

## **Fatty acid profile in the breast and thigh muscles of the slow- and fast-growing birds under the same management system**

### **ABSTRACT**

The aim of the study was to assess the effect of feeding the same diet to different breeds of chickens and at different ages on fatty acid (FA) composition of the breast and thigh muscles. A total of 150 chickens comprising 50 each of red jungle fowl (RJ) and village chicken (VC), the slow-growing birds, and the commercial broiler (CB), fast-growing birds, were used for this study. Ten chickens from each breed were serially euthanized at days 1, 10, 20, 56, and 120 post hatch, and pectoralis major and bicep femoris were harvested to represent the breast and thigh muscles respectively. It was revealed that the breast muscle concentrations of saturated fatty acids (SFA), monounsaturated fatty acids (MUFA), and total polyunsaturated fatty acids (PUFA) are significantly different ( $p < 0.05$ ) among the breeds. Also, the FA composition of breast and thigh muscles among RJ, VC, and CB at various ages studied varied significantly ( $p < 0.05$ ) but without a definite pattern. The composition of MUFA was lower, but that of PUFA was higher in the RJ and VC than in the CB breast muscles. Within the breeds, the composition of total MUFA decreased, while that of PUFA increased with age. The total MUFA and PUFA showed no significant difference ( $p > 0.05$ ) between the breast and thigh muscles at different ages evaluated. This study suggests that slow-growing birds (RJ and VC) might be better sources of desirable FA than the fast-growing birds, CB.

**Keyword:** Pectoralis major; Bicep femoris; Lipids; Red jungle fowl; Village chicken and broiler chickens