accounting for FG. We also observed consistent associations with parasite density.
CONCLUSIONS:
FG-based diabetes diagnosis in the presence of asymptomatic PI may misclassify or overestimate diabetes burden in malaria-endemic settings. Longitudinal studies are needed to confirm these findings and determine the risk for diabetes.

EVALUATION OF THE FLUORESCENCE POLARIZATION ASSAY AS A RAPID ON-SPOT TEST FOR RUMINANT BRUCELLOSIS IN COTE D'IVOIRE.

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Journal : Front Vet Sci
Année : 2019
Volume : 6
Numéro : 1
Page : 287

Télécharger

Abstract

Brucellosis is a zoonosis of economic and public health concern. While most diagnostic tests for brucellosis can only be performed in the laboratory, the Fluorescence Polarization Assay (FPA) was developed as a rapid point-of-care field test. This pilot project aimed to validate the use of FPA for rapid diagnosis of ruminant brucellosis on the field, and to compare the FPA performance with that of the more commonly used Rose Bengal Test (RBT). Blood samples were first collected from ruminants in a livestock market, and later from a nearby slaughterhouse in Port Bouët, Abidjan, Côte d'Ivoire. Samples collected in the livestock market were processed and tested with the FPA in a central laboratory, while samples collected in the slaughterhouse were processed immediately and the FPA was performed on site. To assess the FPA intra-test agreement, a portion of the serum samples tested at the slaughterhouse were re-tested with the FPA in the laboratory later the same day. To assess inter-test agreement, all serum samples were retested with the RBT. A total of 232 samples were tested with the FPA, 106 and 126 from the livestock market and slaughterhouse, respectively. Of these, 26 tested positive and 39 were doubtful for brucellosis. The FPA was repeated on 28 of the samples collected at the slaughterhouse, and comparison of results indicated a moderate intra-test agreement (Kappa = 0.41). The agreement improved when the doubtful category was treated as negative (Kappa = 0.65), and when cattle were excluded (Kappa = 0.56 to 0.61). The RBT was performed on 229 samples, and of these 10 tested positive. A comparison of FPA and RBT results indicated poor agreement (Kappa = 0.00); this improved to slight when only samples taken at the livestock market and tested in the laboratory were considered (Kappa = 0.14). The FPA did not perform well in tropical field conditions, possibly due to the high ambient temperatures in the slaughterhouse. Moreover, a difference in performance was noted in relation to the species tested, whereby the FPA seemed to perform better on sheep and goat samples, compared to cattle samples. These findings highlight that further adjustments are needed before implementing the FPA on the field.

RISK FACTORS FOR THE CARRIAGE OF STREPTOCOCCUS INFANTARIUS SUBSPECIES INFANTARIUS ISOLATED FROM AFRICAN FERMENTED DAIRY PRODUCTS.

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Journal : PLoS One
Année : 2019
Volume : 14
Numéro : 11
Page : 0225452

Télécharger

Abstract

Streptococcus infantarius subsp. infantarius (Sii) has been identified as predominant lactic acid bacteria in spontaneously fermented dairy products (FDPs) in sub-Saharan Africa including Côte d'Ivoire. However, Sii belongs to the Streptococcus bovis/Streptococcus equinus complex (SBSEC). Most SBSEC members are assumed to be involved as opportunistic pathogens in serious diseases in both humans and animals. A population-based cross-sectional survey, including 385 participants was conducted in Korhogo, northern Côte d'Ivoire, to identify risk factors for Sii fecal carriage, including consumption of local FDPs. A structured questionnaire was used to gather participant's socio-demographic and economic characteristics, their relation to livestock and dietary habits. In addition, fresh stool and milk samples were collected. The identification of Sii was done using a SBSEC-specific PCR assay targeting 16S rRNA and groEL genes. The overall prevalence of SBSEC and Sii carriage was 23.2% (confidence interval CI 95% = 18.9-27.5) and 12.0% (CI 95% = 8.4-15.5) for stool, respectively. Prevalence of Sii was significantly higher in consumers of artisanal butter compared with non-consumers (57.1% vs 10.1%, odds ratio OR: 11.9, 95% CI: 3.9-36.6), as well as in persons handling livestock (OR = 3.9; 95% CI = 1.6-9.3) and livestock primary products (OR = 5.7; 95% CI = 2.3-14.3). The closer contact with livestock was a risk factor for Sii fecal carriage. Sii strains were isolated from fresh and fermented milk products with a prevalence of 30.4% and 45.4%, respectively. Analysis of Sii population structure through the SBSEC multi locus sequence typing assay revealed a close relationship across human and dairy isolates, possibly linked to a Kenyan human isolate. All these outcomes underline the interest of in-depth investigations on the ecology, potential reservoirs and pathways of contamination by Sii at the human-animal-environment interface in comparison to yet to be collected data from Europe, Asia and the Americas to further elucidate the various roles of Sii.

EXPANSION OF AEDES AFRICANUS (DIPTERA: CULICIDAE), A SYLVATIC VECTOR OF ARBOVIRUSES, INTO AN URBAN ENVIRONMENT OF ABIDJAN, CÔTE D'IVOIRE.

