

Khemmapat Boonyo 2014: Social Network Analysis of Meat Goat Trading in Chainat.
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Phitsanu Tulayakul, Ph.D. 91 pages.

The objectives of this research were (1) to determine social network topology of production indexes and trading pattern of goat farms in Chaient Province, and (2) to describe the relative pathway of positive serum antibody to Foot and Mouth disease virus, Caprine Arthritis Encephalitis virus and Brucellosis on Social Network Analysis of Meat Goat Trading. Data for network analysis of meat goats in Chainat were collected from the goat farms in total number of 112 farms in 8 districts. The results revealed that the network type was scale-free topology type. This type of network was important, although the farmers were random gave up their business, the network still remains. However, disease can spread rapidly in outbreak situation because the hub can be point of spreading an outbreak. Thus, the disease control strategy must be done first at these hub. Moreover, this study also showed that there were 28.88% of cutpoints (67/232 cutpoints) in the network from many district in this study. As far as many cutpoints found, the outbreak will be fast and the disease control strategy must be done quickly started from the higher degree of cutpoint (out degree = 6.46, in degree = 4.84) than others nodes (out degree = 1.00, in degree = 1.66). Therefore, once removing the cutpoint out of the network, it caused the fragmentation of the network, then the disease can be controlled and reduced the spreading time of the diseases. On the other hand, concerning the results of positive serum antibody for these 3 diseases collected from the study, it revealed that the ego-centric network were at (1) provincial strategy's project, and at (2) the goat trader. Furthermore, the direction of arrow head were indicated out of the ego-centric nodes into other connection nodes for FMD and Brucellosis. Therefore, It was interpreted that the goats from provincial strategy's project could be source of spreading of Foot and Mouth Disease and Brucellosis but not Caprine Arthritis Encephalitis in this study.

Student's signature

Thesis Advisor's signature