NAV evaluation
Harmonization of calving traits

Jørn Pedersen, Trine Andersen, SEGES Innovation

02.03.2022

STØTTET AF
Mælkeafgiftsfonden
SEGES INNOVATION

Since last meeting

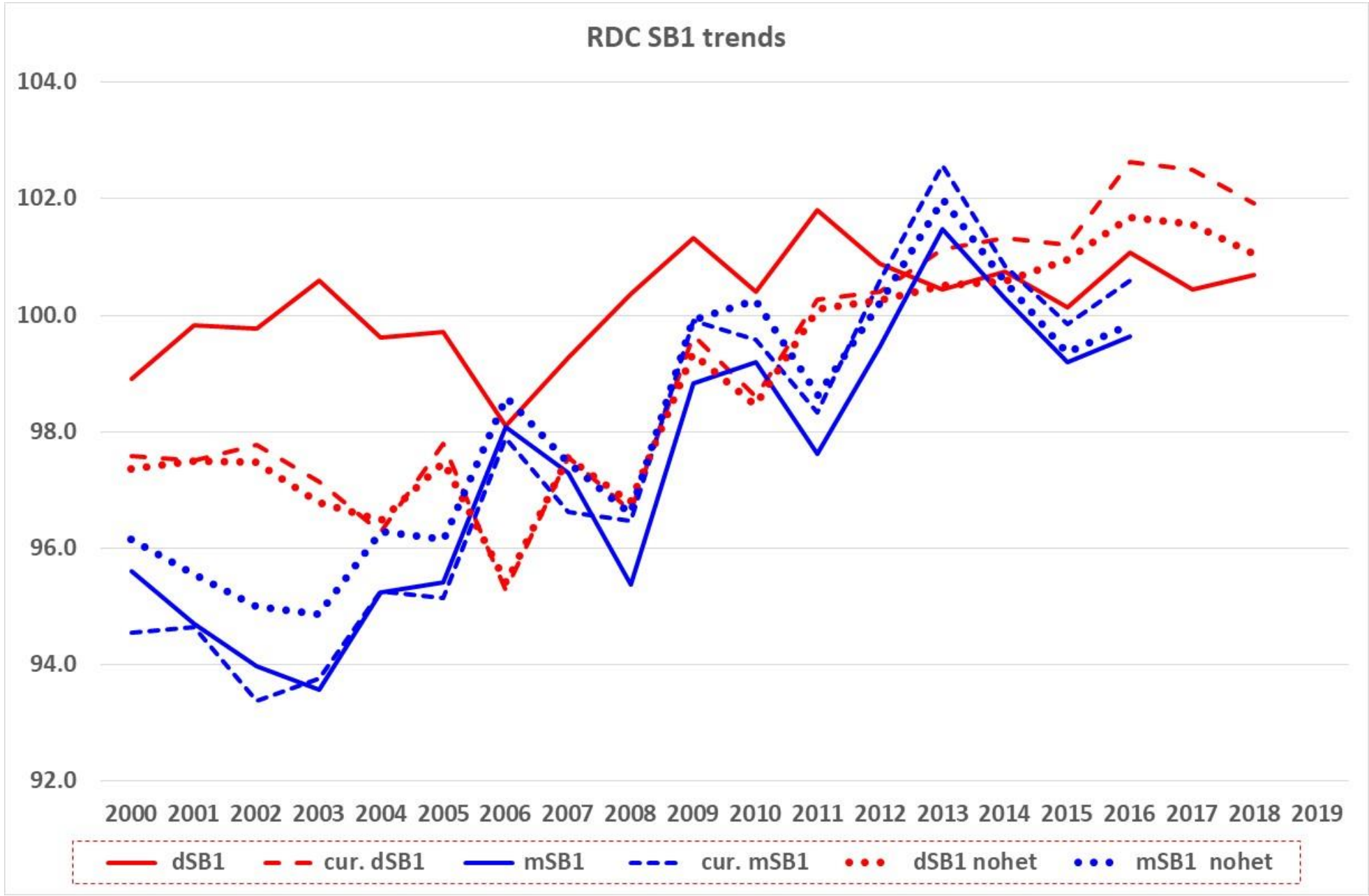
Work on RDC evaluation

- Sire index trends
