



Linear scoring in the Danish Warmblood Society

- with breeding optima included to avoid extreme breeding



Karina Christiansen
Breeding Manager



Background and status

- Breeding and selection system specialized into jumping (30 %) and dressage (70%) in 2004
- Linear scoring since 2014 on foals, 2-year-old mares and mares for grading
- Breeders receive a copy of the linear scheme
- No statistical information yet
- Working on an app. for linear scoring with direct update to the Danish horse database



Linear schemes

Mares:

- Dressage
- Jumping




Foals and 2-year-old mares:


- Dressage (reduced scheme)
- Jumping (reduced scheme)

14th March 2018
2

Selection system for mares

	Dressage mares	Jumping mares
Exterior evaluation	<ul style="list-style-type: none"> * Conformation * Gaits shown loose 	<ul style="list-style-type: none"> * Conformation * Canter * Loose jumping
Saddle grading/ station test	<ul style="list-style-type: none"> * Conformation * Gaits shown under rider/test rider 	<ul style="list-style-type: none"> * Conformation * Canter shown under rider/ test rider * Loose jumping





14th March 2018
3



Evaluation system for foals and 2-year-old mares (voluntary presentation)

	Dressage	Jumping
Foals	* Conformation * Gaits shown loose	* Conformation * Canter
2-year-old mares	* Conformation * Gaits shown loose	* Conformation * Canter * Loose jumping



14th March 2018

4




The way to linear scoring

- Looking for a more objective and informative evaluation system
- Aim to work out a more objective breeding goal
- Inspiration from KWPN /BWP and from the cattle industry in Denmark



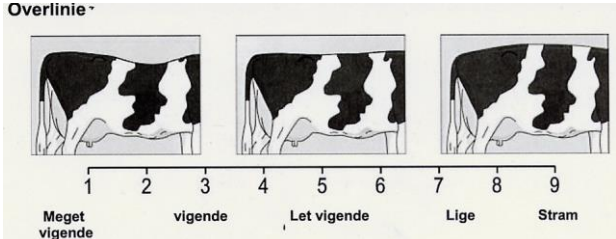
14th March 2018

5



Linear scoring in dairy cattle from the biological extremes

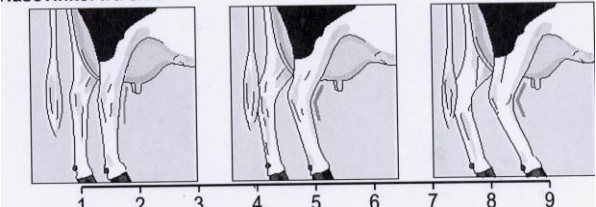
Overlinie



1 2 3 4 5 6 7 8 9


Meget vigende vigende Let vigende Lige Stram

hasevinkel fra siden



1 2 3 4 5 6 7 8 9

14th March 2018
6



Linear scoring in dairy cattle

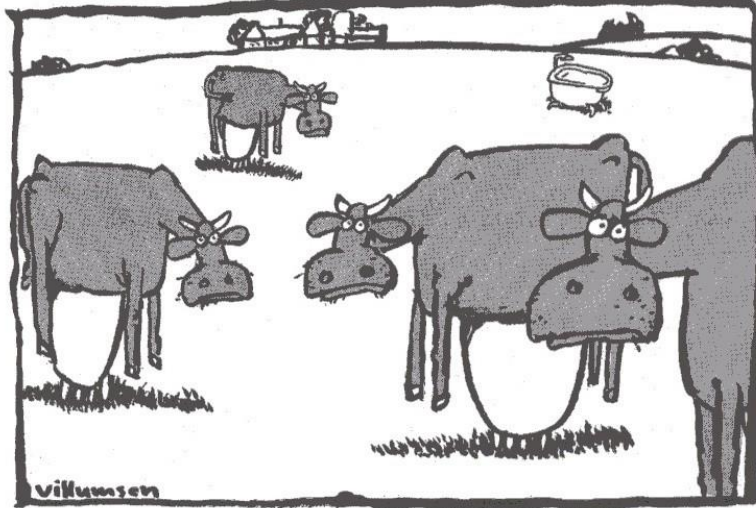
Information to the owner:

