

## DESCRIPTION OF NATIONAL GENETIC EVALUATION SYSTEMS

<b>Country (or countries)</b>	BELGIUM (Walloon Region)
<b>Main trait group<sup>1</sup></b>	Prolificity
<b>NOTE!</b> Only one trait group per form!	
<b>Breed(s)</b>	Bleu du Maine, Hampshire, Ardennais Roux, Suffolk, Texel (Texel Belge, Texel Français and Texel Bleu standards), Vendéen, Charollais, Ile de France, Swifter, Rouge de l'Ouest, Zwartbles, Kerry Hill, and Charmoise
<b>Trait definition(s) and unit(s) of measurement<sup>2</sup></b> Attach an appendix if needed	Number of lambs per ewe For Suffolk and Texel (Texel Belge Standard), two traits are considered according to the type of estrus (natural or induced by PMSG).
<b>Method of measuring and collecting data</b>	Information provided by breeders on a voluntary basis
<b>Time period for data inclusion</b>	All available data since 1989
<b>Age groups (e.g. parities) included</b>	All
<b>Other criteria (data edits) for inclusion of records</b>	Valid birth date, valid identification of dam, only lambing from natural estrus or from estrus induced by PMSG
<b>Criteria for extension of records (if applicable)</b>	N/A
<b>Sire categories</b>	All
<b>Environmental effects<sup>3</sup>, pre-adjustments</b>	No pre-adjustments
<b>Method (model) of genetic evaluation<sup>3</sup></b>	One model per breed <ul style="list-style-type: none"> <li>- For the breeds Suffolk and Texel (Texel Belge Standard) only: 2-traits animal model (no. of lambs from natural estrus and no. of lambs from estrus induced by PMSG)</li> <li>- For all the other breeds: single trait animal model (no. of lambs).</li> <li>- For the breeds Bleu du Maine, Hampshire, Ardennais Roux, Suffolk, Texel (Texel Belge and Texel Français standards), Vendéen, the model includes an additive genetic effect and a permanent environmental effect.</li> <li>- For the breeds Charollais, Ile de France, Swifter, Rouge de l'Ouest, Zwartbles, Texel (Texel Bleu standard), Kerry Hill, Charmoise, the model includes only an animal effect.</li> </ul>
<b>Environmental effects<sup>3</sup> in the genetic evaluation model</b>	Intercept (F) Age of the ewe (4 classes) (F) Period of lambing (9 periods of 2 weeks defined from the start of the year of lambing) (F) Year of lambing (F) Flock (flocks with less than 5 observations are assigned to one of the 4 groups of flocks based on their prolificity) (F) Year of lambing x flock (R)
<b>Adjustment for heterogeneous variance in evaluation model</b>	No

<b>Use of genetic groups and relationships</b>	All known relationships among animals are considered. No genetic groups.
<b>Blending of foreign/Interbull information in evaluation</b>	N/A
<b>Genetic parameters in the evaluation</b>	See appendices GE
<b>System validation</b>	Trends Validation
<b>Expression of genetic evaluations</b> If standardised (e.g. RBV), give standardisation formula in the appendix	<ul style="list-style-type: none"> <li>- EBV's for prolificacy are computed and transformed to RBV (average 100, SD 10) for the following breeds: Bleu du Maine, Hampshire, Ardennais Roux, Suffolk, Texel (Texel Belge and Texel Français standards), Vendéen</li> <li>- Prolific capacities (defined as the solution of the non-genetic animal effect from the model) are computed for the following breeds: Charollais, Ile de France, Swifter, Rouge de l'Ouest, Zwartbles, Texel (Texel Bleu standard), Kerry Hill, Charmoise</li> </ul>
<b>Definition of genetic reference base</b>	All ewes of the breed born 6, 5, and 4 years before the current year (e.g., in 2018, the genetic base was ewes born in 2012, 2013 and 2014)
<b>Next base change</b>	Base changes every year
<b>Calculation of reliability</b>	Reliabilities are calculated from PEV obtained by direct inversion of the coefficient matrix (only for breeds with EBV's)
<b>Criteria for official publication of evaluations</b>	$R \geq 35\%$
<b>Number of evaluations / publications per year</b>	1
<b>Use in total merit index<sup>4</sup></b>	N/A
<b>Anticipated changes in the near future</b>	No changes
<b>Key reference on methodology applied</b>	-
<b>Key organisation: name, address, phone, fax, e-mail, web site</b>	Elevéo Asbl 4, rue des Champs Elysées B-5590 Ciney Tél.: +32 (0)83 23.06.40 FAX: +32 (0)83 23.06.76 <a href="mailto:cbastin@awenet.be">cbastin@awenet.be</a> ; <a href="mailto:pmayeres@awenet.be">pmayeres@awenet.be</a> <a href="http://www.awenet.be">www.awenet.be</a>

