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Effects of pre-transport nutrient supplementation and transport duration on the post-transport blood biochemistry, bodyweight and welfare of ostriches

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Abstract

There are very few abattoirs in North America that process ostriches (Struthio camelus) which means producers are forced to transport their birds over long distances (> 500 km) for processing. The objectives of this research were to investigate the effects of pre-transport nutrient supplementation and transport duration on ostrich bodyweight and blood biochemistry. A total of 45 ostriches were used in three transport trials with driving durations of 30 min (n = 10), 7 h (n = 11) and 18 h (n = 24). Birds were weighed and blood sampled (10 ml) before and after transport. There were two treatment groups in each trial: control (n = 22) and nutrient-supplemented (n = 23). Prior to transport, each bird in the nutrient-supplement group was tube-fed 1 L of liquid nutrient supplement (containing water, dextrose, protein, and electrolytes), and control birds were each tube-fed 1 L of water. The results of our study showed that birds which were shipped for 18 h lost the most bodyweight while birds transported for 7 h lost more weight than those transported for 30 min. Birds which were transported for a longer time also had higher post-transport concentrations of plasma glucose, creatine phosphokinase, aspartate aminotransferase, total protein and uric acid. Male birds which received nutrient supplement lost less weight compared to the male control birds. We concluded that under the present shipping conditions, long distance transportation is detrimental to ostrich welfare with significant loss to producers due to mortalities and shrinkage. Our results also indicated that the use of pre-transport nutrient supplementation can partially alleviate the effect of the transportation stress.

Keywords: animal welfare, blood biochemistry, nutrient supplementation, ostrich, transport duration, weight loss