NAV Bull Search –
possibilities and further development

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NAV's joint publication of bull EBVs

- Search page for all AI bulls with herdbook no. in Denmark, Finland or Sweden included in evaluation of Nordic red breeds, Holstein, Red Holstein or Jersey

➢ Top lists and bull's individual pages

  - Updated after NAV routine evaluation (4 times a year)

Most farmers use bulls suggested on mating plan, but NAV Bull Search is for those wanting more info...

- All AI bulls from Nordic AI companies available on ONE page
- Both older bulls and the most new genomically tested!
- Good overview and lots of details
- User friendly and easy to search on what you find important

For whom

Farmers

Breeding consultants

Officials

Feedback from users

- Search page was first introduced Summer 2014
- Continuous improvements
- Positive reactions from farmers, consultants, Viking Genetics

"I can sort the bulls according to traits that are important to me"

"I also like that I can search for sons or grandsons of certain bull"

"Good to see on which traits the bull has genomic evaluation or already daughter results"

"Last I looked up new index for youngstock survival and how it was calculated"

"To see the breeding value optimum for conformation traits is also a nice feature"

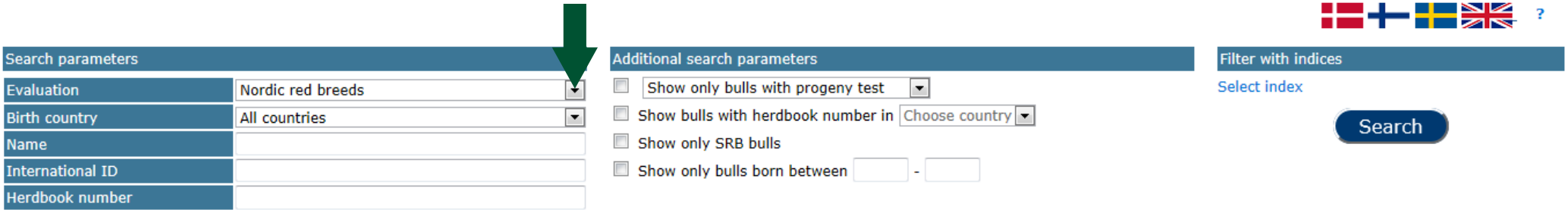
"My primary source of information on individual bulls"

"Very flexible search page with good overview and details if you want them"

"Good with all AI bulls with Nordic herdbook no. in one page"

Top list - basic features

- Choice of language
- User manual
- **Choose evaluation scale:** Red breeds, Holstein, Red Holstein, Jersey



➢ Top list of all bulls ranked on NTM

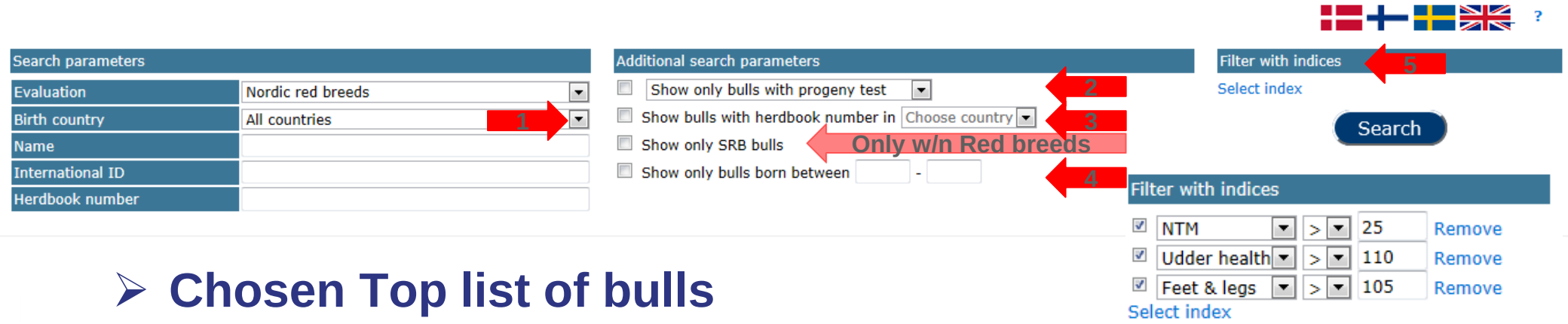
- Can be sorted on all column headings i.e. Birth year or Udder health
- Top 50 can be printed as pdf

Show 5 rows per page Top 50 pdf Evaluation published **03.11.2014** 1 2 3 ... > >>