- Model with and without heterosis

- Interbull validation
  - JER
  - HOL

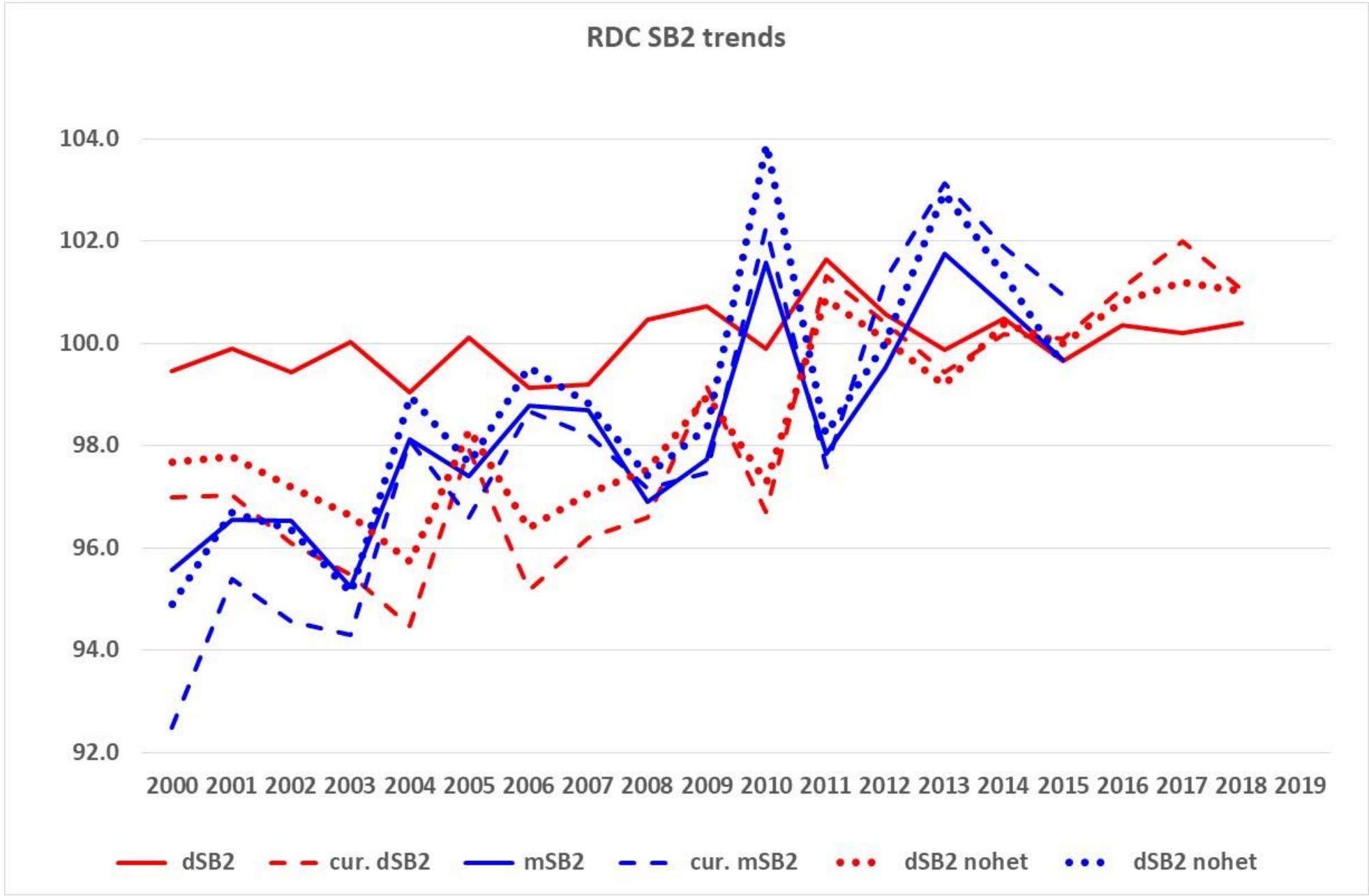
SEGES INNOVATION

