

SIL Fact Sheet

2010 changes to SIL Growth & Meat indexes

28-nov-2010

What has changed?

- SIL has revised Meat indexes to focus on tissue yields rather than weights.
- Yields are independent of carcass size. Yield = tissue weight divided by carcass weight.
- Lean yield is now split into 3 regional yields for the shoulder, loin & hindquarter.
- Negative pressure on fatness is maintained for TS sheep but removed for DP sheep.
- Weighting on CW eBV in the Lamb Growth index has increased to account for the size effect being removed from the Meat index.
- The adult size penalty for DP sheep has been moved out of the Growth index into a new **Adult size index (DPA)**. **DPG** is now **Lamb Growth**.
- SIL recommends the old indexes & eBVs be used to market 2009 born rams.

Why the change?

- **Remove confusion** – SIL had too many indexes that were similar yet different. There needs to be one index per trait per sheep type. As well, the DP Growth index bundled Lamb Growth merit with the Adult Size penalty making it difficult to be sure of merit for either component.
- **Improve Relevance** – the old SIL Meat index was based on research from the early 1980's. Much has changed since then. Meat companies are bringing in carcass yield premiums and industry want that focus.
- **Address farmer concerns** – farmers have been telling SIL that the old Meat index favoured the wrong body type for productive ewes. The main concern was low levels of fatness being seen as “desirable” under the old Meat index. Another concern was that the need for a ewe size penalty was not universal. Some wanted to ignore it while others thought it relevant – it depended on the situation a rams daughters would be used in

What is the impact on figures I see?

- Most of the changes seen are between sub-indexes. Generally Meat indexes decrease in both size & variability while growth indexes increase in size & variability.
- However, animals previously of very high merit for Meat may drop a lot. We think this is because “size” was double counted (in both the Growth & Meat indexes) to some extent. Size or Growth effects are now accounted for entirely in the Growth indexes.
- For TS sheep the overall effects are near neutral on average – some sheep will go up in overall ranking while others will go down.
- Average effects for DP sheep are not neutral, because the fatness penalty is removed.
- DP & TS Meat Yield rankings change compared to old Meat rankings where animals have high lean tissue weight for their size (high yield which is good) or low tissue weight for their size (low yield which is not so good).
- DP Meat Yield rankings rise compared to old Meat rankings if animals have positive fat weight eBVs but decline if they have negative fat weight eBVs.
- Growth indexes will rise for DPG & TSG animals with high growth merit due to extra weighting put on carcass weight (CW eBV).

- Growth indexes for DP sheep with high growth eBVs will be a lot larger due to the separation of adult size penalty from lamb growth. However, large, positive DPG (Lamb Growth) indexes will most often be associated with large, negative DPA indexes. This is not a new effect – it is simply made more obvious with the new indexes.

Why do some animals change a lot while others do not?

- Animals changing a lot have unusual relationships between different eBVs.
- Several reasons why eBVs and indexes change are described below. Relevance of these to different sheep types (DP & TS) is annotated.
 - For TS and DP sheep, Meat Yield indexes decline where sheep have low LEAN weight for their size, and rise if they have high LEAN weight for their size – this rise may be in absolute terms or relative to other animals,
 - For DP sheep - Removal of the fatness penalty causes indexes of very low fat sheep to decrease (previously they were rewarded for low fat), while indexes of fatter sheep increase (previous penalized for high fat).
 - Overall DP indexes decline because of removal of the penalty on fat. This means more DP animals will decrease than increase. This is most noticeable in low fat sheep.
 - Splitting the “old DPG” into Lamb Growth (DPG) and Adult size (DPA) causes DPG to rise for animals with high growth eBVs but usually this is associated with a large, negative DPA index reflecting costs of carrying large ewes.
 - More animals will have negative Meat Yield indexes and eBVs than with the old Meat indexes and eBVs. This is because the old Meat index strongly favoured size, such that some large sheep with low lean yield had good “old” Meat indexes. Their Meat index was dominated by lean weight, not lean yield. Size effects in the old Meat index have moved to the new lamb growth index – DP & TS.
 - The new Meat Yield index focuses on tissues yields (kilogram of tissue per kilogram of carcass). Small sheep can have high yielding carcasses - DP & TS.

How do I explain this to ram buyers?

- The new indexes should better address their needs.
 - Lamb Growth (DPG or TSG) is all about growth rate and carcass size,
 - Adult Size (DPA) is about the consequences of ewes getting bigger. This should be separated from Lamb Growth because it is not an issue for some ram buyers.
 - Meat Yield (DPM or TSM) is focused on carcass tissue yield. This is how many lamb carcasses are graded and returns a premium in the current market. By not being masked by size effects as it was in the old Meat index, this trait is independent of carcass size. It will allow genotypes of all sizes to clearly show their merit for yield.
 - **HOWEVER**, change from tissue weights to tissue yields for carcass merit assessment has a downside. More sheep will display negative eBVs or Meat Yield indexes than with the old eBVs and old Meat index. This is because the new index focuses on something the old index did not. Previously, some high Meat index animals had above average lean weights but were below average for lean yield (lean weight below average for their size) – TSM & DPM
 - Remember, there is no longer a penalty for fatness for DP sheep (in DPM) but there is still a fatness penalty for TS sheep (TSM)