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Journal : Journal of Vector Ecology
Année : 2019
Volume : 44
Numéro : 2
Page : 248-255

Télécharger

Abstract

In 2008, an outbreak of yellow fever occurred in Abidjan. The entomological investigations confirm that Abidjan
is at risk of yellow fever with a suspicion of the National Park of Banco (NPB) forest as a likely area of re-emergence. This study aims to assess the dispersion of sylvatic vectors of arboviruses from the NPB forest to the surrounding areas (Andokoi
and Sagbé). The sampling was done in the rainy season using the WHO layer-traps technique. Among the six species of Aedes sampled, Aedes aegypti and Aedes africanus were the potential vectors of arboviruses. Both species were collected in Sagbé but
only Ae. aegypti in Andokoi. Only Ae. aegypti were present 400 and 800 m from NPB forest, but at 200 m, it showed respective proportions of 75.5% and 87.5% in Sagbé and Andokoi. In the NPB forest, however, Ae. africanus has been the predominant
species. The study showed the presence of Ae. aegypti in Andokoi and Sagbé. However, Ae. africanus was found in the NPB forest and in the 200 m radius in Sagbé. The establishment of an entomological surveillance program in all areas would therefore be essential for the prevention of arboviruses outbreaks in Abidjan.

IMPACT OF ANTHROPOGENIC ACTIVITIES AND CLIMATE VARIABILITYON THE EPIDEMIOLOGY OF MALARIA AND BILHARZIASIS IN KAEDI (MAURITANIA)

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Journal : Environmental Epidemiology
Année : 2019
Volume : 44
Numéro : 2
Page : 215

Télécharger

Abstract

TPS 662 : Climate change effects on labour, migration and infections, Exhibition Hall, Ground floor, August 28, 2019, 3:00 PM - 4:30 PM Malaria and bilharziasis are two vector-borne diseases that contribute significantly to the burden of disease in Africa. In Mauritania, while Malaria is epidemic, bilharziasis are more endemic, mainly in the southern part of the country. Understanding the anthropogenic and environmental factors affecting the epidemiology of the two diseases may lead
to better control strategies.
We assessed the impact of human activities and climate variability on the distribution of vectors and intermediate hosts of malaria and bilharziasis respectively, and their prevalence in Kaedi, located in southern Mauritania, along the Senegal River. Malacological and entomological cross sectional survey were conducted in rainy (September 2014) and
dry (May 2015) seasons and during rice cultivation period (October-December 2015). The numbers of Malaria and Bilharziasis cases recorded at the main hospital of the city during the same periods were recorded. Recorded Malaria cases were 55, 20, 98 and 89 respectively during September 2014, May 2015, October 2015 and December 2015. The number of anopheles collected during the same months were respectively 15, 8, 984 and 120. For intestinal and urinary bilharziasis cases 2, 5, 12 and 6 were recorded. Among 157, 158, 481 and 487 molluscks collected during the respective periods, Bulinus forskalii, Bulinus truncatus and Bulinus senegalensis were intermediate host of Bilharziasis. Rice cultivation period appear to be the most at risk of Malaria and Bilharziasis due to irrigation and paddy areas. However more awareness on Sanitation and Hygiene is also needed to control and prevent the proliferation of vectors and intermediate hosts and thereby limit transmission.

PERSISTENT HOT SPOTS IN SCHISTOSOMIASIS CONSORTIUM FOR OPERATIONAL RESEARCH AND EVALUATION STUDIES FOR GAINING AND SUSTAINING CONTROL OF SCHISTOSOMIASIS AFTER FOUR YEARS OF MASS DRUG ADMINISTRATION OF PRAZIQUANTEL.

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Journal : Am J Trop Med Hyg
Année : 2019
Volume : 101
Numéro : 2
Pages : 617-627

Télécharger

Abstract

Control of schistosomiasis presently relies largely on preventive chemotherapy with praziquantel through mass drug administration (MDA) programs. The Schistosomiasis Consortium for Operational Research and Evaluation has concluded five studies in four countries (Cote d'Ivoire, Kenya, Mozambique, and Tanzania) to evaluate alternative approaches to MDA. Studies involved four intervention years, with final evaluation in the fifth year. Mass drug administration given annually or twice over 4 years reduced average prevalence and intensity of schistosome infections, but not all villages that were treated in the same way responded similarly. There are multiple ways by which responsiveness to MDA, or the lack thereof, could be measured. In the analyses presented here, we defined persistent hot spots (PHSs) as villages that achieved less than 35% reduction in prevalence and/or less than 50% reduction in infection intensity after 4 years of either school-based or community-wide MDA, either annually or twice in 4 years. By this definition, at least 30% of villages in each of the five studies were PHSs. We found no consistent relationship between PHSs and the type or frequency of intervention, adequacy of reported MDA coverage, and prevalence or intensity of infection at baseline. New research is warranted to identify PHSs after just one or a few rounds of MDA, and new adaptive strategies need to be advanced and validated for turning PHSs into responder villages.

NUTRITIONAL APPROACH TO MANAGEMENT OF BURULI ULCER IN COTE D'IVOIRE.

