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Nutrient composition and feeding value of Salicornia bigelovii torr meal in broiler diets

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Abstract

Salicornia meal (SM) is a by-product of the oil extraction of the seeds of Salicornia bigelovii Torr, an oil-seed crop tolerant to seawater irrigation. Chemical analysis showed that it contained 340 g kg^{-1} of crude protein, 64.5 g kg^{-1} of ether extract and 36 g kg^{-1} of crude fiber with a gross energy of 19.4 MJ kg^{-1}. Salicornia is rich in linoleic acid. Lysine and sulfur containing amino acids are the most limiting in SM. In comparison with soybean meal, SM is inferior with respect to the amino acid profile. SM contains high levels of sodium (30.4 g kg^{-1}), chlorine (45.8 g kg^{-1}), and ash (150 g kg^{-1}). A feeding trial was conducted using broiler chickens to evaluate the nutritional value of SM. SM was incorporated in the diet at levels of 0, 30, 60 and 90 g kg^{-1}. The 60 g kg^{-1} SM diet was fed either with or without cholesterol (5 g kg^{-1}) whereas the 90 g kg^{-1} diet was fed only with cholesterol (5 g kg^{-1}). SM in broiler diets caused a depression ($P \leq 0.01$) in growth and feed intake proportional to the level of SM in the diet. However, the growth depressing activity of SM was counteracted by the inclusion of cholesterol. These results indicate that SM may be used as an unconventional feed ingredient in broiler diets when supplemented with cholesterol. © 1997 Elsevier Science B.V.

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