1) Either: Production (e.g. milk, fat, protein), Conformation, Health (e.g. mastitis resistance, milk somatic cell, resistance to diseases other than mastitis), Longevity, Calving (e.g. stillbirth, calving ease), Female fertility (e.g. non-return rate, interval between reproductive events, number of AI's, heat strength), Workability (e.g. milking speed, temperament), Beef production, Efficiency (e.g. body weight, energy balance, body conditioning score), or Other traits.

2) Indicate frequencies per category if the trait is categorical and specify transformation of data if practiced.

3) Use abbreviations for most common effects (see document with list of abbreviations at [http://www-interbull.slu.se/service\\_documentation/General/list\\_of\\_abbreviations.rtf](http://www-interbull.slu.se/service_documentation/General/list_of_abbreviations.rtf)) and indicate random (R) or fixed (F).

4) Please give economic weights and indicate how they are expressed (preferably in genetic standard deviation units).

## Parameters used in genetic evaluation

<b>Country (or countries):</b>	BELGIUM (Walloon Region)
<b>Main trait group:</b>	Prolificity
<b>Breed (repeat as necessary):</b>	Bleu du Maine, Hampshire, Ardennais Roux, Suffolk, Texel (Texel Belge and Texel Français standards), Vendéen

## Heritabilities and genetic variance

Trait	Breed	h <sup>2</sup>	Genetic variance
No. of lambs	Bleu du Maine	3%	0.01425
No. of lambs	Hampshire	10%	0.02718
No. of lambs	Ardennais Roux	6%	0.01635
No. of lambs from natural estrus	Suffolk	6%	0.01736
No of lambs from estrus induced by PMSG	Suffolk	6%	0.02331
No. of lambs from natural estrus	Texel (Texel Belge standard)	10%	0.02776
No of lambs from estrus induced by PMSG	Texel (Texel Belge standard)	6%	0.02506
No. of lambs	Vendéen	4%	0.01489
No. of lambs	Texel (Texel français standard)	8%	0.02643

## Genetic correlations (heritabilities on diagonal)

<b>Suffolk</b>	No. of lambs from natural estrus	No of lambs from estrus induced by PMSG
No. of lambs from natural estrus	0.06	0.771
No of lambs from estrus induced by PMSG		0.06

<b>Texel (Texel Belge standard)</b>	No. of lambs from natural estrus	No of lambs from estrus induced by PMSG
No. of lambs from natural estrus	0.10	0.775
No of lambs from estrus induced by PMSG		0.06

### Parameters used in genetic evaluation

**Country (or countries):** BELGIUM (Walloon Region)  
**Main trait group:** Prolificity  
**Breed (repeat as necessary):** Charollais, Ile de France, Swifter, Rouge de l'Ouest, Zwartbles, Texel (Texel Bleu standard), Kerry Hill, and Charmoise

### Ratio of the animal variance on the total variance and variance of the animal effect

Trait	Breed	Ratio	Animal variance
No. of lambs	Charollais	12%	0.04902
No. of lambs	Ile de France	12%	0.02245
No. of lambs	Swifter	10%	0.06866
No. of lambs	Rouge de l'Ouest	8%	0.02825
No. of lambs	Zwartbles	3%	0.01206
No. of lambs	Texel (Texel Bleu standard)	7%	0.01948
No. of lambs	Kerry Hill	30%	0.06402
No. of lambs	Charmoise	9%	0.01843