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Requirements for Investigations of Animal Food Chains

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Abstract

Concerns regarding the safety of foods of animal origin have increased in recent years as a consequence of ever-emerging hazards associated with food production and supply chains. These hazards cause various risk-threats to human health. Concerns are being spurred on by requirements related to the globalisation of trade of agricultural goods and by perceptions of consumers regarding food safety. International mandated organisations like the Codex Alimentarius Commission and trade blocks like the European Union responding to the concerns in consequence have embarked on an integrated approach to assure a high level of food safety and quality from farm to table covering all sectors of the food chain, including feed production, primary production, food processing, storage, transport and retail sale.

Investigations of food chains and determination of risk factors for the transmission pathways of agents along the chain require a new research approach: the preharvest stage has to be added and integrated to investigations which traditionally have focused on the harvest and the postharvest stages. Achievement of this requires high quality data on the various multiple stages of the food chain which in turn calls for the involvement of multi-disciplinary teams and multidimensional research approaches. Data would be used in the development and validation of state-transition risk assessment models that would provide insight in epidemiological consequences of food hazards and the efficiency of safety measures.

The paper presents experiences with the design and implementation of a food chain investigation approach for *Salmonella* infection in the pork chain in Northern Thailand. Marked animals and samples from them were followed throughout the chain and *Salmonella* prevalence were investigated in respective stages during the production line, transportation, lairage, slaughter and in pork products in retail markets. Investigation problems encountered and solutions used at different stages are presented.

Keywords: Animal food chains, investigation design, pork chain, Thailand