



Choice of breeds and husbandry practices influencing the safety of milk and milk products in smallholder dairy farms in peri-urban Nairobi, focussing on brucellosis

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Introduction

Kenya: 85% of dairy cattle population in East Africa (Omore, 2004).

Dairy sector: Large farm holders: 20%

Smallholders: 80%, located around cities (Omore, 2004).

Problems: Poor husbandry and processing practices, poor hygiene.

Consequences: Occurrence of livestock diseases such as brucellosis (zoonosis).

Brucellosis prevalence in Kenya: 2% to 15% (Kang'ethe, 2001).

Hypotheses: - Some breeds are more susceptible to brucellosis
- Certain practices increase the risk of contamination of milk with brucellosis

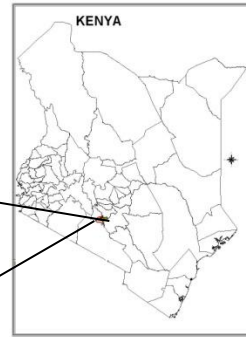
Objectives: - Determine the prevalence of brucellosis in each breed,
- Describe husbandry and processing practices,
- Identify risk factors for brucellosis.

Materials and Methods

Study area: Kasarani Division

- Area: 85 km²
- Population: 339,000 inhabitants

NAIROBI AREA



Farm survey

Table 1: Number of farms surveyed in each stratum

Breed \ Herd size	Breed	Exotic	Crossbreed	Local breeds	Total
Small (1 to 3 cows)		17	41	7	65
Medium (4 to 15 cows)		22	12	1	35
Total		39	53	8	100

- Selection applied: guided by the extension officer
- Milk sample collection: 100 farms and 20 milk shops

Laboratory investigation

- Milk Ring Test
- Indirect ELISA

Data analysis: Mostly descriptive

Results

Breeds kept in Kasarani

- Friesian (85% of farms),
- Guernsey (16% of farms),

Ayrshire (44% of farms)

Local breed (8% of farms)

Breeding techniques

- Artificial Insemination : 92%
- Natural mating : 8%

Feeding system

- Zero-grazing : 86%
- Seasonal-grazing : 14%

Feedstuff

(see Table 2)

Table 2: Feedstuff used in Kasarani

Feed	%
Napier grass	100
Dairy meal	96
Natural grasses	86
Crop residues	84
Hay	21
Brewery waste	10
Poultry waste	6

Results

Milking and processing

- Hand milking : 99%
- Machine milking : 1%

- Processing: Milk fermentation (*mala*)
 - Farmers : 2%
 - Milk sellers : 100%

- Hygienic practices
 - Cleaning the cattle shed
 - Washing hands and utensils before milking
 - Washing and drying the udders before milking
 - Boiling milk before consumption