International ID	Name	Birth year	NTM	Yield	Growth	Fertility	Birth	Calving	Udder health	Other diseases	Claw health	Frame	Feet & legs	Udder	Milking speed	Tempe-rament	Longevity	Youngstock survival
SWE000000000099663	VR WAND	2013	35	120	103	116	108	99	107	105	102	104	110	111	112	107	122	
FIN000000000046980	VR Faabeli	2013	33	114	104	118	106	112	113	102	101	101	114	113	108	107	119	
DNK000000000037468	VR Faber	2013	33	117	97	118	115	108	102	118	106	105	114	106	115	106	114	
DNK000000000037469	VR Felipe	2013	33	121	104	104	95	112	109	104	94	104	103	109	123	118	128	
SWE000000000099725	VR TOKYO	2013	33	124	104	110	106	104	105	107	101	116	93	108	104	106	121	

Top list - additional features

- **Create a more specific top list within Evaluation**
  1. Birth country: All countries (default), D, F, S, DFS, Other countries (except DFS)
  2. Bull category: All bulls (default), with progeny test, without progeny test
     - Progeny tested =official EBVs for yield, udder health and conformation
  3. Herd book: D, F or S (default) or only one of these countries
  4. Birth year: select an interval
  5. Filter your search with up to 5 indices



- **Chosen Top list of bulls**

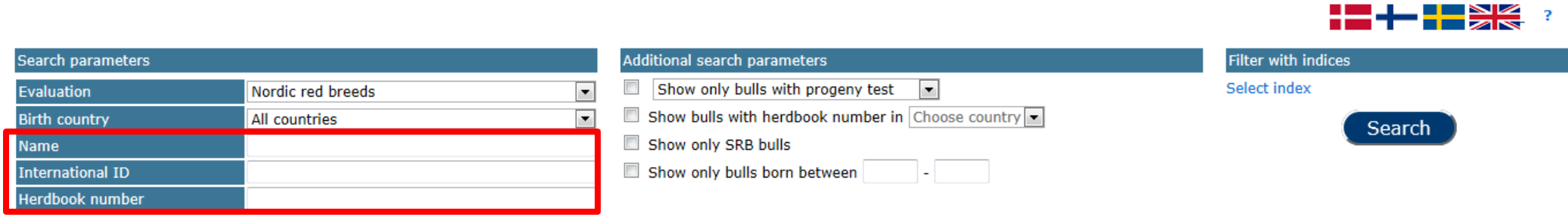
Users may have different goals

Herds may have somewhat different breeding goals but use filter tool with caution since threshold selection will limit genetic progress in NTM

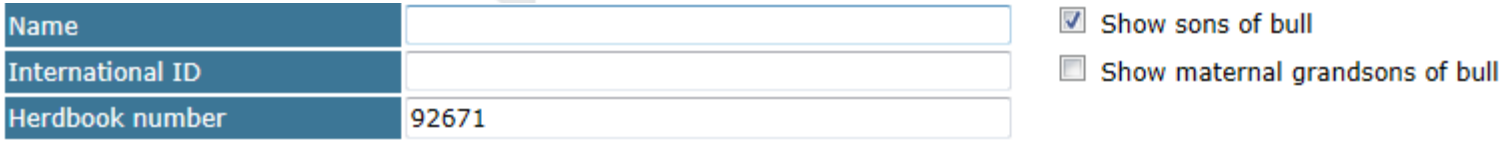
Search for individual bulls

International ID	Name
SWE000000000099663	VR WAND
FIN000000000046980	VR Faabeli
DNK000000000037468	VR Faber

- Click on ID or Name in a Top list
- Search on (part of) Name, numeric part of ID or Herdbook no.



- If typing herdbook no. – choice to list sons and/or grandsons



Bull own page – basic info

BUCKARBY NTM 27

PDF Search

Born	23/07/2006
Breeder	Not yet available
Evaluation	Nordic red breeds
International ID	SWE000000000092671

Herdbook number	
FIN	45711
SWE	92671
DNK	36952

Breed proportions						
Breed	SRB	FAY	NRF	BSW	ORDM	CAY
%	38	33	14	8	5	2

Trait	# Daughters	# Herds
Yield	1286	920
Udder health	970	953
Conformation	498	390

