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The interval of clipping or dyebanding wool for measurement on one site on a sheep is limited, 'by the growth of wool, to four weeks or more. However, it should be possible to measure growth for shorter time if two sampling sites are used. For example, if dyebands are made on two different staples on the same sheep at 0, 4, 5 and 13 weeks as in figure 1 the relative wool growth in weeks 4-5 (y) can be computed from the equation

$$y = (b_{0-5} / b_{0-13}) - (a_{0-4} / a_{0-13}) \quad (1)$$

where a and b are wool grown in staples taken from sites A and B between weeks as indicated by subscripts.

Such a method was used to measure relative wool growth in both weight and length. Wool was dyebanded at two sites on nine sheep on weeks 0, 4, 5 and 13 as in figure 1. Four samples of wool from each site on each sheep were treated in a conventional manner (Kenney and Davis 1974) and relative growth of wool in weight was calculated using equation 1.

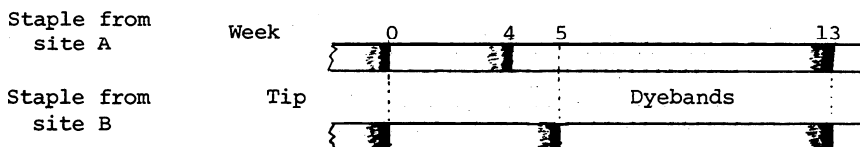


Fig. 1 Dyebands on two staples of wool.

Means of relative wool growth in week 4-5 from all sheep were 0.092 and 0.080 while the standard errors for the measurements for any one sheep were 0.020 and 0.005 for weight (4 samples) and length (20 samples or fibres) respectively. It would have been necessary to take sixteen times as many measurements for weight, as were taken, in order to achieve the same accuracy for weight as was achieved by measuring the length of twenty fibres.

As measurements of lengths of fibres as described here took only fifteen minutes per sample, this method offers a simple, relatively quick and accurate method of comparing elongation of wool for periods as short as one week. Further, as the ratio of length to mean diameter of wool grown on any one sheep appears to be constant (Downes and Sharry 1971) the weight of wool grown can be calculated from length measurements. As the standard error of weight measurements is large, the elongation measurement in most cases is probably adequate for weight also.

DOWNES, A.M., and SHARRY, L.F. (1971). *Aust. J. Biol. Sci.* 24: 117.
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