



Management of Bovine Mastitis and Antibiotic Residues in Milk

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Introduction

- Targeted management of mastitis and antibiotic residues in milk is a climate sensitive TIMPS for improved dairy productivity
- Bovine mastitis is widely distributed and its increasing incidence is resulting to rising antimicrobial resistance to routinely used antimicrobial drugs (Kasiulevicius, 2006)
- This problem is causing economic losses in the dairy and discouraging dairy productivity
- Evidence from this study will inform policy on management of both mastitis and resultant antimicrobial resistance in order to spur improved dairy productivity in affected counties

Study Objectives

Overall

- To determine the determinants of effective Management of Bovine Mastitis and Antibiotic Residues in Milk in Uasin-Gishu

Specific

1. To identify the bacterial pathogens causing bovine mastitis in Milk in Uasin-Gishu
2. To assess determine the Incidence of bovine Mastitis in Uasin-Gishu
3. To evaluate susceptibility of microbial pathogens to antibiotics commonly used in the treatment of bovine mastitis in Uasin-Gishu

Materials and Methods

Study site(s): Moiben and Kapseret sub-counties

Sampling frame/design

- Adopted prospective cohort study design where cows were recruited at farm level
- Semi-structured questionnaires were used to interview farmers on practices
- Negative cows provided the baseline and followed every 21 days for six months to determine the bovine mastitis endpoints

Materials and Methods Cont.....

- Multi-stage sampling design was used to sample locations and wards
- Mid-stream milk was obtained in sterile bottles and cultured to identify pathogens
- Microbial pathogens were isolated, identified and subjected to susceptibility testing
- Data was exported into SPSS, analyzed and inferences made at p-value ($P < 0.05$)

Results: Mastitis incidence

- A total of six microorganism were isolated; *Staphylococcus epidermidis* at 32.7% followed by *Staphylococcus aureas* at 13.9%, *Micrococcus spp* at 9.9% and cloforms (*Klebsiella pneumoniae*, *Escherichia coli* and *Pseudomonas auriginosa*) at 2% each

Results: Sensitivity Tests

- *Staphylococcus aureas* sensitivity for Ampicillin stood at 42.7%, for Tetracycline at 64.3%, Cotrimoxazole at 35.7%, Streptomycin at 21.4%), Kanamycin at 71.4%) , Gentamycin at 100% and Sulfametaxazole at 14.3%
- *Staphylococcus epidermidis* for Ampicillin at 30%, Tetracycline at 93.3%, Cotrimoxazole at 40%, Streptomycin at 46.7%, Kanamycin at 66.7%, Gentamycin at 93.3% and, Sulfametaxazole at 40%

Results: Management Practices by farmers

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Conclusion and/Recommendations

- Microbials observed had developed resistance to commonly used drugs
- Likely that the pattern of resistance observed will make it difficult to treat and eliminate mastitis in farms resulting to low yields and reduced dairy productivity
- Counties need to engage in training and awareness creation on use of antimicrobial drugs to avoid resistance

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