Calculating Adjusted Weaning and Postweaning Weights

60-day Adjusted Weaning Weights

I. Necessary Information:

1. Weight and age at weaning: should usually be between 30 and 90 days, and range should be one half to one third of this within a contemporary group)

2. Age of the dam

3. Type of birth and rearing

II. Calculations:

1. Calculate preweaning average daily gain (ADG) as:

   (weaning wt - birth wt) / weaning age

   [Can use preweaning weight per day of age (WDA) if birth weight was not measured: WDA = weaning wt / weaning age]

2. Correct observed weaning weight to a predicted weight at 60 d as:

   age-corrected weaning wt = preweaning ADG * 60 + birth wt

   if birth weight was measured, or as :

   age-corrected weaning wt = preweaning WDA * 60

   if birth weight was not recorded.

3. Adjust the age corrected weight for ewe age and type of birth and rearing using multiplicative adjustment factors:

   final adjusted wt = age-corrected weight x adjustment factors

III. Example #1:

1. A ewe lamb with a birth weight of 16 lb and a weight at weaning of 59 lb at 74 days of age, dam was 9 years old, lamb was born and reared as a twin

2. Preweaning ADG was (59 - 16) / 74 = .581 lb/d

3. Age-corrected weaning wt = (.581 x 60) + 16 = 50.9 lb

4. Adjustment factor for lambs out of ewes over 6 years old and born and reared as twins is 1.25, so:

   adjusted 60-d weaning wt = 50.9 x 1.25 = 63.6 lb

Calculating 120-day Adjusted Postweaning Weights

I. Necessary information:

1. Adjusted weaning weight

2. Postweaning weight

3. Number of days between the weaning and postweaning weights: should usually be at least 30 d and is seldom longer than 90 d in farm flocks.

II. Calculations:

1. Calculate postweaning ADG as:

   postweaning ADG = (actual postweaning wt - actual weaning wt) / (no. of days between wts)

2. Multiply postweaning ADG by the standard postweaning gain interval, in this case 60 d, to get the total postweaning gain:

   total gain = postweaning ADG x 60

3. Calculate the 120-d adjusted postweaning wt by adding the total postweaning gain to the adjusted 60-d weaning wt. The assumption here is that ewe age and type of birth and rearing affects preweaning growth, but not postweaning growth (may not be true for all production situations).

III. Example: continuing with the example above:

1. Adjusted 60-d weaning wt is 63.6 lb

2. Assume the postweaning ADG was .58 lb/day

3. 60-d postweaning gain is:

   .58 x 60 = 34.8 lb

4. Adjusted 120-d postweaning wt is:

   34.8 + 63.6 = 98.4 lb

ADJUSTMENT FACTORS

I. Multiplicative adjustment factors to correct for effects of lamb sex, ewe age, and type of birth and rearing on weaning weights.

		Type of birth and rearing						
Sex	Ewe age	1,1	1,2	2,1	2,2	3+,1	3+,2	3+,3+
Ewe	1	1.14	1.30	1.27	1.37	1.36	1.46	1.56
	2	1.06	1.21	1.18	1.27	1.26	1.36	1.45
	3-6	1.00	1.14	1.11	1.20	1.19	1.28	1.37
	over 6	1.04	1.19	1.15	1.25	1.24	1.33	1.42
Ram	1	1.04	1.18	1.15	1.24	1.23	1.33	1.42
	2	.96	1.10	1.07	1.16	1.15	1.23	1.32
	3-6	.91	1.04	1.01	1.09	1.08	1.16	1.25
	over 6	.95	1.08	1.05	1.14	1.13	1.21	1.30
Wether	1	1.11	1.26	1.23	1.33	1.32	1.42	1.51
	2	1.03	1.21	1.14	1.23	1.22	1.32	1.41
	3-6	.97	1.11	1.08	1.16	1.15	1.24	1.33
	over 6	1.01	1.15	1.12	1.21	1.20	1.29	1.38

II. Adjustment factors to correct for effects of ewe age on litter size.

Age of ewe at lambing	Multiplicative adjustment
1	1.48
2	1.17
3	1.05
4	1.01
5	1.00
6	1.00
7	1.02
8	1.05
>8	1.13

III. Adjustment of fleece weights for age at shearing (for animals being shorn for the first time) or time between shearings (for older animals), and for age in years in older animals.

A. For animals being shorn for the first time, adjust the observed fleece weight to a yearling (365-d) basis as:

Adj. Fleece Wt = (Actual Fleece Wt) - k*(Age - 365)

where k = .040 for ram lambs, and
k = .030 for ewe lambs

B. For older animals that have been shorn before, adjust the observed fleece weigh to a 365-d shearing interval assuming linear growth in fleece weight between shearings:

Adj. Fleece Wt = (Actual Fleece Wt) / (Time between Shearings) x 365

C. Yearlings and older animals are placed in different contemporary groups, because they are commonly treated differently. However, among older animals, fleece wt is also adjusted for age in years using the following multiplicative adjustment factors:

Animal age	Multiplicative adjustment
2	1.07
3	1.02
4-5	1.00
6-7	1.03
>7	1.05

IV. Adjustment of fiber diameter for age at shearing in lambs being shorn for the first time.

For lambs being shorn for the first time, adjust the observed fiber diameter to a yearling (365-d) basis as:

Adj. Fiber Diameter = (Actual Fiber Diameter) - k*(Age - 365)

where k = .0127 for both rams and ewes.