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Journal : Med Sante Trop
Année : 2019
Volume : 29
Numéro : 4
Pages : 409-414

Télécharger

Abstract

Children in developing tropical countries are frequently undernourished. In rural areas, they are also often affected by Buruli ulcers. The treatment of this mutilating disease is sometime long and difficult for malnourished patients. Moreover, the eating behavior of patients with Buruli ulcers does not promote its quick healing, with numerous foods prohibited. They eat fewer fruits and legumes, which are rich in vitamins and minerals. Our survey in two health centers showed that only 8% ate fruits and legumes, and 29% leafy greens. This food deprivation increases their nutritional deficiencies. We conducted a nutritional intervention among Buruli ulcer patients (30 patients) in one center, and compared their healing with that of Buruli patients without nutritional care (n = 21). Those patients who received the intervention spent less time at the hospital (less than six months). Our study shows the association between the healing of Buruli ulcers in Côte d'Ivoire and good nutritional status: those with the intervention healed faster and presented fewer disabilities than the control patients.

HECKMAN-TYPE SELECTION MODELS TO OBTAIN UNBIASED ESTIMATES WITH MISSING MEASURES OUTCOME: THEORETICAL CONSIDERATIONS AND AN APPLICATION TO MISSING BIRTH WEIGHT DATA.

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Journal : BMC Med Res Methodol
Année : 2019
Volume : 19
Numéro : 1
Pages : 231

Télécharger

Abstract

BACKGROUND:
In low-income settings, key outcomes such as biomarkers or clinical assessments are often missing for a substantial proportion of the study population. The aim of this study was to assess the extent to which Heckman-type selection models can create unbiased estimates in such settings.
METHODS:
We introduce the basic Heckman model in a first stage, and then use simulation models to compare the performance of the model to alternative approaches used in the literature for missing outcome data, including complete case analysis (CCA), multiple imputations by chained equations (MICE) and pattern imputation with delta adjustment (PIDA). Last, we use a large population-representative data set on antenatal supplementation (AS) and birth outcomes from Côte d'Ivoire to illustrate the empirical relevance of this method.
RESULTS:
All models performed well when data were missing at random. When missingness in the outcome data was related to unobserved determinants of the outcome, large and systematic biases were found for CCA and MICE, while Heckman-style selection models yielded unbiased estimates. Using Heckman-type selection models to correct for missingness in our empirical application, we found supplementation effect sizes that were very close to those reported in the most recent systematic review of clinical AS trials.
CONCLUSION:
Missingness in health outcome can lead to substantial bias. Heckman-selection models can correct for this selection bias and yield unbiased estimates, even when the proportion of missing data is substantial.

DESIGN AND VALIDATION OF A WIDE-FIELD MOBILE PHONE MICROSCOPE FOR THE DIAGNOSIS OF SCHISTOSOMIASIS.

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Journal : Travel Med Infect Dis
Année : 2019
Volume : 30
Pages : 128-129

Télécharger

Abstract

Schistosomiasis is a Neglected Tropical Disease that affects over 200 million people worldwide, with children, and the impoverished living in rural African communities disproportionately affected [1,2]. Schistosomiasis is also a diagnosis occasionally seen in returned travellers, and in particular, adventure travellers [3]. Chronic infection with S. mansoni and S. haematobium leads to significant gastrointestinal or genitourinary pathology, respectively [1,2].

The diagnosis of S. haematobium and S. mansoni typically involves detecting parasite eggs in urine or faeces, respectively. Conventional light microscopy is the most common diagnostic technique, however laboratory infrastructure, qualified laboratory technicians, and permanent energy sources are limited in many schistosomiasis-endemic regions, making microscopy unavailable to most affected communities [4]. Here we present images of S. haematobium and S. mansoni eggs captured by a novel, smartphone-based microscope designed with a wide field of view, during an epidemiologic survey in the Azaguié region of southern Côte d'Ivoire.

PREVALENCE OF ENDOPARASITIC MITES ON FOUR WEST AFRICAN LEAF-ITTER FROGS DEPENDS ON HABITAT HUMIDITY

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Journal : Biotropica
Année : 2019
Volume : 51
Numéro : 3
Pages : 432-442

Télécharger

Abstract

Amphibian species are known to carry endoparasitic mites. The infestation probability, prevalence, and intensity of mites vary among species and habitats. Mites of the genus Endotrombicula are known to infest African and Malagasy frogs. However, the factors leading to an increase in the probability of mite infestation are unknown. To test for inter-and intraspecific differences in infestation probability and its potential correlation with sex, age, habitat preferences, and/or season within a species-rich West African leaf-litter frog assemblage, we examined more than 6,800 individual frogs for the presence of mites throughout two independent time increments, 1999– 2000 and 2016–2017. We found only members of the leaf-litter frog genus Phyrnobatrachus to be infested, while other syntopically occurring genera were not affected. Within Phrynobatrachus, only four out of eight species were infested. Mites prevalence differed between species (highest P. phyllophilus, followed by P. alleni), sex (males higher than females in P. alleni and P. phyllophilus), and age (adults higher than juveniles in P. alleni), as well as season (more mites during wet than dry season in P. phyllophilus). The prevalence of mite infestation did not influence mate choice in P. alleni. Increased humidity showed a clear positive effect on infestation prevalence. We also detected a marked decrease in the prevalence of mites from 1999–2000 to 2016–2017, a period during which climatological changes within the study area have been reported with a tendency toward drier conditions. The decrease in mite infestation prevalence over time might be a signal of increasingly drier conditions. Abstract in French is available with online material.

