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Ranking of broiler farms based on building, installations and equipment using a multi-criteria decision analysis in Zanjan province

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Abstract

This study was conducted to rank the broiler farms based on buildings, installations and equipment and its effect on production factors. To determine the contribution of each factor in ranking of farms, a multi-criteria decision analysis (SAW) was used. Data of 108 broilers were recorded in specific forms and the amount of investment per broiler was calculated for individual factors. To calculate the adjusted weights of parameters, 20 experts were consulted as was specified in forms. The results showed that ventilation (fans and air inlets), roof and wall insulation in a poultry houses have represented about 55 percent of technological factors. The breeding units holding rank 1 and 2 enjoyed high degree of mechanization. As the level of mechanization was improved, the density of chickens per unit area was also increased; These units used more tunnel ventilation and large fans, and their ceiling were insulated using fiberglass, polystyrene, corrugated plastic and thickness of walls were also 35 cm. Mostly external heaters have been installed. Feeding and drinker systems have exerted no important effect on production. Slaughter weight and survival percent were not affected by the degree of mechanization but feed intake and feed conversion ratio decreased and production index increased ($p<0.01$) in the breeding units holding rank 1 and 2. In general in poultry house, ventilation system and ceiling and wall insulation improved energy efficiency and increased the efficiency of the system.

Keywords: Isolation, Ventilation system, Production index, Technological coefficient, Mechanization