International Journal of Science, Environment and Technology, Vol. 4, No 4, 2015, 980 – 983

ISSN 2278-3687 (O)
2277-663X (P)

Review Article

EFFECT OF GARLIC SUPPLEMENTATION ON PERFORMANCE IN BROILERS – A REVIEW

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Herbal uses in Poultry industry

The fast growing nature of broilers and their short generation interval has been associated over the years with the use of antibiotic growth promoters in animal feeds in order to improve the quality of the product. There are some important reasons that restrict the use of antibiotics such as the drug resistance in bacteria and the drug residues in meat (Kamal Jamsa Issa and Abo Omar, 2012). The utilization of growth promoters of natural origin become of an interest in recent years.

In pursuit of improved chicken healthiness and in order to fulfil consumer expectations in relation to food quality, poultry producers more and more commonly apply natural feeding supplements, mainly herbs (Iji *et al.,* 2001). The positive effects of herbal plants on broilers have been reported by many studies. Their anti biotical potential, hypocholestrolemic effects, growth promoting and availability are the most beneficial parts of herbs, which have drawn the attention themselves.

Garlic is considered as a plant with antibiotic, anticancer, antioxidant, immunomodulatory, anti-inflammatory, hypoglycemic and cardiovascular- protecting effects (Reuter *et al.,* 1996).

Role of Garlic in Poultry

Garlic has played important dietary and medicinal roles throughout the history. Garlic (*Allium sativum*) is well known as a spice and herbal medicine for the prevention and treatment of a variety of diseases.

Garlic Effect on Feed Consumption

Feed additives are generally used to improve feed intake and to increase the growth rate in broilers (Abouelfetouh *et al.,* 2012). For many years feed additives have been widely used to

*Received June 1, 2015 * Published Aug 2, 2015 * www.ijset.net*

increase animals performance and recently it is used in poultry industry to improve growth, feed efficiency and layers performance (Khan *et al.,* 2007).

Elagib *et al.* (2013) reported that the best performance was attained by the group of birds fed on diet containing 3per cent garlic powder and they attained the highest feed consumption. The lowest performance was attained by the birds fed on the diet containing 5per cent dietary garlic powder.

Garlic Effect on Feed conversion Efficiency

Onu (2010) showed that ginger and garlic supplementation at 0.25per cent level in broiler finisher diets enhanced the feed conversion ratio of the birds and the best performance was attained by the group of birds fed on diet containing 3per cent garlic powder had best feed conversion efficiency (Elagib *et al.,* 2013).

Effect of garlic on body weight gain

More than 70 per cent of expenses in broiler management are in the form of feed management. So, the cost of feed in broiler management can be reduced by using less expensive feed supplements like garlic. Tollba and Hassan (2003) were reported that garlic, improved broiler growth and feed conversion ratio (FCR) and decreased mortality rate. Onibi *et al.* (2009) reported that powdered garlic at 0.5per cent level may be incorporated as a growth promoter in the ration of Japanese quails. Onu (2010) showed that ginger and garlic supplementation at 0.25per cent level in broiler finisher diets enhanced the growth rate.

Garlic Effect on Carcass characteristics

The findings of Javandel *et al.* (2008) and Onibi *et al.* (2009) who stated that garlic supplementation had no significant effects on major carcass components and organ characteristics.

Raeesi *et al.* (2010) stated that supplementation of 1per cent and 3per cent garlic in the broiler diet had no significant effects on relative weights of carcass, fat pad, or digestive organs among different treatments.

Serum Blood parameters

Ibrahim (2006) suggested that 0.2per cent and 0.4per cent garlic extract reduced plasma glucose level at 6^{th} week age. Sreekumar *et al*. (2007) reported that supplementation of 1per cent garlic powder increased the utilisation of glucose indicating their hypoglycaemic effect. Kim (2010) showed that garlic did not affect glucose level significantly in blood of birds compared with the birds.

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