

AGRICULTURE AND HUMAN HEALTH_ ILRI RESEARCH AND INITIATIVES

1. Research Programs

Zoonotic diseases

Zoonotic Emerging Infectious Diseases: A project in the Mekong to build capacity to manage zoonotic emerging infectious disease started in 2008. A scoping study is underway. For more information contact John McDermott at j.mcdermott@cgiar.org

Neglected zoonoses: A joint programme has been established between ILRI and the Swiss Tropical Institute to specifically focus on major neglected zoonoses. For more information contact Esther Schelling at e.schelling@cgiar.org.

ILRI is also a partner on a new Integrated Control of Neglected Zoonoses project focusing on prioritization and control tools.: For more information contact John McDermott at j.mcdermott@cgiar.org

Cysticercosis: ILRI is participating in a Cysticercosis Working Group of Eastern and Southern Africa (CWGESA), which promotes integrated research and control activities aimed at combating cysticercosis. For more information contact Arve Lee Willingham at awi@life.ku.dk.

ILRI is also a partner on an ASARECA-funded project conducting baseline studies and validating diagnostics in East Africa. For more information contact Richard Bishop at r.bishop@cgiar.org.

We are also leading work on evaluating cysticercosis and possible interventions in Mozambique. For more information contact Paulo Duarte at p.duarte@cgiar.org.

Rift Valley Fever: ILRI has been evaluating the impact of the recent Rift Valley Fever outbreaks in East Africa and translating these lessons, in collaboration with FAO, into a decision-support system for more rapid and effective response. For more information contact Jeff Mariner at j.mariner@cgiar.org

We are also collaborating on a new project on arboviruses (including RVF) in Kenya. For more information contact Steve Kemp at s.kemp@cgiar.org

We are also validating diagnostics developed for Rift Valley fever, specifically a Real Time PCR assay and a competitive ELISA. For more information contact Richard Bishop at r.bishop@cgiar.org.

Highly Pathogenic Avian Influenza: zoonotic aspects are being included in major assessments underway to understand risk and impacts associated with its introduction and spread. For more information contact Jeff Mariner at j.mariner@cgiar.org.

Tuberculosis: We are experimentally comparing immune responses and pathology induced by *Mycobacterium bovis* infection between *Bos indicus* and *Bos taurus* cattle. For more information contact Richard Bishop at r.bishop@cgiar.org.

***Streptococcus agalactiae*:** The sequence is being mined for possible vaccine and diagnostic candidate antigens. For more information contact Richard Bishop at r.bishop@cgiar.org.

Cryptosporidiosis: Results from a project led by University of Nairobi with technical support from ILRI will be disseminated this year. For more information contact Delia Grace at d.grace@cgiar.org.

Safety of animal source foods

Participatory risk analysis for informal markets: A seven country study is underway to build capacity to use risk analysis to better manage food safety in informal markets in Africa. For more information contact Kohei Makita at k.makita@cgiar.org.

Comparative risk analysis: A study in Ethiopia is developing methodologies for comparative risk analysis (risk profiling) of food-borne disease. For more information contact Delia Grace at d.grace@cgiar.org.

Positive deviance: Work with women's groups in Nigeria is investigating food safety in meat markets and interventions to improve this based on positive deviance. For more information contact Delia Grace at d.grace@cgiar.org.

Traditional dairy products: A study in North East India is looking at hazards in traditional milk products and knowledge, attitude and practice that contribute to risk reduction or amplification. For more information contact Derek Baker at d.baker@cgiar.org.

Demand for food safety: Several studies are looking at demand for food safety along with other quality attributes and how risk analysis may be applied to resolve safety concerns. For more information contact Amos Omore at a.omore@cgiar.org.

Rationalization and harmonization of food safety policies: There is ongoing action research and facilitation of policy dialogue to rationalize and harmonize milk safety regulations in eastern Africa by ASARECA and backstopped by ILRI. For more information contact Amos Omore at a.omore@cgiar.org.

Climate change and infectious disease

Climate and disease: A recently completed challenge dialogue considered the impacts of climate change on infectious disease (human and animal) in Africa. For more information contact Patti Kristjanson at p.kristjanson@cgiar.org

Kenya Climate and Health Working Group: This new group that is looking at ways to improve prediction, prevention and response to infectious diseases in Kenya. For more information contact Bernard Bett at b.bett@cgiar.org.