	Optimum	Scoring	Population mean
Chest width	6.0	6.0	5.9
Chest depth	5.0	5.0	4.8
Milk organs	6.5	5.6	5.3
Topline	7.0	6.5	6.5
Croup width	5.5	5.8	5.1
Length of Croup	5.0	5.0	5.0

14th March 2018
7



Linear scoring to avoid extreme breeding



Landbruget satser for ensidigt på høj mælkeydelse.
14th March 2018

8



Belgian Blue Cattle

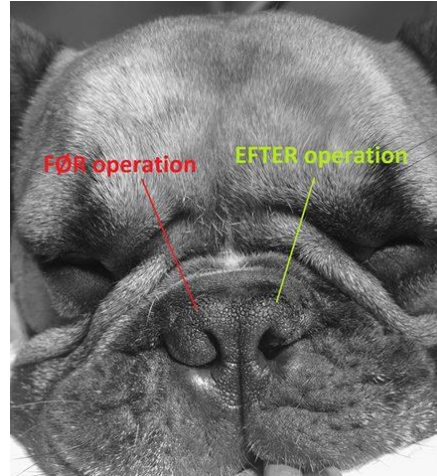


14th March 2018

9



Dogs with flattened nose



14th March 2018

10



Development of linear schemes for DWB

1. Traits important for DWB, ex. **long-short legged**
2. Deviations, ex. **short front legs (1 or 2)**
3. Lay down breeding optima (marked with a square)



DWB breeding goal:

A noble, leggy, and supple riding horse with high rideability and a strong health. It has capacity in either jumping or dressage to compete on international level

Noble
A-B-C

Average
D-E-F

Heavy
G-H-I

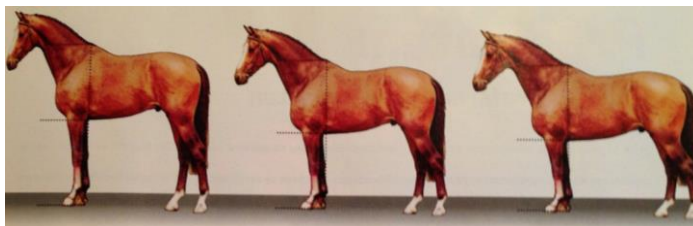
14th March 2018

11



DWB booklet with breeding optima

Trait	Trait definition	Biological extremes	Breeding optimum
Length of legs	Distance from ground to chest compared to distance from chest to withers	Long-legged (bigger distance from ground to chest than from chest to withers) / Short-legged (smaller distance from ground to chest than from chest to withers)	C : long-legged, but must not have a negative influence on balance and longevity



Long-legged(A-B-C)

Average(D-E-F)

Short-legged (G-H-I)

14th March 2018

12



Trot - freedom at elbows

Freedom at elbows
(A-B-C)

Average
(D-E-F)

Tight elbows
(G-H-I)

Breeding optimum for elbows in trot:

The forearm goes to horizontal level, but not above



14th March 2018

13



Goals by implementing linear scoring

1. Give more information and guidelines to the breeders
2. Get the linear scorings in the Danish horse database by app.
3. Linear scoring on stallions
4. First statistical information (like population mean) to evaluate the schemes
5. Breeding values based on linear scoring (genomic selection included)

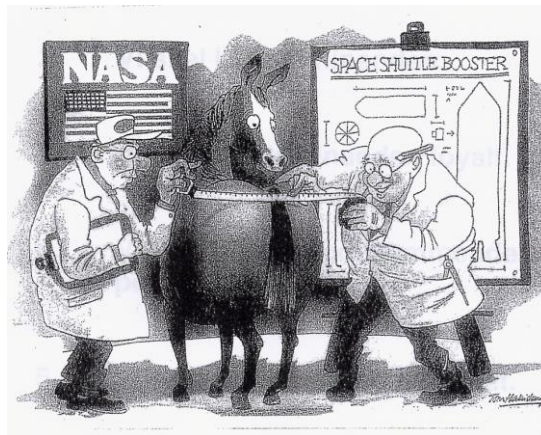


14th March 2018

14



Questions?



14th March 2018

15