2



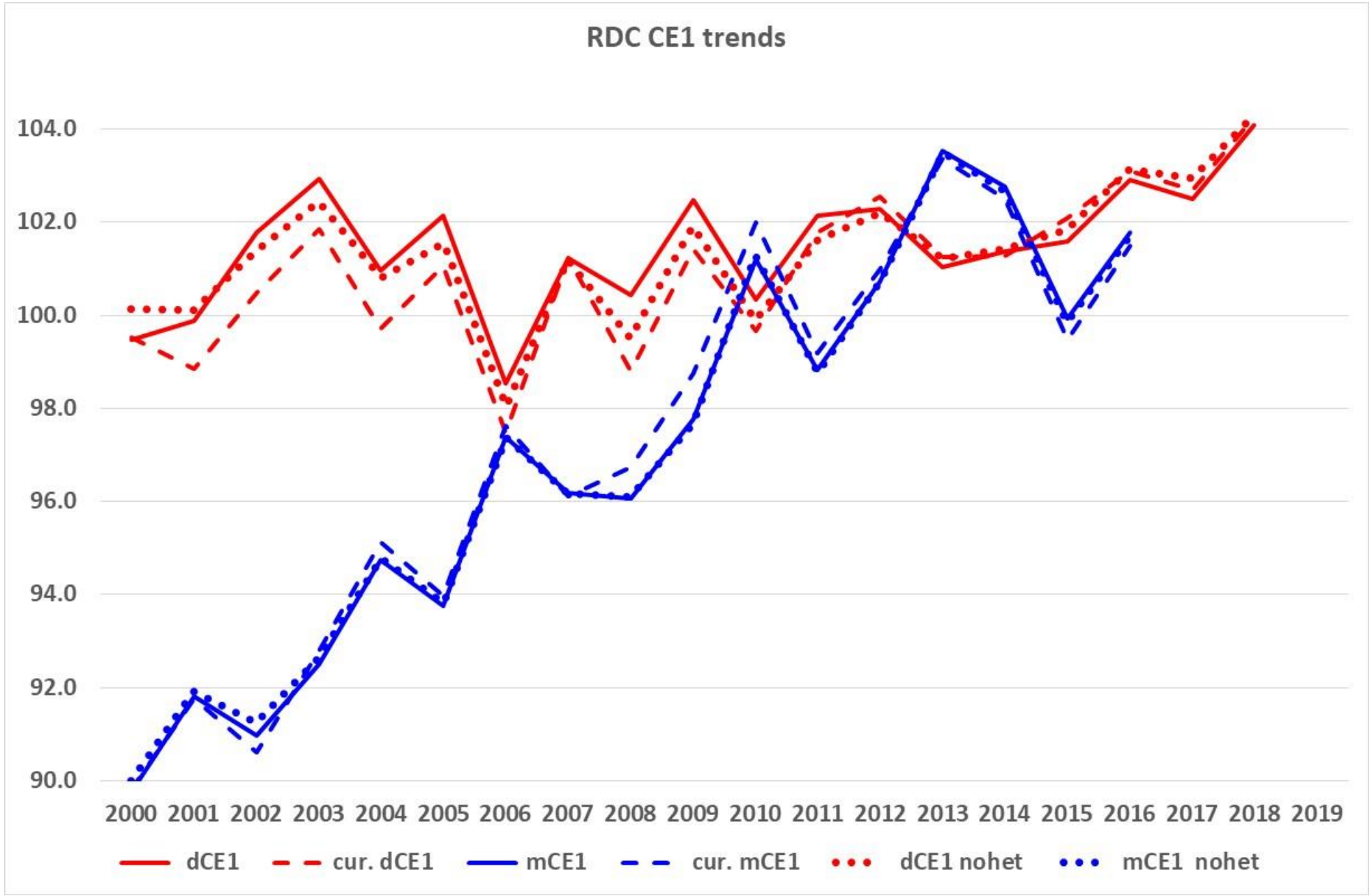
SEGES INNOVATION

2



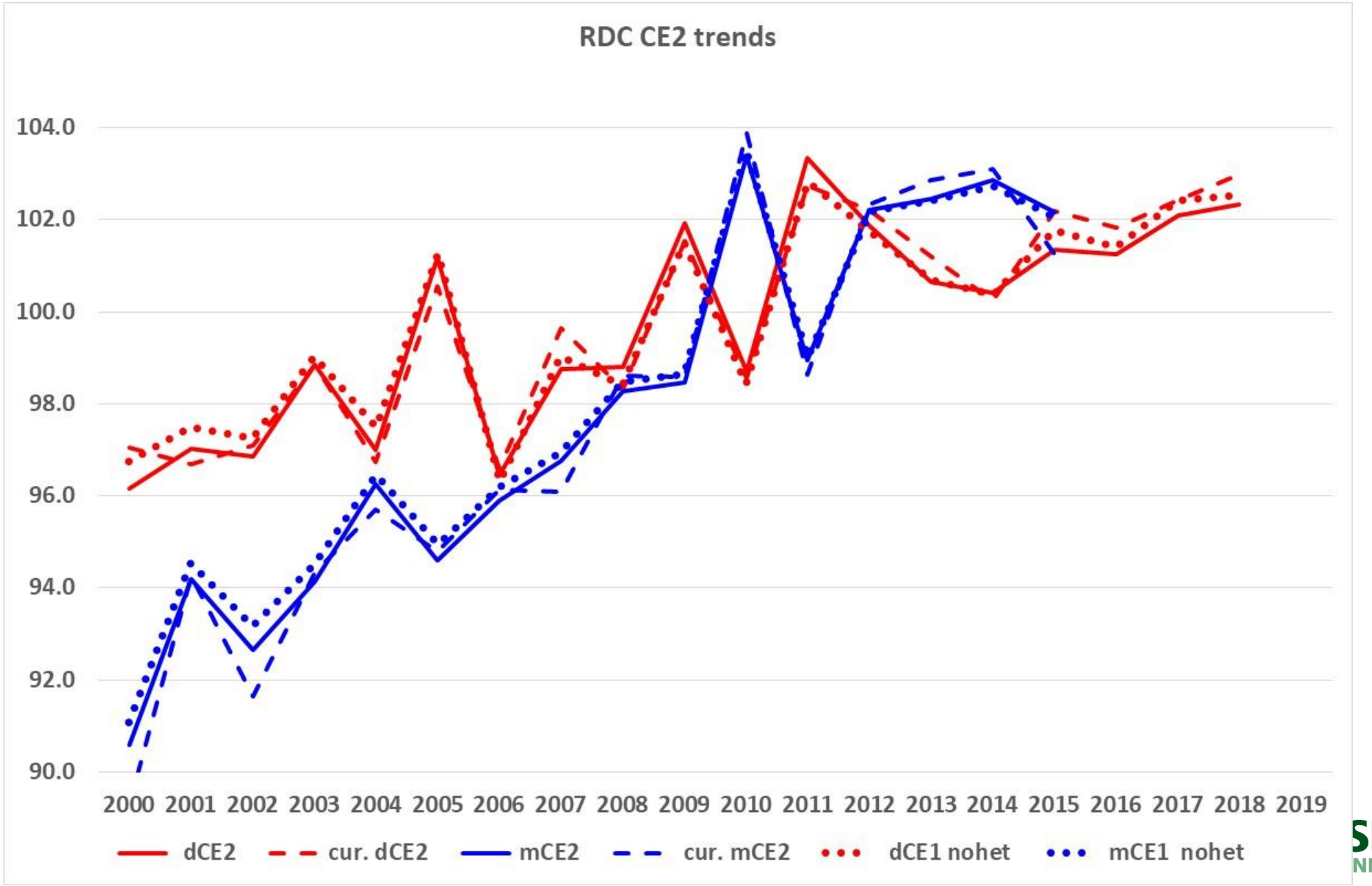
SEGES INNOVATION

2



