ABSTRACT

Velvet beans *(Mucuna pruriens)* represent an interesting food and feed commodity due to the presence of harmful, but also potentially beneficial components that have been poorly studied. Two feeding trials were conducted using two hundred day old, unsexed broiler chicks of Hubbard strain in each trial. First experiment was conducted to study the effect of feeding different levels (0, 10, 15, 20 and 25%) of velvet beans (VB) on performance and lipid profile of broiler chickens. The second was designed to study the effect of feeding velvet beans together with different types of dietary fat (coconut oil, palm oil, vegetable oil, lard and tallow) on performance and lipid profile of broiler chickens.

The feed intake in broilers was unaffected by velvet beans. Twenty and 25% velvet beans reduced weight gain by 17 and 23% and increased the feed conversion ratio by 17 and 23%, respectively. Final body weight of birds at 42 days was decreased with more than 15% VB. More than 10% velvet beans reduced the dressing percentage of broilers. Serum total cholesterol level was lowered by 9.5, 9.7, 15 and 16% in birds fed with 10, 15, 20 and 25% velvet bean diets. Birds fed 25% VB diet showed an increase in HDL level by 8%. LDL level was lowered by 43.1, 36.5, 25 and 23.4%, respectively in birds fed with 25, 20, 15 and 10% VB. Velvet beans reduced the serum triglyceride levels. The total cholesterol level in breast muscle was reduced by 17 and 20% in birds fed with 20 and 25% VB respectively. The same effect was observed in abdominal fat too. Lard and tallow reduced the palatability of broiler ration. Detrimental effect of VB on broiler performance was amplified in the presence of animal fat in the diet. The feed conversion ratio was unaffected by the type of fat in the diet. Results suggest that broilers can be fed with velvet beans up to 15% in the diet without any negative effect on performance. Results also showed that velvet beans contain a strong hypocholesterolemic effect in broilers which is unaffected by the type of fat in the diet.

Comprehensive Report of the Research

Location

The research was conducted at Sabaragamuwa University of Sri Lanka. Broiler feeding trials were conducted in the poultry unit of the Faculty Farm, Faculty of Agricultural Sciences of the university. This was recorded as the first research conducted in the Faculty Farm. Laboratory