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Swine transit analysis in main regions of Minas Gerais state, Brazil, 2014

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Brazil stands out as the fourth largest world pig herd and third pork exporter until October 2018. The relevance of national pig farming in the economic and social scenario at global levels is noteworthy. The activity is characterized by concentrating its ventures in country main regions, especially South and Southeast, to reduce production costs and facilitate the supply chain logistics. The animal's movements are intense, and the transit dynamics can be a risk factor for diseases entrance and spreading. Minas Gerais (MG) is responsible for the largest number of pig slaughtering among southeast states. The study objective is to characterize and analyze the pig traffic in Minas Gerais state, with emphasis on the animals movement among the state's main regions, also identifying the traffic purposes: slaughter, fattening and reproduction. Data collection was performed through the Animal Transit Guides (GTAs), a mandatory document that accompanies all loads of live animals, whose information includes the animals number and traffic purpose in 2014. The GTAs were stored in state database, Instituto Mineiro de Agropecuária (IMA), the official organization responsible for the animal health and inspection. The software Pajek 1.24 was used for network design. A total of 84,595 GTAs were issued in MG in 2014, corresponding to 7,263,066 pigs on movement. Which 95,13%, 6,909,309 animals, were destined to state counties. The remaining had other states as destination. Animals for fattening from other main regions or states, with no inferior health status, were most representative category among all activities. The destination of a greater number of animals was to Triângulo and Alto Paranaíba, main state regions. Thus, those are the most vulnerable to pathogens introduction. Belo Horizonte area, main state city, received the largest pig volume, mainly for slaughter. The study allowed better visualization and characterization of animals transit purpose within the state. It is concluded that the tools used by the epidemiological surveillance system state body, can help in the health risks descriptions and allow the development

of mitigation actions. In addition the methodology used can be expanded to other regions of the country.