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Status of Clean Milk Production in Faisalabad, Punjab, Pakistan

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Abstract

Milk plays an important role in Pakistan's economy; 20 % of the milk comes from peri-/urban farms, is sold as untreated raw milk, therefore prone to fast spoilage and requires protection from contamination. This study aimed at determining factors influencing clean milk production in Faisalabad, the third-largest city of Pakistan. Using a semi-structured pretested questionnaire, interviews with semi-commercial small-scale (SCSS), commercial small-scale (CSS) and commercial large-scale (CLS) peri-/urban dairy households (HH, 60 per type) were conducted in February-March 2018, using snow-ball sampling. Interviewed HH had 10±7.1 years of dairying experience, kept 12±9.4 adult female buffaloes and 12±7.1 adult cows, earning about 1200 Euro month⁻¹ from milk sales. Differences in total number of dairy animals, earnings from milk sales and farm expenses between SCSS, CSS and CLS farms were significant ($p < 0.001$). Two-thirds of the farms (n=136) used traditional cow-sheds and 25 % had modern barns, with significant differences ($p < 0.01$) in farm design, drainage system and cleaning frequency between SCSS, CSS and CLS farms. Flies and ticks were present in >80 % farms but control measures only used in 22 % HH. Most animals (81 %) had dirt and dung coated bodies, hindquarters and udders. Practices like hair-clipping, hoof-trimming, udder-washing and teat-dipping were not applied by 83 %, 74 %, 59 % and 84 % of farmers, with significant differences ($p < 0.01$) between SCSS, CSS and CLS farms. About 70 % of the workers didn't wash hands before milking; most (89 %) didn't trim nails nor cover heads (97 %) and carried on milking even in case of sickness (86 %). Milk cans were hardly disinfected (79 %) and milk mostly (64 %) stored in plastic containers without pre-filtration; however, CLS more frequently (50 %) stored milk in steel containers than SCSS (25 %) and CSS (20 %) farms ($p = 0.001$). Most farmers (76 %) had no knowledge of farm hygiene, 62 % had little or no knowledge of clean milk production and 46 % no knowledge of improved farming practices, with significant differences ($p < 0.01$) between farm types. While some reasons for unhygienic milk production, such as housing and drainage system, need major investment to improve, systematic cleaning of dairy animals, milking equipment and improved workers' hygiene can easily improve the milk safety in Pakistan's cities.

Keywords: Commercial dairy farming, public health, urban livestock keeping