Results

Milk channels

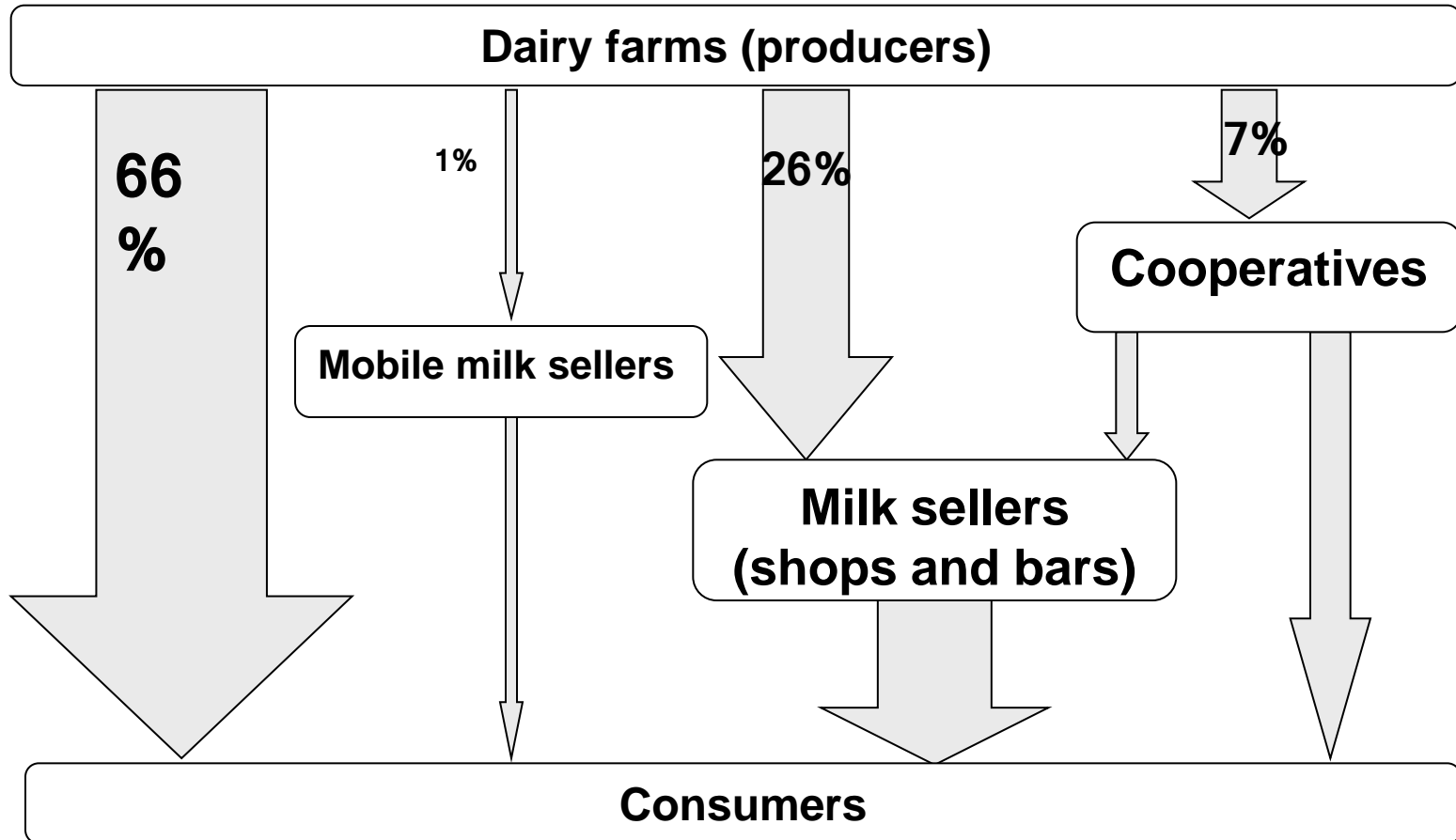


Figure 1: Milk channels in Kasarani

Results

Brucellosis prevalence

- Overall prevalence

MRT: 6%,

ELISA: 0%

- Prevalence by breed and system

Table 3: Prevalence of brucellosis according to MRT

Effect	Categories	Number of infected farms	Prevalence (%)
System	Zero-grazing	6 out of 86	7
	seasonal-grazing	0 out of 14	0
Breed	Crossbred	4 out of 53	7
	Exotic breed	2 out of 39	5
	Local breed	0 out of 8	0