PREVALENCE, INTENSITY OF SOIL-TRANSMITTED HELMINTHS, AND FACTORS ASSOCIATED WITH INFECTION: IMPORTANCE IN CONTROL PROGRAM WITH IVERMECTIN AND ALBENDAZOLE IN EASTERN CÔTE D'IVOIRE

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Journal : J Trop Med
Année : 2019
Volume :
Numéro : 1
Pages : 7658594

Télécharger

Abstract

Evaluation of soil-transmitted helminths (STHs) and implementation of additional interventions are required in the region of a filariasis control program, given that antifilariasis drugs also have a beneficial effect on STHs. Thus, this study determines the extensive epidemiology of STHs to improve their successful control. Stool samples were analyzed using the Kato-Katz method. Chi-squared and Kruskal-Wallis tests were used to measure differences in infection rates and intensities, respectively, and logistic regression identified the risks of infection. The main intestinal helminths (A. lumbricoides, hookworm [N. americanus], S. mansoni, and T. trichiura) were found in the population. The overall prevalence of STHs was 19.5%. The prevalence of hookworm, the predominant species, ranged from 2% (n=6) to 28% (n=97). The overall prevalence of the other intestinal helminths was less than 6% (n=18). Intensity of hookworm was mostly light with a range from 1.6% (n=5) to 25.9% (n=90). However, the intensity of the species was significantly greater in Soribadougou compared to the other localities. Heavy infection was found in old children and adults but not in young children. Open defecation (OR=3.23, $p \leq 0.05$), dog/cat raising (OR=1.94, $p \leq 0.05$), farming (OR=14.10, $p \leq 0.05$), and irrigated culture (OR=3.23, $p \leq 0.05$) were positively associated with hookworm. It was observed that the participants missed the follow-up examinations due to trip (32.7%) or misunderstanding (15%) and lack of information (11.8%) of the purpose of the survey. Thus, to sustain the control of STHs, the MDA program should target the entire community and add education about the use of toilets, best practices of farming, and dog/cat raising.

STATE OF DEWORMING COVERAGE AND EQUITY IN LOW-INCOME AND MIDDLE-INCOME COUNTRIES USING HOUSEHOLD HEALTH SURVEYS: A SPATIOTEMPORAL CROSS-SECTIONAL STUDY

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Journal : The Lancet Global Health
Année : 2019
Volume : 7
Numéro : 11
Pages : 1511-1520

Télécharger

Abstract

Background Mass deworming against soil-transmitted helminthiasis, which affects 1 billion of the poorest people globally, is one of the largest public health programmes for neglected tropical diseases, and is intended to be equitable.
However, the extent to which treatment programmes for deworming achieve equitable coverage across wealth class and sex is unclear and the public health metric of national deworming coverage does not include representation of equity. This study aims to measure both coverage and equity in global, national, and subnational deworming to guide
future programmatic evaluation, investment, and metric design.
Methods We used nationally representative, geospatial, household data from Demographic and Health Surveys that measured mother-reported deworming in children of preschool age (12–59 months). Deworming was defined as
children having received drugs for intestinal parasites in the previous 6 months before the survey. We estimated deworming coverage disaggregated by geography, wealth quintile, and sex, and computed an equity index. We examined trends in coverage and equity index across countries, within countries, and over time. We used a regression
model to compute the household correlates of deworming and ecological correlates of equitable deworming.
Findings Our study included 820 883 children living in 50 countries from Africa, the Americas, Asia, and Europe that are endemic for soil-transmitted helminthiasis using 77 Demographic and Health Surveys from December, 2003, to October, 2017. In these countries, the mean deworming coverage in preschool children was estimated at 33·0% (95% CI 32·9–33·1). The subnational coverage ranged from 0·5% to 87·5%, and within-country variation was greater than between-country variation. Of the 31 countries reporting that they reached the WHO goal of more than 75% national coverage, 30 had inequity in deworming, with treatment concentrated in wealthier populations. We did not detect
systematic differences in deworming equity by sex.
Interpretation Substantial inequities in mass deworming programmes are common as wealthier populations have consistently higher coverage than that of the poor, including in countries reporting to have reached the WHO goal of more than 75% national coverage. These inequities seem to be geographically heterogeneous, modestly improving
over time, with no evidence of sex differences in inequity. Future reporting of deworming coverage should consider disaggregation by geography, wealth, and sex with incorporation of an equity index to complement the conventional public health metric of national deworming coverage.

EVIDENCE OF INSECTICIDE RESISTANCE SELECTION IN WILD ANOPHELES COLUZZII MOSQUITOES DUE TO AGRICULTURAL PESTICIDE USE

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Journal : Infect Dis Poverty
Année : 2019
Volume : 8
Numéro : 1

