# Weight Trait EBVs

## What They Do:

Estimated Breeding Values (EBVs) based on weight measurements are designed to separate the effects of environment from those of genetics on an animal's growth from birth to adulthood. Commonly, these EBVs are used to estimate growth during specific stages of a young lamb's life: birth, weaning, and post-weaning. The Birth Weight EBV (BWT) estimates the portion of a lamb's birth weight that is due solely to its genetics for growth, apart from the effects of the prenatal environment. Similarly, Weaning Weight EBV (WWT) provides an estimate of the genetic potential for growth from birth to weaning excluding influences of dam's milk production and creep feeding. The Post-Weaning Weight EBV (PWWT) combines information on pre-weaning and post-weaning weight to predict genetic potential for growth to 120 days independent of maternal influences.

## How to Measure:

Most flocks collect weights at least twice, at birth and at weaning. Accuracy of Weight Trait EBVs is increased when post-weaning weights are also taken. Birth weights should be recorded within 24 hours of birth. Weaning weights, often referred to as 60-day weights are taken ***on all the lambs in a contemporary group on the same day*** when the majority average 60 days of age and all are between 40-90 days of age. Lambs do not have to be weaned at this time. Early post-weaning weights are taken ***on all the lambs on the same day*** when the majority average 120 days of age and all are between 90-150 days of age. The accuracy of Weight Trait EBVs is improved when there is a wider range of differences in weight between lambs. By including both poor growers and fast growers, extremes in growth can be distinguished from the average.

## How They Are Applied:

Weight Trait EBVs are measured in kilograms above (+) or below (-) the breed average for that trait. For example, a breeding ram with a WWT EBV of 2.8 has the genetic potential to be 2.8 kg (6.2 lbs.) heavier at weaning than the average for the breed. Because a lamb inherits half of its genetics from its sire, its offspring are expected to be 1.4 kg (3.1 lbs.) heavier than the breed average. In practice, Weight Trait EBVs can help you meet marketing goals by using genetics to not only help reach target market weight, but also the speed it takes to reach that weight. For instance, if you are selling market lambs at weaning, selection for higher WWT EBVs would produce heavier lambs at an earlier age. If you are selling 100 lb. market lambs, a focus on higher PWWT EBVs would be more helpful.

## Things to Consider:

Selecting for extremes in growth, as in any trait, can have unintended consequences. Lambs with high Weight Trait EBVs will reach market weight sooner, but may require supplemental nutrition to reach ideal market condition. In general, higher Weight Trait EBVs will tend to move your flock toward a larger frame and mature size, and delayed sexual maturity. Conception rates among ewe lambs could be affected by delayed sexual maturity. Because all Weight Trait EBVs are correlated, selecting for increased WWT and PWWT will likely increase birth weights in their offspring. This may result in larger lambs and increased risk of difficult births (dystocia). Selection for low birth weight EBVs, however, may result in lambs that are small with decreased vigor and lower survival. One solution is to use Yearling Weight (YWT) EBV, together with WWT and PWWT EBVs to help control escalation of body size and its undesirable consequences.