

Biological and Chemical Health Risks Associated with Smallholder Dairy Production in Dagoretti Division, Nairobi

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Approximately half of the world's population currently lives in towns and this is projected to rise to over 60% by the year 2005. The major problem facing governments is production of food supplies to feed this growing population. Urban and peri-urban agriculture (UPA) is expected to increase and contribute to feeding people in cities. However, UPA presents challenges (risks) on environmental health, impacting on populations in the farming families and workers, their neighbours, and in case of commercial enterprises, their customers. A major concern is health risks of zoonotic origin such as *Escherichia coli* O157:H7, bovine tuberculosis (BTB), brucellosis, cryptosporidiosis, leptospirosis and anthrax among others, and effects of antibiotic residues in milk produced by these farmers.

The goal of this study was to provide data to be used to improve human health by careful analysis of benefits and health risks associated with urban agriculture. The broad objective of the study was to assess the selected biological and chemical health risks namely bovine tuberculosis, brucellosis and antibiotic residues in milk, associated with smallholder dairy production systems in Dagoretti division of Nairobi City, Kenya.

This was a descriptive cross-sectional study carried out in Dagoretti Division of Nairobi province. The study subjects were 300 dairy farming households and 150 non-dairy farming neighbours selected randomly. Milk was analysed for presence of brucella antibodies using the Brucelisa 160M®; indirect Elisa test and antibiotic residues using the Charm Blue Yellow Test® and Charm Rosa Tests®. Bovine tuberculosis detection in cows was done using the Stormont test. A questionnaire was used to elicit information on risk predisposing and risk mitigating practices.

The study found out that the prevalence of bovine tuberculosis; brucellosis and antibiotic residues in milk in the dairy-farming households were 10.3, 1.2 and 4.2% respectively. Non-dairy farming households' milk had very low prevalence rates of 0.6% each for brucellosis and antibiotic residues. Knowledge base on hazards by the respondents in this study was generally low although male respondents were generally more knowledgeable than their female counterparts. Gender differences were mostly pronounced in the social-demographic characteristics of households than in the presence of selected hazards or the risk practices for the hazards in the households.