Télécharger

Abstract

BACKGROUND:
The wetlands used for some agricultural activities constitute productive breeding sites for many mosquito species. Thus, the agricultural use of insecticide targeting other pests may select for insecticide resistance in malaria mosquitoes. The purpose of this study is to clarify some knowledge gaps on the role of agrochemicals in the development of insecticide resistance in malaria vectors is of utmost importance for vector control.
METHODS:
Using the CDC bottle test and the log-probit analysis, we investigated for the first time the resistance levels of Anopheles coluzzii mosquitoes to neonicotinoids, insecticides used exclusively for crop protection in Côte d'Ivoire. The study was conducted in two agricultural regions (Tiassale and Gagnoa) and one non-agricultural region (Vitre) between June and August 2017 using clothianidin, acetamiprid and imidacloprid.
RESULTS:
Mosquito populations from Tiassale and Gagnoa (agricultural settings) were determined to be resistant to acetamiprid with mortality rates being < 85% at 24 h post-exposure. In Vitre (non-agricultural area) however, the mosquito population was susceptible to acetamiprid. In all three localities, mosquito populations were resistant to imidacloprid (mortality rates were 60% in Vitre, 37% in Tiassale, and 13% in Gagnoa) and completely susceptible to clothianidin (100% mortality). An. coluzzii represented 100% of mosquito collected in Gagnoa, 86% in Tiassale and 96% in Vitre.
CONCLUSIONS:
This study provides strong evidence that agricultural use of insecticides can cause insecticide resistance in malaria vector populations. Insecticide resistance driven by agrochemical usage should be considered when vector control strategies are developed.

ANALYSIS-READY DATASETS FOR INSECTICIDE RESISTANCE PHENOTYPE AND GENOTYPE FREQUENCY IN AFRICAN MALARIA VECTORS.

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Journal : Sci Data
Année : 2019
Volume : 6
Numéro : 1
Page : 121

Télécharger

Abstract

The impact of insecticide resistance in malaria vectors is poorly understood and quantified. Here a series of geospatial datasets for insecticide resistance in malaria vectors are provided, so that trends in resistance in time and space can be quantified, and the impact of resistance found in wild populations on malaria transmission in Africa can be assessed. Specifically, data have been collated and geopositioned for the prevalence of insecticide resistance, as measured by standard bioassays, in representative samples of individual species or species complexes. Data are provided for the Anopheles gambiae species complex, the Anopheles funestus subgroup, and for nine individual vector species. Data are also given for common genetic markers of resistance to support analyses of whether these markers can improve the ability to monitor resistance in low resource settings. Allele frequencies for known resistance-associated markers in the Voltage-gated sodium channel (Vgsc) are provided. In total, eight analysis-ready, standardised, geopositioned datasets encompassing over 20,000 African mosquito collections between 1957 and 2017 are released.

EVALUATION OF THE CLINITEK(R), A POINT-OF-CARE URINALYSIS SYSTEM FOR THE MEASUREMENT OF CLINICALLY SIGNIFICANT URINARY METABOLITES AND DETECTION OF HAEMATURIA IN SCHISTOSOMA HAEMATOBIUM INFECTED CHILDREN IN SOUTHERN COTE D'IVOIRE.

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Journal : Parasit Vectors
Année : 2019
Volume : 12
Page : 298

Télécharger

Abstract

BACKGROUND:
Urinary schistosomiasis, caused by Schistosoma haematobium, remains a significant public health problem worldwide, despite years of efforts to control it. Haematuria is one of the notable indirect indicators of S. haematobium infection and is commonly assessed along with other routine screens using a urinary dipstick test. A portable "field friendly" electronic analyser would offer an automated and thus more objective read-out compared to visual-read dipstick methods.
METHODS:
Within the framework of a Phase 2 praziquantel dose finding study in preschool- and school-aged children infected with S. haematobium, in southern Côte d'Ivoire, we compared a visual-read of the urine dipstick strips (Multistix PRO, Siemens Healthcare Diagnostics) to an automated reader (CLINITEK Status+ analyser™ Siemens Healthcare Diagnostics). Urine samples were collected from 148 pre-school aged and 152 school-aged children for urinalysis. Values were compared using a linear weighted kappa statistic and Bland-Altman analysis.
RESULTS:
A very good correlation between the two methods for nitrites and haematuria was observed (coefficient of 0.88 and 0.82, respectively), while a good correlation was observed for leukocytes (coefficient of 0.63) A moderate to fair correlation was calculated (coefficient ≤ 0.6) for all other parameters. When the results were stratified according to infection intensity, the agreements were stronger from the high infection intensity sample measurements, for most of the parameters.
CONCLUSION:
Our results demonstrate the device's utility in detecting haematuria and nitrites but underline the need for further development of this tool in order to improve its.

IMPROVED SPATIAL ECOLOGICAL SAMPLING USING OPEN DATA AND STANDARDIZATION: AN EXAMPLE FROM MALARIA MOSQUITO SURVEILLANCE.

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Journal : J R Soc Interface
Année : 2019
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Pages : 20180941

Abstract

Vector-borne disease control relies on efficient vector surveillance, mostly carried out using traps whose number and locations are often determined by expert opinion rather than a rigorous quantitative sampling design. In this work we propose a framework for ecological sampling design which in its preliminary stages can take into account environmental conditions obtained from open data (i.e. remote sensing and meteorological stations) not necessarily designed for ecological analysis. These environmental data are used to delimit the area into ecologically homogeneous strata. By employing Bayesian statistics within a model-based sampling design, the traps are deployed among the strata using a mixture of random and grid locations which allows balancing predictions and model-fitting accuracies. Sample sizes and the effect of ecological strata on sample sizes are estimated from previous mosquito sampling campaigns open data. Notably, we found that a configuration of 30 locations with four households each (120 samples) will have a similar accuracy in the predictions of mosquito abundance as 200 random samples. In addition, we show that random sampling independently from ecological strata, produces biased estimates of the mosquito abundance. Finally, we propose standardizing reporting of sampling designs to allow transparency and repetition/re-use in subsequent sampling campaigns.