Livestock and nutrition

Livestock nutrition review: A review on the links between livestock and nutrition with Cornell University is being completed. For more information contact Tom Randolph at t.randolph@cgiar.org

Animal source foods: A research collaboration with the Swiss Federal Institute of Technology Zurich (ETH) was recently undertaken. For more information contact Tom Randolph at t.randolph@cgiar.org

Livestock, water quality, and human health

Waste water: ILRI in collaboration with IWMI and others is investigating the relationship between water - soil - produce quality (fodder and milk) to assess the chain of possible contaminations (heavy metals, nitrate, parasites) and ultimately the hazards to producers (farmers, dairy producers) and consumers of livestock products in these urban areas. For more information contact Michael Blummel at M.Blummel@cgiar.org

Biotechnology

Vaccines: ILRI research on livestock vaccines has direct and indirect links to medical vaccine and diagnostic research. One aspect of this work involves host functional genomics as it relates to livestock diseases that can be transmitted to humans. For more information contact Phil Toye at p.toye@cgiar.org.

Trypanosomosis: A project investigating resistance to trypanosomosis in cattle is shedding light on some of the basic questions of disease resistance, which may have implications for human medical treatment. For more information contact Steve Kemp at s.kemp@cgiar.org

2. Initiatives and Networks

Urban Harvest Programme

ILRI is a member of Urban Harvest, a CGIAR initiative to use the collective knowledge and technologies of the CGIAR Centers to strengthen urban and peri-urban agriculture (UPA) practiced by the poor. For more information contact Delia Grace at d.grace@cgiar.org.

PENAPH

ILRI is supporting a network on participatory epidemiology in human and animal health. For more information contact Sally Crafter at s.crafter@cgiar.org.

3. Outreach and Events

Training in Participatory Epidemiology. For more information contact Bryony Jones at b.jones@cgiar.org.

Training in Participatory Risk Analysis. For more information contact Delia Grace at d.grace@cgiar.org.

Media communication and events. For more information contact Susan MacMillan at s.macmillan@cgiar.org

4. PUBLICATIONS

NEW PUBLICATIONS 2007 - 2008

An assessment of the risk of acquiring Escherichia coli O157:H7 from consuming informally marketed milk in Kenya. Grace, D., Omoro, A., Randolph, T. and Mohammed, H. 2008J Food Protection 27(2):257-263

Participatory risk assessment: a new approach for safer food in vulnerable African communities. Grace D, Randolph T, Olawoye J, Dipelou M, Kang'ethe E. 2008. Development in Practice,18(4):611-618

Cross-disciplinary and participatory livestock and human health research for successful control of zoonoses in the developing world. Tibbo, M., Schelling, E., Grace, D., Bishop, R., Taracha, E., Kemp, S., Ameni,

G., Dawo, F. and Randolph, T. 2008. Ethiopian Journal of Health Development. 22 (Special Issue), 109-116.

Researcher' approaches to evidence on urban agriculture and human health. 2008. Cole D, Grace D, Diamond M In Cole D., Lee-Smith D., Nasinyama G. (Eds) Healthy city harvests: Generating evidence to guide policy on urban agriculture. International Potato Center (CIP) and Makerere University Press

City dairying in Kampala: integrating benefits and harms. 2008. Grace D., Nasinyama G., Randolph T.F., Mwiine F., Kang'ethe E. In: Cole D., Lee-Smith D., Nasinyama G. (Eds) Healthy city harvests: Generating evidence to guide policy on urban agriculture. International Potato Center (CIP) and Makerere University Press

Human brucellosis in urban and peri-urban areas of Kampala, Uganda. 2008. Makita K, Fevre EM, Waiswa C, Kaboyo W, Bronsvort B, Eisler MC, Welburn SC. Ann. N.Y. Acad. Sci. 1149: 309–311

Risk-based approaches for emerging diseases associated with animal source-foods and their relevance to developing countries 2008. Grace D., Omore A., Randolph T., Mohammed H.O.. Bulletin of Animal Health and Production in Africa. 55(4):254-265.

Modular process risk models for better management of cryptosporidium parva, an emerging zoonotic pathogen. 2008 Grace D., Randolph T., Karanja N., Kang'ethe E. Bulletin of Animal Health and Production in Africa. 56(1):13-18.