Results

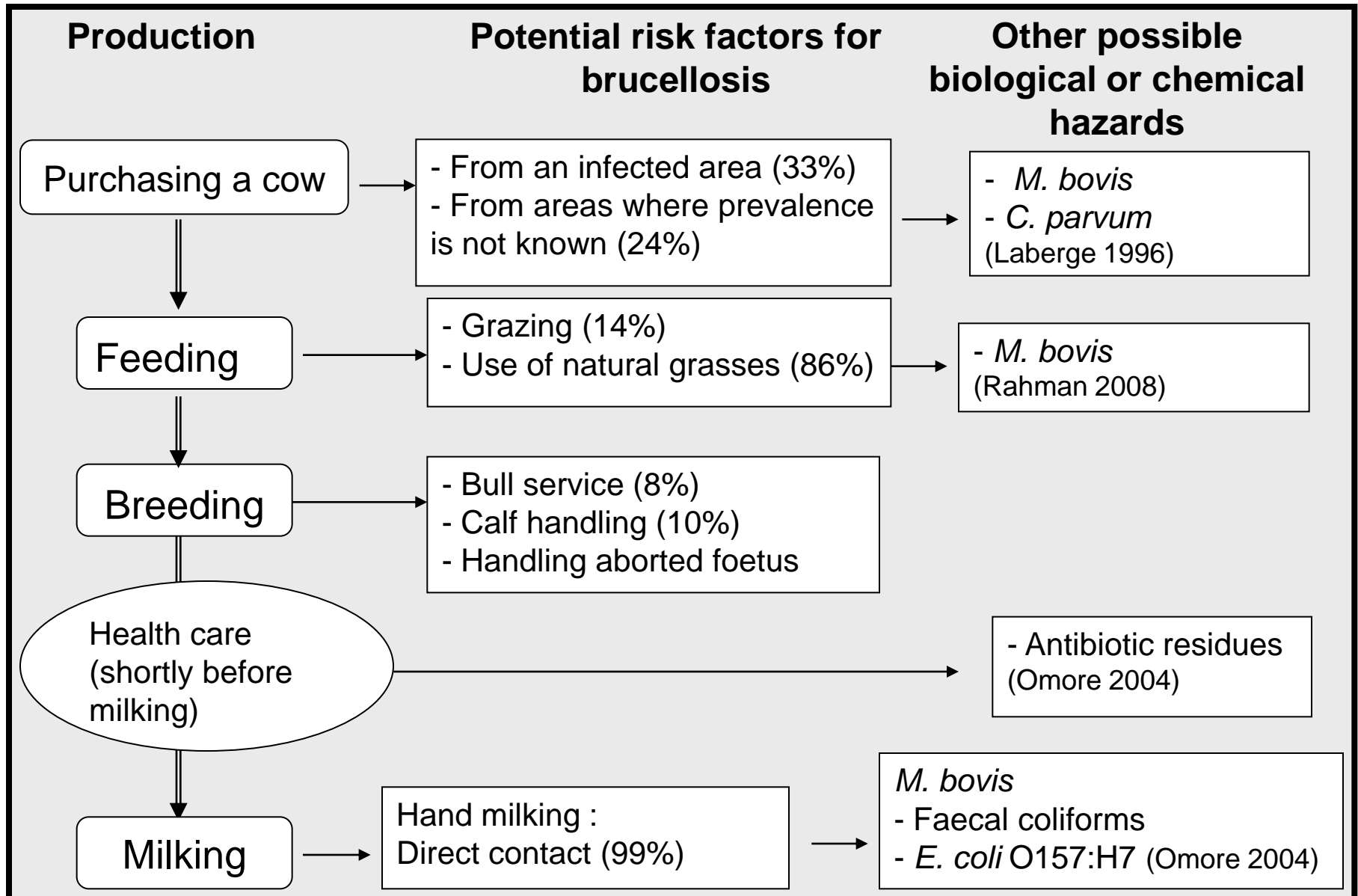


Figure 2: Observed potential risk factors for brucellosis and other possible hazards likely to occur in different steps of production in Kasarani

