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Communication

Relationship Between Chest Girth and Live Weight in Tankasa Sheep and Red Sokoto Goats –Validation Tests of Prediction Equations

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Small ruminants (sheep and goats) constitute the bulk of the meat supply (second only to cattle) and hide in Nigeria(Bukar *et al.* 1997). They are a ready source of funds in times of need and are readily affordable by even the low-income earners. The most numerous and well distributed breed of sheep in Nigeria is the Yankasa, while that of goats is the Red Sokoto. These breeds of small ruminants are sold at the market and at the site of slaughter slabs. One of the problems with the purchase of these animals is the subjective assessment of weight. Both buyers and sellers use the rather subjective method of sight and touch at the lumbar vertebrae.

While the use of weighing scales is common in the developed countries, the cost of a set of scales makes it impossible for the local dealers to procure one. Even though weigh bands are used in cattle, pigs and horses in these countries at a low cost, these tools are not readily available in Negeria. However, Osinowo *et al.* (1989) attempted to adopt this approach. Since animals may vary in size and shape with ecological niche, this study was undertaken as a validation test of their prediction equations.

One hundred and thirty one yankasa sheep and 109 Red Sokoto goats of live weight ranging from 2 – 53 and to10 – 42 kg, respectively were used in this study. In both groups, the relationship between chest girth (x, cm) and live weight (y, kg) was clearly curvilinear and was well defined by the following geometric regression equations (Osinowo *et al.* 1989).

1. Yankasa sheep: $Y = 0.00016x^{2.78}$, $r^2 = 0.99$
2. Red Sokoto goat: $Y = 0.0000658x^{3.038}$, $r^2 = 0.98$

Verification of both prediction equations showed close agreement between expected and actual live wight of goats ($r = 0.85$, $n = 109$) and sheep ($r = 0.97$, $n = 131$). The verification was carried out by taking the chest girth (cm) of the study animals, fixing the value into the regression equation and thus obtaining the expected weight. The expected values were then compared with actual weights of the same study animals using a weighing scale. Since there were close agreements between expected and the actual live weights, the prediction equations could be used for future estimation of bodyweight for these sheep and goats.

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