Summary from workshop 14 January 2016

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The aim for the group work was to give:
1. Final recommendation in relation to Youngstock survival (YSS)
2. Final recommendation in relation to Functional udder
3. Open discussion in smaller groups about an efficient cow

Youngstock survival

All three breeds recommended including YSS as a sub-index in NTM from 2016.

All three breeds wanted to apply the recommend relative weight for YSS, but RDC wanted to modify the weight on Yield and Udder conformation to ensure the genetic trend for these two traits group will be unchanged when YSS are included in NTM

Table 1. Weigting of sub-indices in NTM.

	RDC		Holstein		Jersey		Red Holstein	
	Current NTM	New NTM incl YSS**	Current NTM	New NTM incl YSS	Current NTM	New NTM incl YSS	Current NTM	New NTM incl YSS
Yield*	0.96/0.88	1.06/0.97	0.75/0.68	0.75/0.68	0.87/0.78	0.87/0.78	0.75/0.68	0.75/0.68
Growth	-	-	0.06	0.06	0.00	0.00	0.11	0.11
Fertility	0.26	0.26	0.31	0.31	0.20	0.20	0.23	0.23
Birth	0.14	0.14	0.15	0.15	0.06	0.06	0.17	0.17
Calving	0.12	0.12	0.17	0.17	0.06	0.06	0.17	0.17
Udder health	0.32	0.32	0.35	0.35	0.44	0.44	0.35	0.35
Other diseases	0.12	0.12	0.11	0.11	0.04	0.04	0.12	0.12
Claw health	0.05	0.05	0.08	0.08	0.05	0.05	0.10	0.10
Longevity	0.07	0.07	0.11	0.11	0.08	0.08	0.11	0.11
Body conformation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feet & legs conformation	0.09	0.09	0.12	0.12	0.04	0.04	0.15	0.15
Udder conformation	0.32	0.37	0.25	0.25	0.26	0.26	0.24	0.24
Milking speed	0.10	0.10	0.08	0.08	0.10	0.10	0.08	0.08
Temperament	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Youngstock survival	-	0.23		0,14		0.12		0,14

*Weight factor for bulls/weight factor for cows with own yield record, but without genomic information
** All weight factors for RDC will be modified by NAV to ensure the SD of NTM is not influenced by the relatively increased weight on yield and udder

Functional udder

Holstein and RDC recommended keeping weights used in overall udder index unchanged. Jersey has based on decisions taken at the NAV workshop 2015 introduced new weights in overall udder conformation in November 2015.

Efficient cow

A short introduction about possibilities to breed for a more efficient cow in relation to feed costs and size/conformation was given. After that open discussions took place in smaller groups (5-6 persons representing different countries and organizations) within each breed-group. Below is a brief overview of the thoughts and ideas from different groups on the suggested questions and some general comment from organizer of workshop.

1. Is it desirable that cows are getting larger? Why/why not?

RDC:
- More uniform size important, but not higher or smaller in average
    - Larger cows not good because higher maintenance requirement
    - Change so that Frame describes size better than today

JER:
- No bigger cows but not smaller either
    - No genetic change the last years in stature, but phenotypic

HOL:
- Cows should not be bigger and not smaller (trend stable last years)
    - Most farmers don't want bigger cows, give problems
    - Few farmers wants bigger for show.
- Mixed feeling – compact cows could be more efficient but depend on meat price (SWE very high currently)
- More uniform, medium-sized is good
- Dairy type but more balanced = "dairy strength"
- Frame is good for farmers to use – breeding plans/corrective mating

Comment: All breeds seemed satisfied with the current size of the breed but cows should not get bigger. It is important to monitor stature. It would be nice to get more uniformed cows (corrective mating, less use of the really big animals within breed). Frame should better describe size of cows for all breeds.

2. Could size of cows be used as predictor of an efficient cow?

RDC:
- Not at the moment - has to be seen as a part of feed efficiency index but not alone
- Yes, size in relation to production could be useful

JER:
- Yes, but there are questions to answer regarding definition i.e. should size be height or weight?
- Efficiency could be measured as Longevity and other functional traits!

HOL:
- Yes, as predictor but real feed-efficiency would be better
- Size in relation to production could be used
- Perhaps, need more data and analyses
- Difficult with feed efficiency measures, wants to see some results first.
- Better to improve longevity (management) = efficient cows

Comment: All breeds wants to see more result on feed-efficiency and also more analysis on the relation between size and production/efficiency before considering size as a tool to improve efficiency. Best way to

improve efficiency is probably by changing management to keep cows longer in herd. Can we contribute to this?

3. Can you think of other measures to improve cow efficiency? Now and in the future, respectively.
RDC:
- Feed efficiency and/or F.E in combination with persistency
- Fat + protein, BCS (stable over lactation) , healthy and fertile cows
- Size, weight, amount of meat when slaughtered
- "Intelligence index" – active on milking, eating, ruminating
- Weight from AMS and production in combination with size and milking speed.
- Measures of methane, chewing – feed intake, camera for BCS…

JER:
- BCS, weight of cows – more stable over lactations
- Calf mortality and longevity, prolonged lactations and no. of lactations

HOL:
- Health and longevity are important indicators
- Direct measures of feed intake, rumination, production per lifeday
- Active, efficient eaters
- Dairy strength
- More weight on claw health
- BCS, ketosis information, live-weight from AMS, rumination time measures

Comment: Apart from feed efficiency and size/weight of cows (weight from AMS) there were some new suggestions of measures such as activity (eating, rumination), body condition score or dairy strength, persistency or prolonged lactations and ketosis information.

4. Suggestions of analyses that NAV could do in relation to breeding for more efficient cows?

RDC:
- Feed-efficiency trait
- Cow activity, rumination, BCS
- Udder texture, concentration consumption per cow

JER:
- Analyses of weight and BCS data – level and trends
- Economy/environmental load in relation to no. of animals per unit of "land"

HOL:
- BCS (look at daughter groups)
- Other diseases – ketosis (h2 and relation to other traits)
- More weight on claw health (less on longevity or udder health)
- Rumination, activity, weight, feed intake, methane/CO_2, stomach bacteria
- Live-weight from AMS

Comment: Similar answers as on question 3 above: activity/rumination, weight from AMS, BCS, environmental aspects, ketosis, modifying current weights in NTM (will be a revision of NTM 2017).

Action points from the workshop January 14th 2016

	Aim	Actions	Who	Deadline
Youngstock survival	Include Young stock survival in NTM	Bring the recommendation from workshop on NAV board agenda in March	NAV Board	17th March 2016
		Include in routine evaluation	NAV	3rd May 2016
Feed efficiency	Look at possibility to use existing registration	NAV will report from different projects dealing with "efficiency" at the workshop 2017	NAV	NAV workshop 2017