Milk production practices, udder health and their impact on milk quality, safety & processability in Rwanda

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Objectives
1) Evaluate udder health, risk factors and impact of subclinical mastitis on dairy productivity in Rwanda.

2) Evaluate microbiological and chemical quality of raw milk in Rwanda by evaluation of the prevalence of zoonotic bacteria, their antimicrobial resistance and the antimicrobial residues in milk at different sites of the milk chain in Rwanda.

3) Train dairy farmers, MCCs managers/technicians, IAKIB’s extension officer/veterinarians, district’s veterinarians and students in best practices for good udder health and best milk production practices.
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Introduction

• Mastitis is an inflammation of the mammary gland and is expressed as clinical (CM) or subclinical mastitis (SCM).
• It is caused by a range of microorganisms and is multifactorial (animal, environmental & management factors).
• It leads to decreased milk yield and reduced milk quality & safety. That milk may end up being discarded. Other negative effects include costs for veterinary service and treatment drugs, extra labor, and early culling.

Methods

• We screened 572 cows for SCM mastitis from 404 herds linked to eight milk collection centers, studied its etiology and risk factors.
• We collected 406 bulk milk samples for quality and safety analysis and assessed associated risk factors.

• Results
• The prevalence of SCM was 66.3% at cow level, and Presence of E. Colie, Salmonella and brucella antibodies in milk was common.

Results (Cont.)

Risks for SCM related to hygiene of cow environment, poor milking routine, and poor management of lactating cows

Recommendations

• Establish and disseminate farm Standard Operating Procedures (SOPs) and benchmark periodically farms on mastitis prevention and control practices (including 10 point-mastitis control plan).
• Consider on the use of SCC of pooled MCC milk and its interpretation in evaluating MCC performance.
• Apply innovative tools to monitor regularly farm performance and provide feedbacks to them periodically (i.e: dairy assessment and advisory tool).

Research gaps or future opportunities

• Evaluate application of mastitis control methods, e.g., the 10-point mastitis control approach.
• Develop cost effective diagnostic tools to evaluate mastitis and milk quality at farm level.
• Introduce technologies such as bucket milking machine to improve milking hygiene or cooling systems for milk transport.

Prevalence of SCM at cow level ranged from 47 to 82% in MCCs in Rwanda signifying widespread of the disease and low milk production and its quality from infected cows.