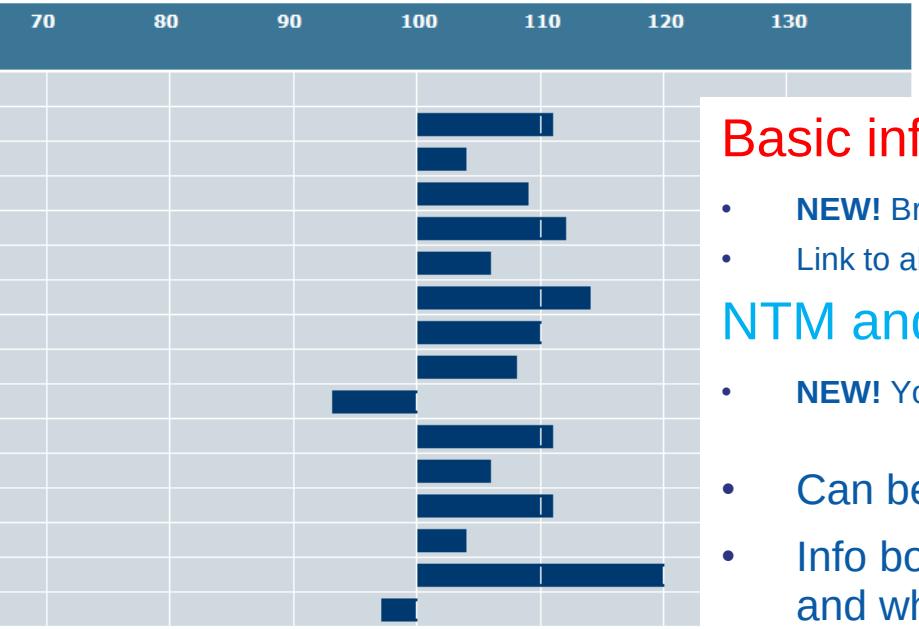
Sire	O BROLIN R SWE000000000091804
Dam	SWE000234002049203

PGS	L.Ipollo FIN000000000039984
PGD	SWE000512542015496
MGS	PETERSLUND SWE000000000091213
MGD	SWE000234002041399
MGDS	STENSJÖ

Evaluation published **03.11.2014**

Show Reliabilities Contribution to NTM Index types Previous evaluation

Trait	Current evaluation
NTM	27
Yield	111
Growth	104
Fertility	109
Birth	112
Calving	106
Udder health	114
Other diseases	110
Claw health	108
Frame	93
Feet & legs	111
Udder	106
Milkability	111
Temperament	104
Longevity	120
Youngstock survival	97



Basic information

- **NEW!** Breeder from D and F (S 2015?)
- Link to all bulls own pages

NTM and 15 sub-indices

- **NEW!** Youngstock survival

- Can be printed as pdf
- Info boxes describes index and what it is based on

Bull own page – additonal info

Possibility to look at more breeding values…

By clicking at name or arrow for daughter proven bulls (also for young bulls: yield and conformation)

- Traits included in NTM: single traits across and within lactation
- Breeding values not in NTM

…and other values related to this bull

- For subindices: Reliability (daughter proven bulls), Contribution to NTM and Index type
- For all EBVs: the value from Previous evaluation

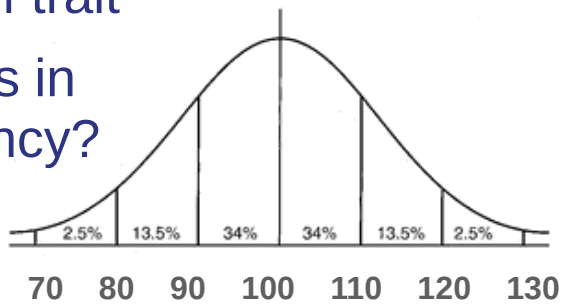
Evaluation published **03.11.2014**

Show ☑ **Reliabilities** ☑ **Contribution to NTM** ☑ **Index types** ☑ **Previous evaluation**

Trait	Current evaluation	70 80 90 100 110 120 130	Reliability	Contribution to NTM	Index type	Previous evaluation
NTM	27					27
Yield	111		99	10.12	NAV D	110
Milk	102					101
Fat	107					106
Protein	110					109
1st lactation	106					105
2nd lactation	114					114
3rd lactation	115					114
Breeding values not in NTM						
Fat%	106					107
Protein%	114					114
Persistency	108					108

Which phenotypic value can be expected on daughters after a certain bull?

- Relative breeding values mean 100 (NTM 0) and std 10
  - \+ easy to see which animals are good regardless of trait
  - \- less understanding of what breeding value means in absolute/phenotypic values such as kg or frequency?

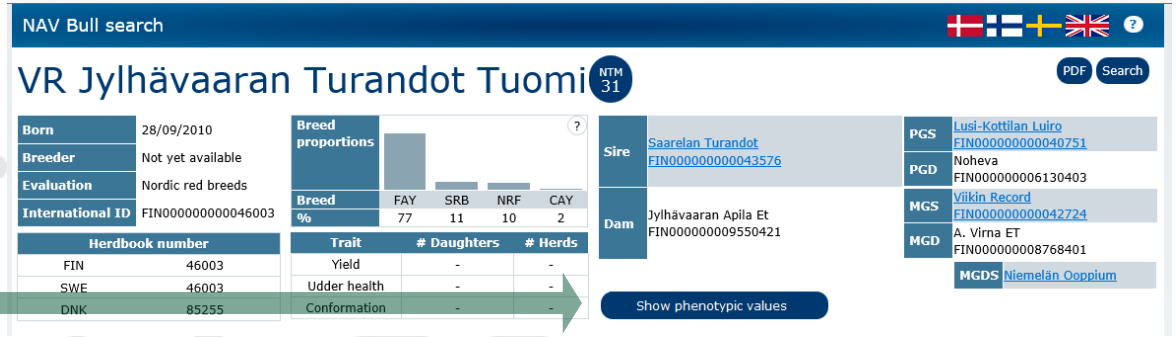


- The intension with NAV search page has always been to show the phenotypic values

