

Survey on occurrence of aflatoxins in chicken feeds from Peninsular Malaysia

ABSTRACT

This study was conducted to observe the occurrence of aflatoxin in chicken feed from Peninsular Malaysia. A total of 336 samples of chicken feed from Peninsular Malaysia were conveniently collected in this survey. The chicken feed represented the following three categories which are starter, grower and finisher. All samples were collected from local poultry farms in East Coast Region (Kelantan, Terengganu, and Pahang), Northern Region (Perlis, Kedah, Penang, and Perak), Southern Region (Malacca, Johor) and Central Region (Selangor, Negeri Sembilan) of Peninsular Malaysia for a period of six months (July-December 2015). Enzyme-linked immunosorbent assay (ELISA) was used for screening of total aflatoxin (TA) in the samples. High performance liquid chromatography (HPLC) with fluorescence detector was used for determination of aflatoxin B and G. Moisture content of samples was determined using the hot air oven method (AOAC International, 2011). Overall, the incidence of positive TA > 20 g/kg in chicken feed is 14.9% (50 samples). The average level of TA was found significantly different between different states at $p < 0.05$ for both broiler grower and finisher. The chromatograph results showed that positive samples were found in broiler finisher from Kedah (94.6 g/kg and 42.1 g/kg) and Penang (56.4 g/kg) with aflatoxin B1. In this study, the range of moisture content were around 6.5-27.3%. About 40% samples have more than 12% moisture content. One of the predisposing factors for aflatoxin accumulation in chicken feed is moisture content. The results warrant the need for surveillance and constant monitoring programmes for the prevention of aflatoxin incidence in poultry farms.

Keyword: Aflatoxins; Occurrence; Chicken feeds; ELISA; HPLC