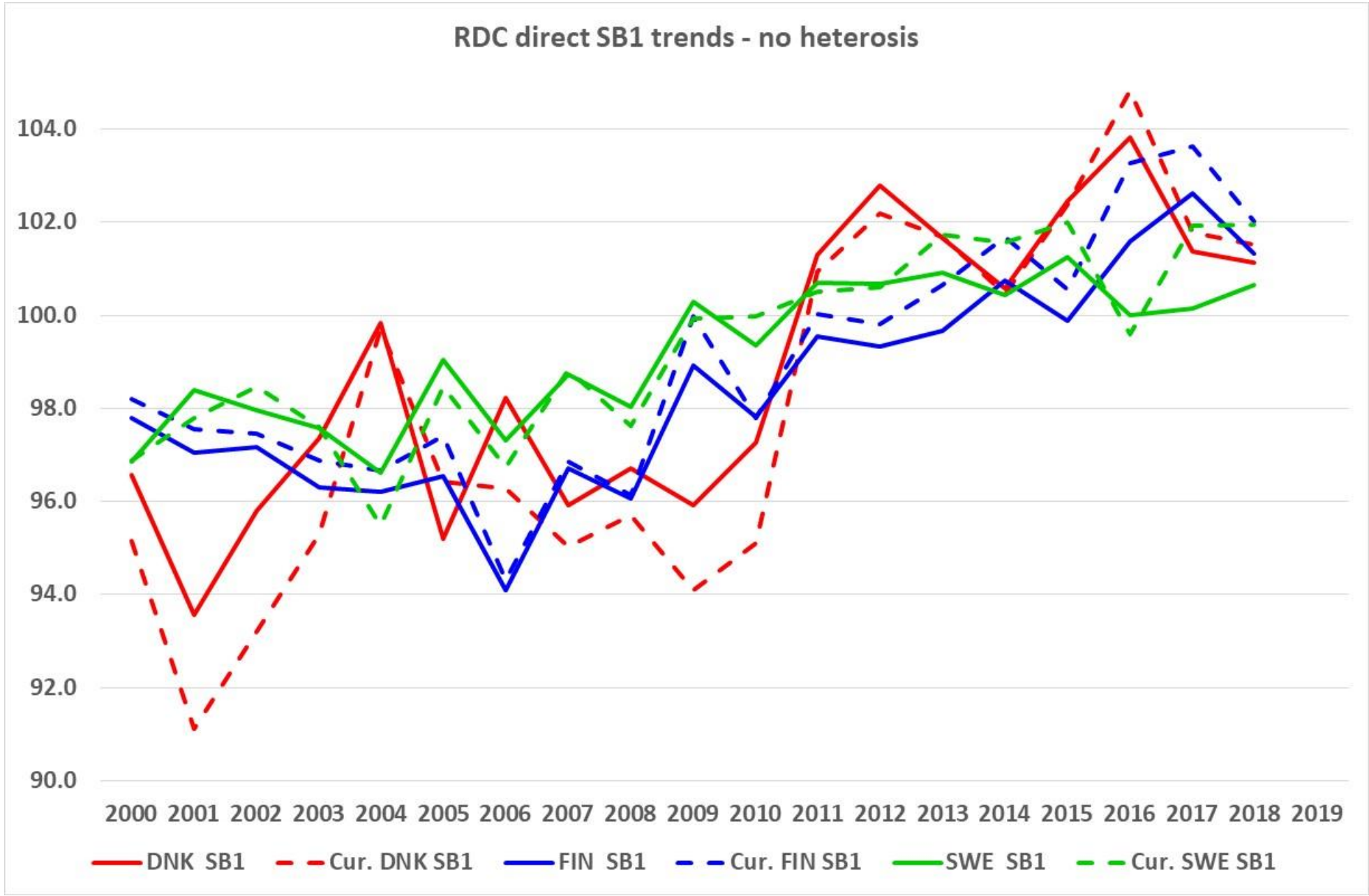
SEGES INNOVATION

2



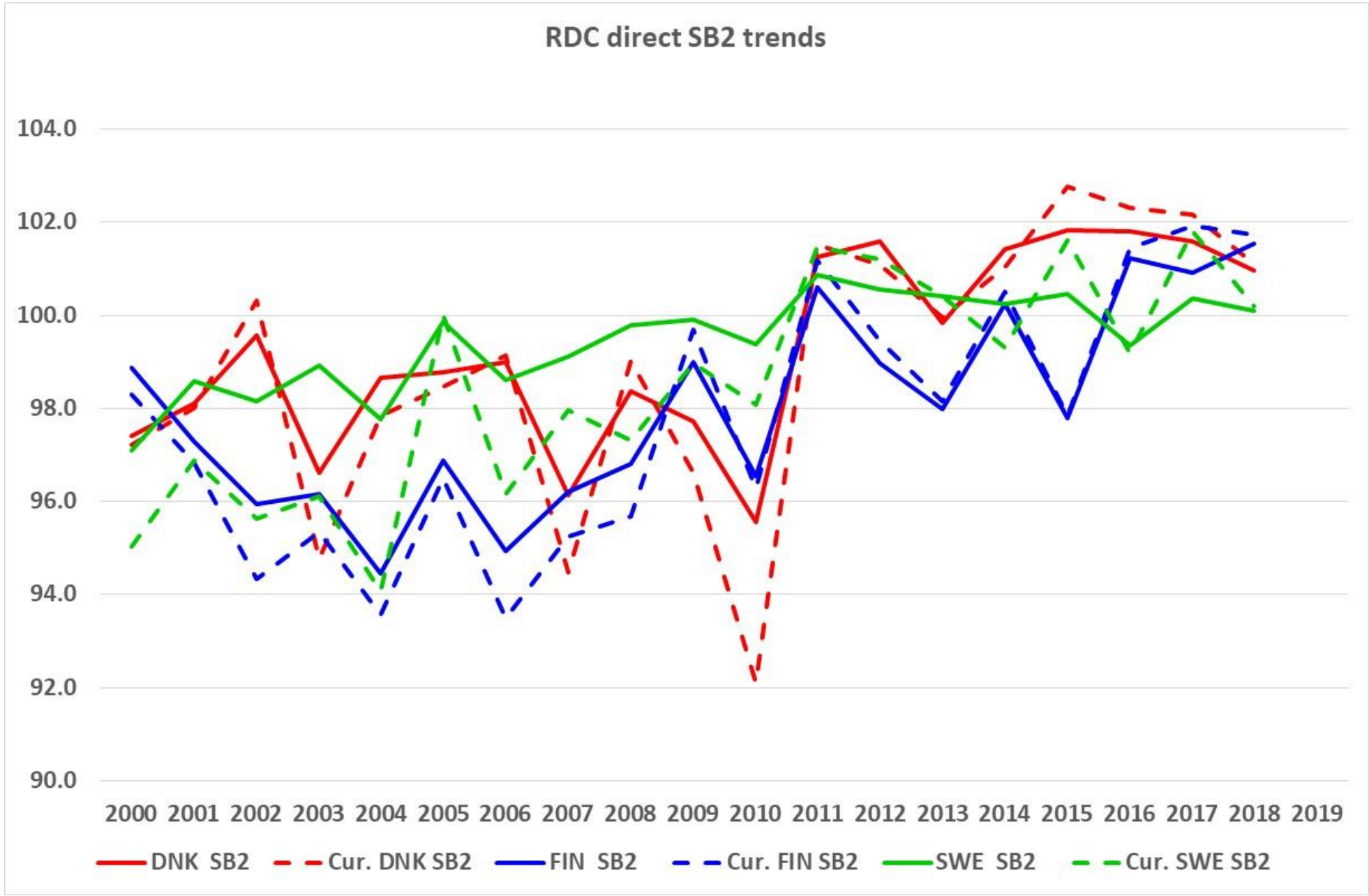
SEGES
INNOVATION

2



SEGES INNOVATION

2



SEGES INNOVATION

2

RDC sire-corr. with current, sires born >= 2000
R2 > 0.7 for birth idx, > 0.7 for calving index