Results

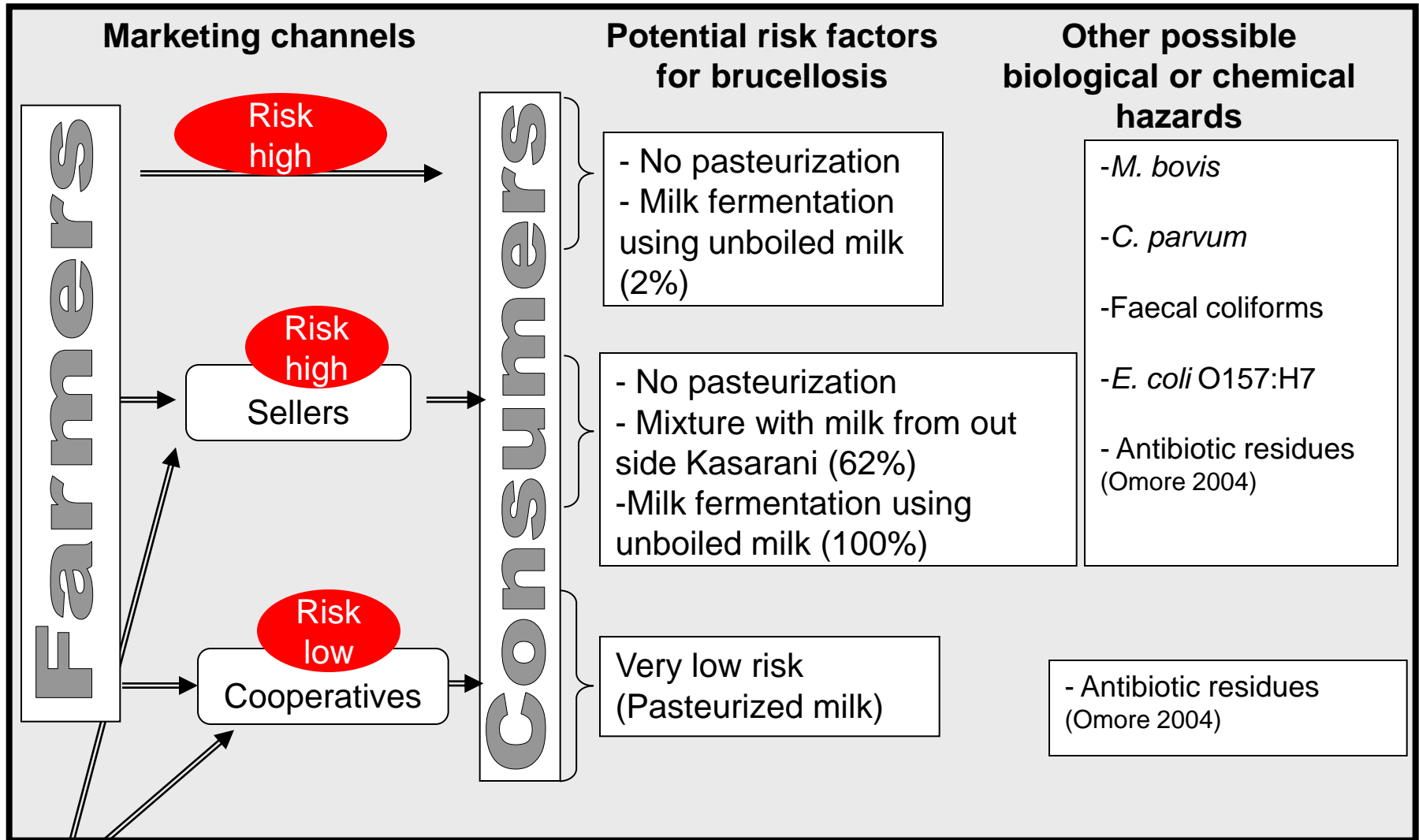


Figure 3: Observed potential risk factors for brucellosis and other possible hazards likely to occur in marketing channels

Discussion & Conclusion

No evidences

Potential critical points identified

– **At farm level**

- Purchasing cow from an infected area
- Grazing
- Feeding with natural grasses
- Natural mating

– **At market level**

- Collection and mixture of milk from different areas
- Milk fermentation using unboiled milk

Farmers and sellers have poor knowledge of brucellosis and hygienic practices

Trainings on good farm practices are recommended

Farmer \implies cooperative \implies consumer: should be developed

Acknowledgments



Thank you