➢ Better understanding of the value in practice of different EBVs

Displaying phenotypic values

- Bull's own page
  - come to breed-specific phenotypic values



- Single traits in NTM – weighted across lacations
  - **Bull's expected effect** on average daughter in DFS
  - **Breed average** in DFS

Evaluation published **03.11.2014**

Trait	Breeding value	Bull's effect in NAV countries	Breed average in NAV countries
Yield	124		
Milk (kg)	118	300	8200
Fat (kg)	121	-15	368
Protein (kg)	124		

Not real values here!

Expected daughter performance for a Nordic average daughter to this bull:

300 + 8200 = 8500 kg of milk

Nordic vs. national level

- For certain single traits the breed average and/or phenotypic variation differ notable across countries
  - Indicated in comment column
  - E.g. some claw diseases with very low frequency in Finland

➢ More realistic result to look at national level

- **Bull's effect** on daughter in Finland
- **Breed average** in Finland

Evaluation published **03.11.2014** **Show effect in** ☐ Denmark ☑ Finland ☐ Sweden

Trait	Breeding value	Bull's effect in NAV countries	Breed average in NAV countries	Comment	Finland	
					Bull effect	Breed avg
Yield	124					
Milk (kg)	118	300	8200		300	8300
Fat (kg)	121	-15	368	Differences in national effects.	-14	367
Protein (kg)	124					

Not real values here!

Implementation plan

- Function in place *ANY DAY* for single traits included in indices:
  - Conformation, Temperament
  - Claw health

- Bull effect is based on:
  1. Weighted single trait EBV, if available:
     - Conformation: both daughter proven **and** young genomic bulls
     - Claw health: **only** daughter proven bulls
  2. Sub-index value and the regression of single trait on sub-index

- The plan is to include more traits during 2015

Where to find it

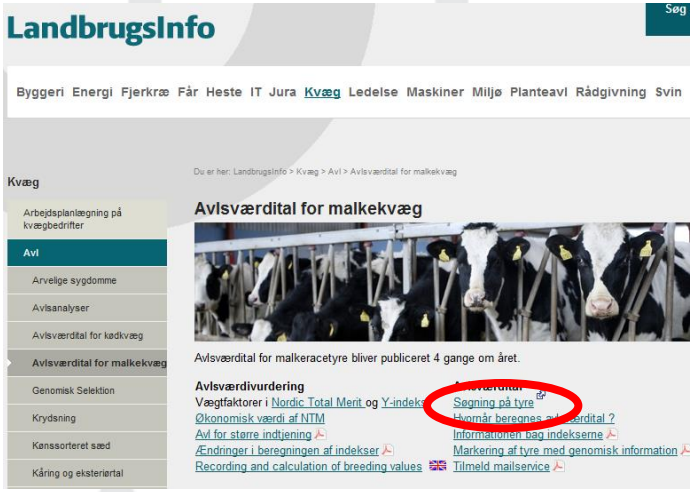
- http://www3.mloy.fi/NAV/
- Links from owner organizations:

VIDENCENTRET FOR LANDBRUG
Kvæg

faba

VÄXA SVERIGE

www.landbrugsinfo.dk/malkekvaegavl



www.faba.fi
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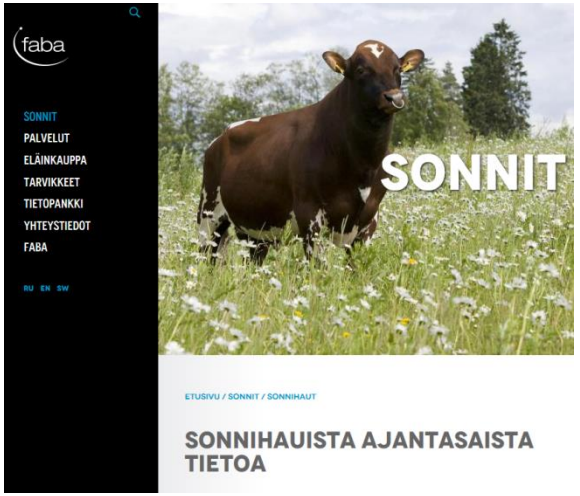

www.vxa.se
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NAV

Thanks for your attention!

Questions/comments?

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