News - NAV routine evaluation
15 October 2009

The latest NAV routine evaluation for yield, fertility, type, udder health, other diseases, calving traits, milk ability, temperament, growth and NTM took place as scheduled. NAV carried out three evaluations per trait group:

Holstein evaluation, including data from: Danish Holstein, Danish Red Holstein, Swedish Holstein, Finnish Holstein, Finnish Ayrshire and Finn Cattle.

Red Dairy Cattle evaluation, including data from: Danish Red, Swedish Red, Finnish Ayrshire, Finnish Holstein and Finn Cattle.

Jersey evaluation, including data from: Danish Jersey and Swedish Jersey (only yield and type).

Extraction dates
Dates for extraction of data from national databases are given in table 1.

Table 1. Dates for extraction of data from the national databases

Trait	Denmark	Finland	Sweden
Yield	08.09.2009	06.09.2009	06.09.2009
Type, milk ability and temperament	21.09.2009	06.09.2009	31.08.2009
Fertility	08.09.2009	06.09.2009	04.09.2009
Udder health and other disease	15.09.2009	06.09.2009	04.09.2009
Calving	15.09.2009	06.09.2009	04.09.2009
Growth	09.09.2009	06.09.2009	01.09.2009

News in relation to NAV genetic evaluation
Type
Data for Swedish Jersey cows was included in the evaluation for type traits

Growth
A joint Nordic evaluation for growth was introduced for Jersey, RDC and Holstein (more details below)

Other traits
No changes

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 15.10.2004 to 15.10.2006 in the genetic base (average 100).

For functional traits, sire models are used and EBVs for cows are not estimated. For functional traits, the genetic base includes bulls, which are sires of present cows – see table 2.

Table 2. Definition of genetic base for cows and bulls

Trait	Genetic base
Yield, type, milk ability and temperament	Cows born 15.10.2004 -15.10.2006
Fertility, calving, mastitis resistance and resistance against other diseases	Bulls born 15.10.2000 -15.10.2002

Publication of NTM
A bull gets an official NTM, when the bull has official EBVs for yield, type and mastitis.

Growth
The joint Nordic growth index combines EBVs for daily carcass gain (CG) and carcass conformation score (CS). The evaluation is a multiple trait animal model using information from fattening bulls. Finland has data registered since 2005, Sweden since 1995 and Denmark since 1990. The carcass gain is divided in carcass gain for a short intensive fattening period (CGS, up to 550 days at slaughter) and a long extensive (CGL, more than 550 days). Fat score (FS) is used as an indicator trait. Heritabilities for growth traits are presented in table 3. Red Holstein data is analyzed together with Holstein data.

Table 3 Estimated heritabilities for growth traits

	RDC	Holstein	Jersey
Carcass gain short	0.28	0.36	0.22
Carcass gain long	0.32	0.29	-
Carcass conformation	0.29	0.29	0.16
Fat score	0.18	0.23	0.11

The carcass gain traits are spilt in two, one for a short intensive fattening period and the other for a long extensive. This is done to take the differences in variances and heritabilities between CGS and CGL into account. It is important to notice that the genetic correlation between CGS and GGL is high (0.97-0.98). The genetic correlation between Carcass gain traits and Carcass conformation varies between 0.32-0.41. The genetic correlations between Fat score and the three Carcass traits vary between 0.16-0.31. Detailed information about the genetic model can be found in Johansson et al, 2009 (http://www.nordicebv.info/Publications/English/publicatuions+ny.htm).

Economic values in growth Index
The growth information is combined in an index with economic weights in Euros using the following formulas:
Growth index for Holstein = 100.65*CGS+100.65*CGL+13.8*CS
Growth index for RDC = 111.4*CGS+111.4*CGL+13.6*CS
Growth index for Jersey = 45.6*CGS+10.1*CS

Economic values is from the NTM report (Pedersen et al., 2008, http://www.nordicebv.info/Publications/English/publicatuions+ny.htm)

The growth index for bulls is published when the reliability is at least 50% for Jersey and 60% for the other breeds (RDC, Holstein and Red Holstein)

Comparison with national evaluations
The correlation between EBVs from the NAV growth model and the old national evaluations are high (Table 4).

Table 4 Correlations between EBVs from the NAV model and old national models. Finland did not have a national evaluation.

	Denmark			Sweden	
	RDM	Holstein	Jersey	SRB	Holstein
Carcass gain	0.86	0.91	0.89	0.93	0.91

Carcass conformation	0.98	0.98	0.89	0.97	0.95
Growth	0.93	0.94	0.75	0.90	0.90

NAV – frequency and timing of routine runs

NAV performs 6 evaluations per year for all traits. The NAV evaluations are timed in a way that NAV can deliver updated EBVs to all the international evaluations. In Table 5, the current and future NAV and INTERBULL release dates are shown.

Table 5. NAV and INTERBULL release dates in 2009. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

	2009	
Month	NAV	INTERBULL
January	15	13
February		
March	**13**	
April		7
May	15	
June		
July		
August	**18**	18
September		
October	15	
November		
December	**1**	

You can get more information about the joint Nordic evaluation:

General about Nordic Cattle Genetic Evaluation: www.nordicebv.info
Contact person: Gert Pedersen Aamand, Ph.: +45 87405288 gap@landscentret.dk,

Denmark: www.landscentret.dk/nav
Contact person: Ulrik Sander Nielsen, Danish Cattle, Ph. +45 87405289, usn@landscentret.dk

Sweden: www.svenskmjolk.se
Contact person: Jan-Åke Eriksson, Swedish Dairy Association, Ph. +46 08-790 58 67
jan-ake.eriksson@svenskmjolk.se

Finland: www.faba.fi
Contact person: Jukka Pösö, Faba Service, Ph +358-(0)207472071 jukka.poso@faba.fi