Overview on urban and peri-urban agriculture: definition, impact on human health, constraints and policy issues. Kang'ethe, E.K.; Grace, D.; Randolph, T.F. 2007. East African Medical Journal. v. 84 (Suppl 11). p. S48-S56.

Investigation into the prevalence of antimicrobial residues in milk obtained from urban smallholder dairy and non-dairy households in Dagoretti Division, Nairobi, Kenya Ekuttan CE, Kang'ethe EK, Kimani VN, Randolph TF 2007. East African Medical Journal. v. 84 (Suppl 11). p. S87-S91.

Investigation into the prevalence of bovine cryptosporidiosis among smallholder dairy households in Dagoretti Division, Nairobi, Kenya. 2007 Kang'ethe EK, McDermott B, M'Ibui GM, Randolph TF, Langat AK. East African Medical Journal. v. 84 (Suppl 11). p. S87-S91.

Role of livestock in human nutrition and health for poverty reduction in developing countries: invited review. Randolph, T.F.; Schelling, E.; Grace, D.; Nicholson, C.F.; Leroy, J.L.; Cole, D.C.; Demment, M.W.; Omore,

A.; Zinsstag, J.; Ruel, M. 2007. *Journal of Animal Science (USA)*. v. 85. p. 2788-2800.

Human and animal vaccination delivery to remote nomadic families, Chad. 2007. Schelling, E.; Bechir, M.; Ahmed, M.A.; Wyss, K.; Randolph, T.F.; Zinsstag, J. 2007 *Emerging Infectious Diseases*. v. 13(3). p. 373-378.

Research approaches for improved pro-poor control of zoonoses. 2007 Schelling, E.; Grace, D.; Willingham III, A.L.; Randolph, T.. *Food and Nutrition Bulletin (Japan)*. v. 28 (Suppl. 2). p. S345-S356.

Assuring the safety of animal source products in developing countries -- the potential of risk-based approaches. 2007. Grace D., Omore A., Randolph T., Mohammed H.O., Camus E, Cardinale E, Dalibard C, Martinez D, Renard JF, Roger F (Eds). Does control of animal infectious risks offer a new international perspective? Proceedings of the 12th International conference of the Association of Institutions of Tropical Veterinary Medicine, Montpellier, France, 20-22 August 2007. CIRAD/AITVM, Soulié Imprimeur, Frontignanpp. 263-267

Place of food safety in evolving pro-poor dairy policy in East and West Africa. Grace D, Randolph T. Omore A, Schelling E, Bonfoh B. 2007 *Revue d'Elevage et de Médecine Veterinaire des Pays Tropicaux* 60.

Participatory epidemiology in disease surveillance and research. Jost, C.C.; Mariner, J.C.; Roeder, P.L.; Sawitri, E.; Macgregor-Skinner, G.J. 2007. *Revue Scientifique et Technique de l' OIE (France)*. v. 26 (3). p. 537-549.

Gene-knockout mice in malaria research: useful or misleading?. Hernandez-Valladares, M.; Naessens, J.; Iraqi, F.A. 2007. *Trends In Parasitology (UK)*. v. 23(11). p. 522-526.

Palpable lingual cysts, a possible indicator of porcine cysticercosis, in Teso District, Western Kenya. Mutua F.K., Randolph T.F., Arimi S.M., Kitala P.M., Githigia S.M., Willingham A.L., Njeruh F.M. 2007. *Journal of Swine Health and Production* 15(4):206-212

Medicinal plants for helminth parasite control: facts and fiction. Athanasiadou, S.; Githiori, J.; Kyriazakis, I. 2007. *Animal*. v. 1(9). p. 1392-1400.

Prevalence of aflatoxin m1 and b1 in milk and animal feeds from urban smallholder dairy production in Dagoretti Division, Nairobi, Kenya. Kang'Ethe, E.K.; M'Ibui, G.M.; Randolph, T.F.; Lang'At, A.K. 2007. *East African Medical Journal*. v. 84 (Suppl 11). p. S83-S86.

Risk of Exposure to Marketed Milk with Antimicrobial Drug Residues in Ghana. 2007. Aning, K.G., Donkor, E.S., Omore, A., Nurah, G.K., Osafo,

E.L.K. and Staal, S. 2007. The Open Food Science Journal, 1, 1-5. ISSN:
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