Télécharger

RESEARCH AGENDA FOR PREVENTING MOSQUITO-TRANSMITTED DISEASES THROUGH IMPROVING THE BUILT ENVIRONMENT IN SUB-SAHARAN AFRICA.

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Journal : Cities & Health
Année : 2019

Télécharger

Abstract

Mosquito-transmitted diseases are a major threat to health in sub-Saharan Africa, but could be reduced through modifications to the built environment. Here we report findings from a major workshop held to identify the research gaps in this area, namely: (1) evidence of the health benefits to changes to the built environment, (2) understanding how mosquitoes enter buildings, (3) novel methods for reducing mosquito-house entry, (4) sustainable approaches for reducing mosquito habitats, (5) case studies of micro-financing for healthy homes and (6) methods for increasing scale-up. Multidisciplinary research is essential to build out mosquito-transmitted diseases, and not build them in.

ASSESSING THE IMPACT OF THE ADDITION OF PYRIPROXYFEN ON THE DURABILITY OF PERMETHRIN-TREATED BED NETS IN BURKINA FASO: A COMPOUND-RANDOMIZED CONTROLLED TRIAL.

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Journal : Malar J
Année : 2019
Volume : 18
Numéro : 1
Pages : 383

Télécharger

Abstract

Background: Long-lasting insecticidal nets (LLINs) treated with pyrethroids are the foundation of malaria control in sub-Saharan Africa. Rising pyrethroid resistance in vectors, however, has driven the development of alternative net formulations. Here the durability of polyethylene nets with a novel combination of a pyrethroid, permethrin, and the insect juvenile hormone mimic, pyriproxyfen (PPF), compared to a standard permethrin LLIN, was assessed in rural
Burkina Faso.
Methods: A compound-randomized controlled trial was completed in two villages. In one village 326 of the PPFpermethrin nets (Olyset Duo) and 327 standard LLINs (Olyset) were distributed to assess bioefficacy. In a second village, 170 PPF-permethrin nets and 376 LLINs were distributed to assess survivorship. Nets were followed at 6-monthly
intervals for 3 years. Bioefficacy was assessed by exposing permethrin-susceptible and resistant Anopheles gambiae sensu lato mosquito strains to standard World Health Organization (WHO) cone and tunnel tests with impacts on fertility measured in the resistant strain. Insecticide content was measured using high-performance liquid chromatography.
LLIN survivorship was recorded with a questionnaire and assessed by comparing the physical integrity using the proportionate hole index (pHI).
Results: The PPF-permethrin net met WHO bioefficacy criteria (≥ 80% mortality or ≥ 95% knockdown) for the first 18 months, compared to 6 months for the standard LLIN. Mean mosquito mortality for PPF-permethrin nets, across all time points, was 8.6% (CI 2.6–14.6%) higher than the standard LLIN. Fertility rates were reduced after PPF-permethrin
net exposure at 1-month post distribution, but not later. Permethrin content of both types of nets remained within the target range of 20 g/kg ± 25% for 242/248 nets tested. The pyriproxyfen content of PPF-permethrin nets declined by 54%, from 10.4 g/kg (CI 10.2–10.6) to 4.7 g/kg (CI 3.5–6.0, $p < 0.001$) over 36 months. Net survivorship was poor, with only 13% of PPF-permethrin nets and 12% of LLINs still present in the original household after 36 months. There was no difference in the fabric integrity or survivorship between the two net types.
Conclusion: The PPF-permethrin net, Olyset Duo, met or exceeded the performance of the WHO-recommended standard LLIN (Olyset) in the current study but both net types failed the 3-year WHO bioefficacy criteria.

DAP 7
Systèmes sociaux

Nous nous appuyons sur les dynamiques socioculturelles, économiques, institutionnelles, politiques et environnementales observées dans les sociétés contemporaines pour questionner leurs capacités de recomposition et de ré-inventivité sociale et institutionnelle. Les activités de recherche dans ce domaine s'intéressent particulièrement à la démocratie, la justice, la cohésion sociale, les élections et conflits, l'autochtonie, la citoyenneté, la gestion des ressources naturelles, la consolidation de la paix, la gouvernance et l'administration publique. Plusieurs approches des sciences sociales dans une logique inter et transdisciplinaire sont mobilisées à cet effet. Les résultats attendus viendront éclairer la gouvernance des institutions au bénéfice des populations locales.

5 Articles scientifiques dans 5 journaunx avec 14 contributeurs du CSRS.

Le CSRS travail activement à l'atteinte des Objectifs de Développement Durable (ODD) par le biais de 8 priorités thématiques appelées Domaines d'Activités Principales (DAP).

Photo : Jeunes adolescents en plein échange, Sud de la Côte d'Ivoire | **Crédits photo :** Christian Heuss

CONSTRUCTION SOCIALE DU CORPS DE L'ACCOUCHÉE CHEZ LES ÉBRIÉ : UNE DYNAMIQUE ENTRE TRADITIONALISME ET MODERNISME.