	With het.	Without heterosis				"Trine" w. het	"Trine" No het.
	All	All	DNK	FIN	SWE	*All*	*All*
dSB1	**0.84**	**0.95**	***0.97***	***0.96***	***0.95***	*0.90*	***0.98***
dCE1	**0.96**	**0.97**	***0.98***	***0.98***	***0.97***	***0.99***	***0.99***
dSB2	**0.87**	**0.96**	***0.97***	***0.97***	*0.95*	*0.92*	***0.97***
dCE2	0.92	0.93	***0.95***	***0.95***	*0.93*	***0.97***	***0.97***
mSB1	0.92	0.93	***0.95***	*0.93*	*0.91*	***0.95***	***0.95***
mCE1	**0.97**	**0.96**	***0.98***	***0.98***	***0.96***	***0.99***	***0.99***
mSB2	**0.82**	**0.83**	***0.75***	***0.85***	***0.81***	***0.80***	***0.81***
mCE2	**0.95**	**0.95**	***0.95***	***0.97***	*0.94*	***0.96***	***0.96***
Birth idx	0.94	0.96	***0.99***	***0.97***	*0.95*		
Calv idx	0.89	0.91	*0.93*	*0.92*	***0.87***		

SEGES INNOVATION

RDC sire-correlations between model with and without heterosis included

Trines correlation calculations

	Current model		New model	
	Direct	Maternal	Direct	Maternal
SB1	0.9976	0.9962	0.90	1.00
CE1	0.9999	0.9976	1.00	1.00
CS1	0.9998	0.9999	1.00	1.00
SB2	0.9997	0.9982	0.93	1.00
CE2	0.9994	0.9983	1.00	1.00
CS2	0.9999	0.9973	1.00	1.00

SEGES INNOVATION

RDC heterosis – 1st calving traits

nordhet: srbxfay + srbxnrf + srbxcay + fayxnrf + fayxcay + fayxfic + nrfxcay
resthet: totalhet - nordhet (mostly RDM, ABS, RHF and their crosses with SRB, FAY, NRF and CAY)

Trait	Heterosis effect	New	Current	SD New	SD Current	New index	Current index	Diff. New-current
SB1	nordhet	0.2717	0.0053	0.0876	0.0322	31.0	1.7	29.4
SB1	resthet	0.2345	0.0106	0.0876	0.0322	26.8	3.3	23.5
SB1	mnordhet	-0.0137	0.0073	0.0610	0.0235	-2.2	3.1	-5.4
SB1	mresthet	-0.0017	0.0114	0.0610	0.0235	-0.3	4.9	-5.2
CE1	nordhet	0.1036	-0.0175	0.1536	0.1413	6.7	-1.2	8.0
CE1	resthet	0.0975	-0.0146	0.1536	0.1413	6.3	-1.0	7.4
CE1	mnordhet	0.0309	0.0367	0.1127	0.0939	2.7	3.9	-1.2
CE1	mresthet	0.0407	0.0491	0.1127	0.0939	3.6	5.2	-1.6

SEGES INNOVATION

RDC heterosis – Later calving traits

nordhet: srbxfay + srbxnrf + srbxcay + fayxnrf + fayxcay + fayxfic + nrfxcay
resthet: totalhet - nordhet (mostly RDM, ABS, RHF and their crosses with SRB, FAY, NRF and CAY)

Trait	Heterosis effect	New	Current	SD New	SD Current	New index	Current index	Diff. New-current
SB2	nordhet	0.1206	0.0036	0.0450	0.0145	26.8	2.5	24.3
SB2	resthet	0.1044	0.0028	0.0450	0.0145	23.2	1.9	21.3
SB2	mnordhet	-0.0013	0.0028	0.0302	0.0134	-0.4	2.1	-2.5
SB2	mresthet	-0.0010	0.0044	0.0302	0.0134	-0.3	3.3	-3.6
CE2	nordhet	0.0489	0.0058	0.0810	0.0660	6.0	0.9	5.2
CE2	resthet	0.0402	-0.0071	0.0810	0.0660	5.0	-1.1	6.0
CE2	mnordhet	0.0239	0.0201	0.0696	0.0542	3.4	3.7	-0.3
CE2	mresthet	0.0179	0.0228	0.0696	0.0542	2.6	4.2	-1.6

Summary

- Very high (too high) effect of heterosis for direct SB1 and SB2.
- In new: Correlations between with and without heterosis included are low for direct SB1 and SB2 – otherwise close to 1.00
- In current: Correlations between with and without heterosis included are close to 1.00
- Heterosis could be omitted !

- BUT: There are still problems maternal SB2

SEGES INNOVATION