

Dag Score

SIL Technical Note

Relates to: Selection to reduce dagginess

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Summary

Dags are a significant cost to sheep farmers. A variety of environmental factors can lead to sheep scouring and dags forming on the wool on their backsides.

Genetic selection can reduce the incidence of dags in a flock. SIL provides sheep breeders with a simple scoring system combined with an advanced genetic evaluation system, to most accurately predict genetic merit for dagginess.

Background

Dags are a significant cost to sheep farmers. Both through the cost of dagging and through the reduced value of associated wool.

Dagginess is a complex trait. A variety of environmental factors can lead to sheep scouring and dags forming on the wool of their backsides. These include changes in feed, internal parasites, ryegrass staggers and mineral imbalances. It is thought that some sheep have a more sensitive gut and such factors trigger scouring more readily so they become daggy.

This is borne out by practical observations of breeders and scientific studies that show that there is a genetic predisposition to dagginess. Sheep that are daggy are more likely to have relatives that are also daggy than sheep that are not.

Rather than worry about the reason for dagginess (or dags), some farmers have adopted the philosophy of selecting or culling sheep on the basis of dags in order to reduce the problem in their flock in the long-term.

SIL offers the means to reduce incidence of dags through genetic selection. Using dag scores assessed on young replacement stock and the pedigree information SIL can predict the genetic merit for dagginess in these sheep and their relatives. This information can be incorporated into SIL indexes for overall economic merit with an appropriate economic weighting for the impact it has on overall profit compared to other traits.

Genetics of resistance

Dagginess is moderately heritable at about 30%. There is only a weak genetic relationship with major production traits. So selection to reduce dags will have little impact on the response to selection for productive traits.

Selecting for reduced dag score

Lambs are assessed for dag score under common conditions just after weaning (DAG3) and later in the autumn (DAG8). Adult ewes can be assessed when there is good variation present in dagginess (DAGMA). This information is used to predict genetic merit of each sheep for dag score.

Recording Dag Score data

The Dag Score scale - SIL uses a 6-point scoring scale ranging from 0 (no dags) to 5 (very daggy) as shown in the diagram below. The key is to be consistent when scoring a mob of sheep and for these sheep to have been run under similar conditions. You can see that the example Dag Score scale given below shows the degree or extent of faecal contamination of the fleece. This should not be confused with urine stain in ewe lambs and hoggets. The best way to achieve consistency is practice! Use of a diagram for reference while you are gaining experience is recommended. Do not be unduly worried about variation in the way the scores are applied between years or between flocks. During the genetic evaluation SIL will remove the effects of differences between years and flocks.

Contemporary group - What SIL does need to know is what differences there are between groups of animals that are Dag Scored within a year. These may be due to different management mobs (feeding/drenching or a different operator scoring them for dagginess.. Assign a mob code if groups of animals have been managed differently prior to dag scoring – for example whether some sheep were crutched or drenched while some were not, and on the basis of who performed the dag score. If you are unsure how to code the data in the best way, speak to your SIL bureau.

When to collect data - SIL can use two scores of dagginess to predict genetic merit for Dag Score in young animals and repeated dag scores on adult ewes. You do not have to record both dag scores on young animals but the accuracy is higher if you record both. The first lamb score is collected soon after weaning (DAG3), generally from December to February. The second is collected in the autumn at approximately 8 months of age (DAG8), generally from March to May. Typically lambs have NOT been crutched prior to DAG3, while they are crutched after that and well before DAG8 data is collected.

Adult dag score can be assessed annually whenever there is a good degree of variation in dag score and animals have been managed under similar conditions

The effect of drenching - Animals can scour for many reasons other than internal parasites. There is no need to avoid drenching in order to seriously challenge sheep to scour. However, in order to get the best discrimination for genetic merit for Dag Score, we should aim to get about 50% of sheep with a Dag Score greater than zero. Any less will make it hard to discriminate the sheep less prone to dags from those more prone to dags. You can crutch and drench sheep after scoring them.

Genetic evaluation

SIL predicts breeding values (BV) for Dag Score for lamb dag score (LDAG) and adult dag score (ADAG). Lower breeding values for dag score show a lower predisposition to produce dags, higher values indicate a greater predisposition to produce dags.

SIL uses the performance on individuals and its relatives in genetic evaluations. So genetic merit for Dag Score can be predicted for sheep that have not been tested themselves AND an animal's BVs are influenced by the performance of its relatives.

Reporting on Dag Score

SIL recommends reporting dag score as the Dual Purpose Dag sub index (DPD) – a higher value indicates higher merit and hence value for that trait. It also has the advantage of showing the relative contribution of the trait to the overall index as all trait subindexes are expressed in cents. The units for all sub-indexes are the same –cents per ewe lambing so larger, positive values are better. The economic weights associated with dag score are based on the costs of crutching sheep and the reduced value of daggy wool.

Dag score versus resistance to internal parasites

Dag score economic weights DO NOT take account of costs associated with internal parasites. Breeders wishing to address parasite resistance should consider using the WormFEC sub-index based on faecal egg counts (FEC) to address this. The Dag Score and WormFEC sub-indexes are independent so they can be used in the same genetic selection programme and the same overall index.

Dag score is a useful trait when selecting for parasite tolerance or resilience. A separate technical note addresses this in more detail. To summarise, if you want to select for parasite tolerance (or resilience), you should select for production traits (some or all of Growth, Wool, Meat, Reproduction and Survival), together with selection to reduce both faecal egg counts and dag score.

Need more information?

Contact your SIL bureau, local SIL adviser or call 0800-745-435 (0800-SIL-HELP).

SIL Dag Score chart

Use this chart for scoring sheep for dags. Note that zero is for “no dags” while 5 is for most daggy. You can use fewer scores but SIL does not recommend using less than a four point scale (zero plus 3 grades of dagginess).

SIL Dag Score Scale