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Résumé

En Côte d'Ivoire, les sociétés traditionalistes Akan lagunaire croient que l'engraissement pendant trois mois assure la beauté et la santé aux femmes venant d'accoucher. La présente étude a été entreprise chez les Ebrié, où se pratique le rituel des accouchées, désignées sous le vocable de tambruya. L'objectif de cette étude a été d'appréhender les normes culturelles et sociales de l'embonpoint construites par les habitants de villages périphériques d'Abidjan. Les données ont été collectées en administrant 39 entretiens semi- structurés auprès des tambruya et de leurs conjoints, des femmes d'expérience, des mères nourrices non Ébrié, des femmes âgées, des agents de santé et des notables. Ces données ont été analysées en utilisant les thèmes incluant la forme du corps, l'engraissement, l'embonpoint, la beauté corporelle et le corps en santé. Les résultats ont montré que le modèle corporel de la tambruya est originellement l'embonpoint, avec parfois des pliures aux côtes ou encore la forme awoulaba qu'elle est censée avoir pour être vue comme belle. Considérée comme une référence aux valeurs morales et sociales qui sous-tendent toutes les sociétés dites primitives, cette forme est associée avant tout à un corps bien soigné et bien nourri conformément aux exigences coutumières. Mais même si cette perception absolue des valeurs ethno-culturelles de l'embonpoint met la mère nourrice à l'abri des craintes de rejet de la part de sa communauté, force est de reconnaître qu'elle ne lui épargne pas les regards stigmatisants émanant de l'environnement urbain multiculturel et pluridimensionnel à Abidjan. Ainsi, de plus en plus, le corps de la tambruya tend à être socialement construit en conformité avec un modèle de minceur appelé forme moyenne. En conclusion, la construction sociale du corps de l'accouchée impliquée dans une dynamique sociale et alimentaire de traditionalisme et de modernisme, semble émerger pour concilier identité culturelle et identité personnelle.
Hypertension is one of the public health problems in Côte d'Ivoire after malaria and HIV / AIDS. Thus, in view of the growing prevalence of this disease, a study was therefore conducted in the community of Port-Bouët in Abidjan, with the general objective to understand the social representation of hypertension and to identify the means of treatment and prevention applied by the population assessed. From a quantitative and qualitative approach including a household survey (N=325), individual interviews (N=3) and group discussions (N=6), it appears that the consumption of salt and cubes Maggi was perceived as the main cause with (44.38%). Dizziness (38.52%) is the most common symptom of the disease. In addition, (68.21%); some people resort to modern medicine however; a use of traditional medicine has been reported with (30.26%).Apart from drug treatment, non-pharmaceutical therapeutic approaches appeared essential in the care of patients with hypertension. As preventative measures the measure, population seem to advocate reducing the consumption of salt and extremely fatty foods and the practice of regular physical activity. However, it seems that the implementation of this knowledge is not yet effective, hence the need to intensify awareness campaigns on hypertension and its social representation.

KNOWLEDGE AND MANAGEMENT OF HYPERTENSION IN A WEST AFRICAN SETTING: ABIDJAN, CÔTE D'IVOIRE.

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Abstract

Hypertension is one of the public health problems in Côte d'Ivoire after malaria and HIV / AIDS. Thus, in view of the growing prevalence of this disease, a study was therefore conducted in the community of Port-Bouët in Abidjan, with the general objective to understand the social representation of hypertension and to identify the means of treatment and prevention applied by the population assessed. From a quantitative and qualitative approach including a household survey (N=325), individual interviews (N=3) and group discussions (N=6), it appears that the consumption of salt and cubes Maggi was perceived as the main cause with (44.38%). Dizziness (38.52%) is the most common symptom of the disease. In addition, (68.21%); some people resort to modern medicine however; a use of traditional medicine has been reported with (30.26%).Apart from drug treatment, non-pharmaceutical therapeutic approaches appeared essential in the care of patients with hypertension. As preventative measures the measure, population seem to advocate reducing the consumption of salt and extremely fatty foods and the practice of regular physical activity. However, it seems that the implementation of this knowledge is not yet effective, hence the need to intensify awareness campaigns on hypertension and its social representation

SUSTAINABLE STRATEGIES FOR REBUILDING THE RESEARCH ENVIRONMENT IN CÔTE D'IVOIRE BETWEEN 2008 AND 2018.

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Abstract

Objectives: During the Ivorian socio-political crisis (2000–2011), one of the main challenges was the maintenance of basic services and the running of academic and research institutions. Funding was perceived as the main boosting factor of science. The main objective of this study was to identify and describe strategies that supported those efforts.

Methods: In 2007/2008, needs assessment was conducted to identify areas of targeted interventions to boost research. The contribution public and private sectors were analysed for their potential support to the research environment. A rigorous monitoring and evaluation system was implemented to (i) determine institutional impact of interventions; (ii) study the dynamics and the main capacity in fund raising; and (iii) assess indicators of research productivity. The impact was also assessed in terms fellows trained and the research social impact.

Results: An innovative research funding programme followed by a National Science Foundation was established and training modules developed and validated as a "Learning package" between 2008 and 2010.

Research strategic plans supported the universities and research institutions. The "learning package", comprising 18 soft modules, were offered in a shared communication platform. An internationalization of research was observed with a considerable increase of the number of scientific papers. A postdoctoral system was institutionalised and the governance and research management improving to meet international standards.

However, the researchers' investment in grant-seeking activities remained low compared to calls offered, while supervision and mentorship were highly demanded from early-career researchers. Research in the Ivorian context is still directed by academic promotion rather than addressing social needs.

