Feed additives have become an essential component of feeds especially for monogastric animals. Uses of antibiotics are not always good for human health because of residual effects. Now phytogenic feed additives have gained increasing interest, especially for use in swine and poultry. Although birds raised with these feed additives achieved good performance, their potential side effects became a real public health problem worldwide. Feed additives are added in animal feed to improve their nutritive value, boost animal performance by increasing their growth rate, better feed conversion efficiency, greater livability and lowered mortality in poultry birds. Herbs could be expected to serve as feed additives due to their suitability and preference, lower cost of production, reduced risk of toxicity, minimum health hazards and environment friendliness. Herbs spices like ginger (Zingiber officinale) and garlic (Allium sativum) have been reported to possess useful pharmacological potent chemical substances for use in poultry.

Poultry meat and meat products are the essential part of human nutrition and have an important role mainly in developed countries. Garlic is well known as a spice and herbal medicine for the prevention and treatment of a variety of diseases ranging from infections to heart diseases. Garlic has been used for a variety of reasons which most of them have approved scientifically: as anti-atherosclerosis, anti microbial, hypolipidemic, anti thrombosis, anti hypertension, anti diabetes. Allicine possibly reduces LDL, triglyceride and cholesterol in serum and it has been used for cardiovascular diseases. Ginger and garlic as natural feed additives in poultry nutrition may be of great benefit and value especially for broiler growers. Hence the present research was carried out to study the effect of garlic supplementation on carcass characteristics in broilers.

**MATERIAL AND METHODS**

The biological experiment was conducted with ninety day old broiler Cobb 400 chicks. The chicks were wing banded and weighed individually, assigned randomly to three experimental groups with three replicates, each ten chicks per replicate. Completely randomized design was followed. The various experimental groups are as follows.

T1 - Standard broiler diet without garlic powder  
T2 - Standard broiler diet with 0.3 per cent garlic powder  
T3 - Standard broiler diet with 0.6 per cent garlic powder

The pre-starter, starter and finisher diets were fed to birds from 1 to 14, 15 to 28 and 29 to 42 days of age, respectively. The birds were housed in deep litter pens and reared under uniform standard managemental practices. The birds were fed with weighed quantity of experimental diets and had free access.
The weight of internal organs and carcass parameters of broilers are presented in Table-1.

The T2 and T3 groups dressing per cent (79.86±1.98; 77.28±0.95) eviscerated weight per cent (84.13±2.64; 82.33±3.94), weight of heart (0.42±0.64; 0.48±0.95), liver (1.84±1.95; 1.96±1.97) and gizzard (2.15±1.97; 1.90±1.74) as percentage of body weight were numerically high as compared to T1 group (76.42±0.88; 81.02±2.48; 0.42±0.64; 1.84±1.95; 1.62±5.36), respectively. Similarly, a non significant effect on broiler dressing percentage values due to the inclusion of garlic in the diet of broilers.

The abdominal fat as percentage of body weight was low in T2 (19.42±5.78) and T3 (20.64±2.92) group when compare to T1 (21.38±7.91) group. Fresh coded breast muscle samples were cooked at 10 psi pressure using domestic pressure cooker until the internal temperature of the breast muscles reached 80°C as measured by thermocouples inserted in to the centre of the muscle. The cooked samples were cut in to 1 cm slices and the samples were served to a panel of members (10 numbers) selected from the staffs of Veterinary College and Research Institute, Namakkal. They were provided with a score card of eight hedonic points to assess the colour, appearance, flavor, juiciness, tenderness and over all acceptability of the meat.

**STATISTICAL ANALYSIS:** The data collected on various parameters were statistically analyzed\(^6\) and the means of different experimental groups were tested for statistical significance by Duncan’s multiple range test\(^9\).

**RESULTS AND DISCUSSION**

The T2 and T3 groups dressing per cent (79.86±1.98; 77.28±0.95) eviscerated weight per cent (84.13±2.64; 82.33±3.94), weight of heart (0.42±0.64; 0.48±0.95), liver (1.84±1.95; 1.96±1.97) and gizzard (2.15±1.97; 1.90±1.74) as percentage of body weight were numerically high as compared to T1 group (76.42±0.88; 81.02±2.48; 0.42±0.64; 1.84±1.95; 1.62±5.36), respectively. Similarly, a non significant effect on broiler dressing percentage values due to the inclusion of garlic in the diet of broilers\(^10\)–\(^11\). The abdominal fat as percentage of body weight was low in T2 (19.42±5.78) and T3 (20.64±2.92) group when compare to T1 (21.38±7.91) group. Supplementation of the diets with garlic promoted similar carcass development as the control diet. The relative weights of the abdominal fat were numerically lower for broilers fed supplementary garlic compared with those fed the control diet. This suggests that garlic supplement could reduce fat deposition\(^12\). The effect of addition of garlic supplementation on sensory evaluation parameters of meat are presented in Table-2.

The sensory evaluation parameters like broiler meat texture and over all acceptability of garlic supplemented T2 (7.3±0.17; 6.6±0.22) and T3 (7.1±0.15; 6.4±0.19) group was significantly (P<0.05) better when compared to control T1 (6.7±0.24; 6.2±0.28) group, other sensory evaluation parameters such as appearance, flavor, juiciness and mouth coating were not influenced by addition of garlic. However, supplementation of 0.5 per cent garlic had highest garlic aroma\(^13\). The overall
acceptability and texture of the meat of the birds fed with garlic at 0.3 per cent were better than control diet and 0.6 per cent garlic supplemented diet.

Based on the results obtained, it can be concluded that supplementation of garlic powder improves the carcass quality such as dressing percentage and reduction in deposition of fat in abdomen. Also garlic supplementation improves the sensory characteristics such as texture and overall acceptability of the meat in broilers.

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REFERENCES