MANDE HUNTERS AND THE STATE: COOPERATION AND CONTESTATION IN POST-CONFLICT CÔTE D'IVOIRE.

Kathrin Heitz-Tokpa

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Résumé

Cet article analyse la relation entre les chasseurs Mandé appelés "dozos" et l'Etat Ivoirien dans la préfecture de Ouangolodougou au nord de la Côte d'Ivoire. Ayant adopté un rôle sécuritaire important pendant le violent conflit armé de 2002 à 2011, les dozos ont fourni des efforts à maintenir leur position dans l'Etat après conflit. Afin de négocier leur position, ils s'appuient sur un répertoire performatif tel que l'étalage des attributs puissants dans le contexte des processions. Bien qu'ils aient dû concéder des activités plus stratégiques et plus rentables à l'Etat rétabli, les chefs dozos gouvernent effectivement les régions frontalières rurales situées au nord de la Côte d'Ivoire.

BURULI ULCER IN SOUTHERN COTE D'IVOIRE: DYNAMIC SCHEMES OF PERCEPTION AND INTERPRETATION OF MODES OF TRANSMISSION.

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Abstract

Buruli ulcer (BU) belongs to the group of neglected tropical diseases and constitutes a public health problem in many rural communities in Côte d'Ivoire. The transmission patterns of this skin infection are poorly defined, hence the current study aimed to contribute to the understanding, perceptions and interpretations of its mode of transmission using a socio-environmental approach. Social and environmental risk factors that may expose people to infection, and the dynamics of local transfer of knowledge and practices related to BU, were assessed in two endemic locations in southern Côte d'Ivoire, i.e. Taabo and Daloa. Data were generated by the administration of a household questionnaire (N= 500) between February and June 2012 to assess how the population perceived transmission of BU, focus group discussions with local communities (N= 8) to analyse ideologies regarding transmission patterns and semi-structured interviews with patients or their parents, former BU patients and traditional healers (N= 30). The interviewees' empirical knowledge of the disease was found to be close to its biomedical description. Their aetiological perception of the disease was linked to natural (e.g. dirty water, insects) and supernatural (e.g. witchcraft, fate) causes. Some informants attributed the spread of the disease to recently immigrated neighbouring communities whose arrival coincided with an increase in reported BU cases.
However, the general consensus seemed to be that the main mode of transmission was contact with infested soil or ulcerated wounds. The participants were aware that BU was a socio-environmental problem in these endemic areas, offering a good starting point for educational campaigns for at-risk communities. Buruli ulcer control programmes should therefore include educational campaigns and Water, Sanitation and Hygiene (WASH) interventions for those at risk in affected communities.

DAP 8 :
Économie de l'Environnement et du Développement local

Nous nous appuyons sur les dynamiques socioculturelles, économiques, institutionnelles, politiques et environnementales observées dans les sociétés contemporaines pour questionner leurs capacités de recomposition et de ré-inventivité sociale et institutionnelle. Les activités de recherche dans ce domaine s'intéressent particulièrement à la démocratie, la justice, la cohésion sociale, les élections et conflits, l'autochtonie, la citoyenneté, la gestion des ressources naturelles, la consolidation de la paix, la gouvernance et l'administration publique. Plusieurs approches des sciences sociales dans une logique inter et transdisciplinaire sont mobilisées à cet effet. Les résultats attendus viendront éclairer la gouvernance des institutions au bénéfice des populations locales.

1 Article scientifique dans 1 journaL avec 2 contributeurs du CSRS.

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Photo : Contexte épidémiogène favorable à la transmission de maladies tropicales | **Crédits photo :** Kigbafori D. Silué

ANALYSE DE LA RENTABILITÉ ÉCONOMIQUE DES SYSTÈMES DE PRODUCTION À BASE D'IGNAME : CAS DES SITES DE LEO ET MIDEBDO AU BURKINA FASO.

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Résumé

La production de l'igname est confrontée à plusieurs contraintes dont la baisse de la fertilité des sols.
Pour améliorer le rendement de leurs cultures, les producteurs d'igname ont alors adopté plusieurs méthodes de gestion. Cette étude a pour objectif d'analyser la rentabilité économique des systèmes de production à base d'igname en relation avec les méthodes de gestion de la fertilité des sols par les exploitants agricoles des communes rurales de Léo et Midebdo au Burkina Faso. Un essai de typologie des systèmes de production à base d'igname a été fait à l'aide d'une analyse en composante Principale (ACP) appliquée à un échantillon de 100 exploitants agricoles. Les résultats montrent qu'il existe deux systèmes de production : i) un système semi-intensif et ii) un système extensif et itinérant. L'analyse de rentabilité économique par les indicateurs tels que la marge brute et le ratio bénéfice /coût, montre que le système de production semi-intensif semble plus rentable que le système extensif. Le ratio bénéfice/coût obtenu avec chacun des systèmes de production est inférieur à 1, ce qui signifie que la production de l'igname dans ces conditions n'est pas économiquement rentable.
Une politique de promotion de la culture de l'igname par l'adoption de fertilisants (organiques ou minérales) dans les systèmes de production pour compenser la baisse de la fertilité des sols permettrait aux producteurs d'accroître leurs productions et revenus.

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