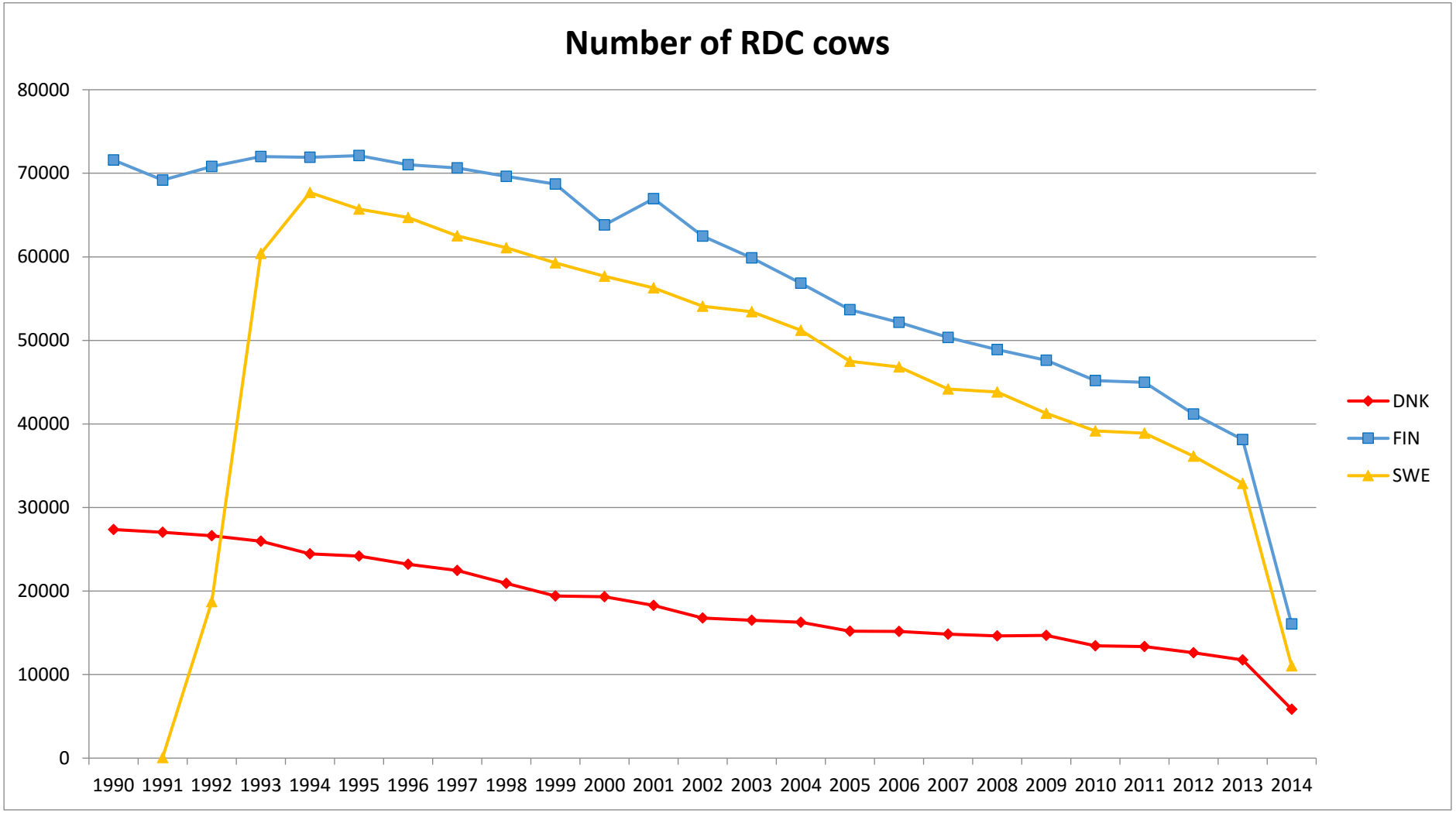
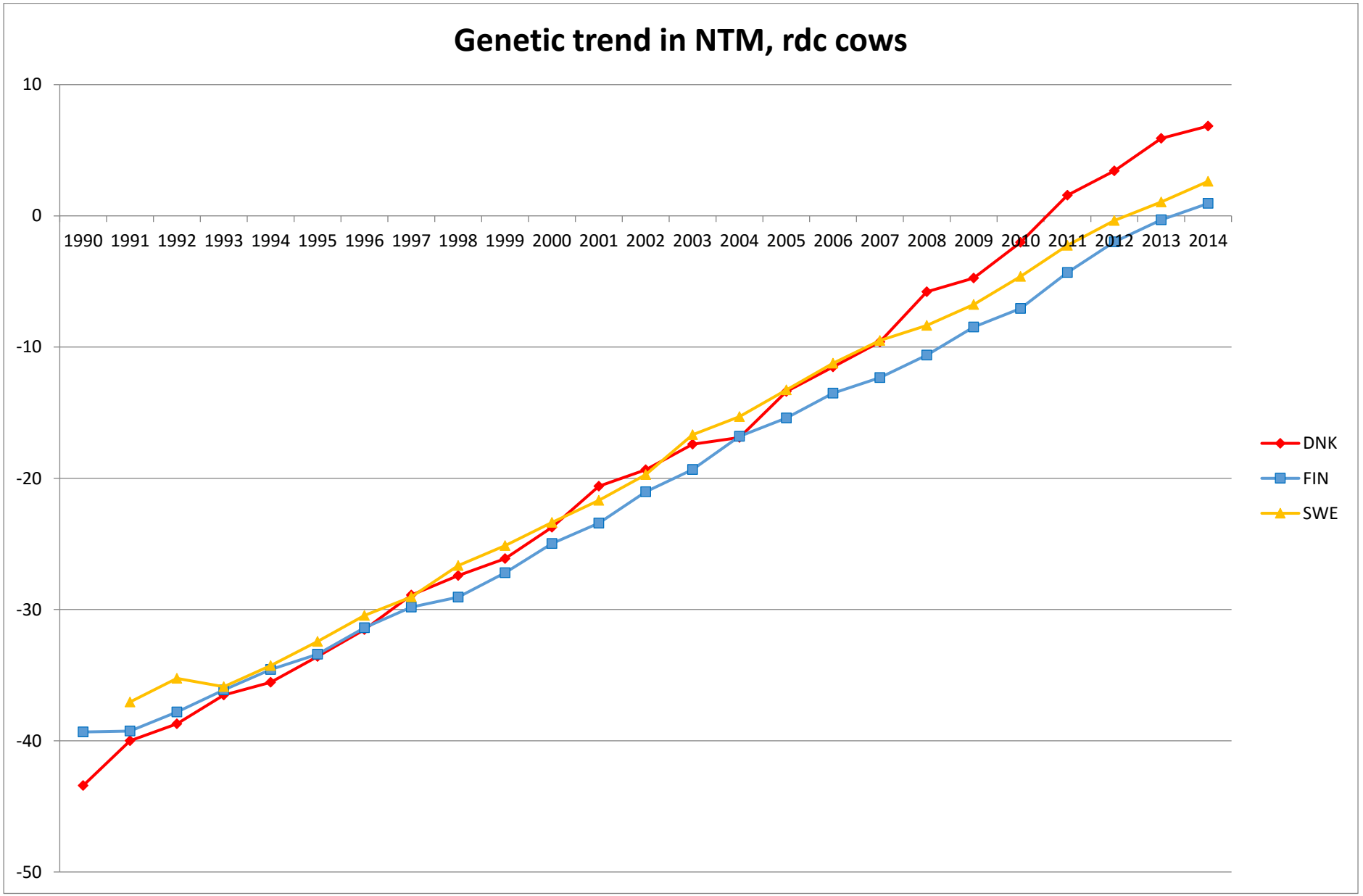
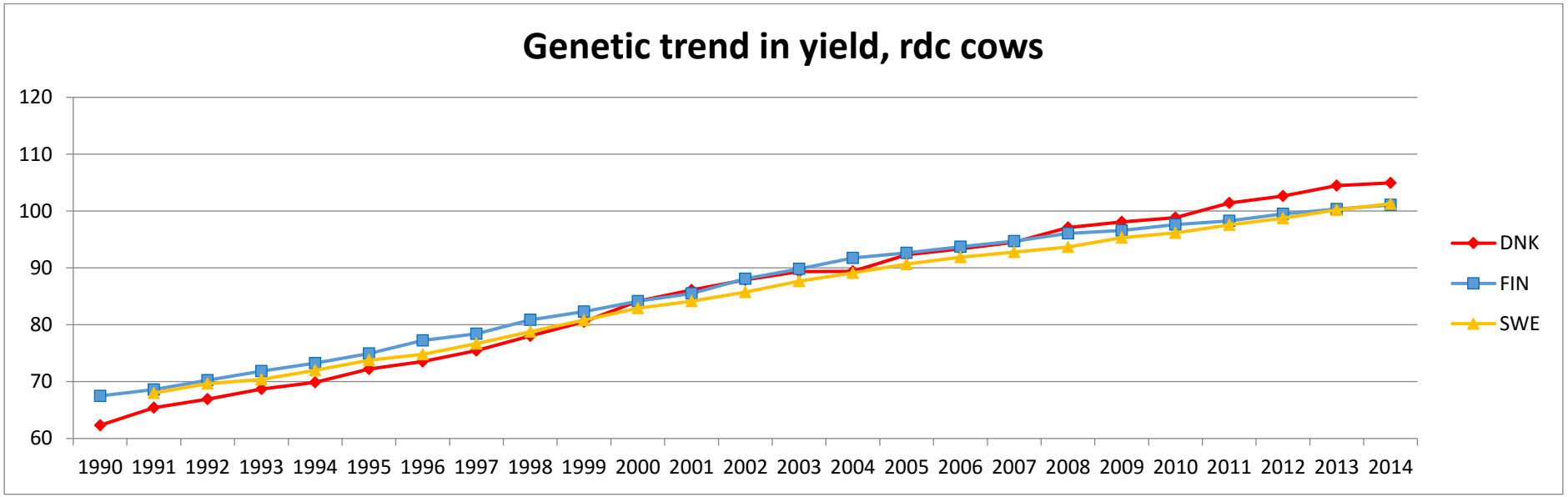
NAV workshop 19.1.2017

Following document shows genetic trends in traits that are included in NTM. Additionally, genetic trends in individual type traits, in yield traits and in growth traits are given. Genetic trends are calculated from females that get breeding values in NAV evaluation. For each birth year class a mean is calculated. From annual it can be concluded how the population is changing over years.




Genetic trend in NTM, rdc cows
10
0
-10
-20
-30
-40
-50
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in yield, rdc cows
120
110
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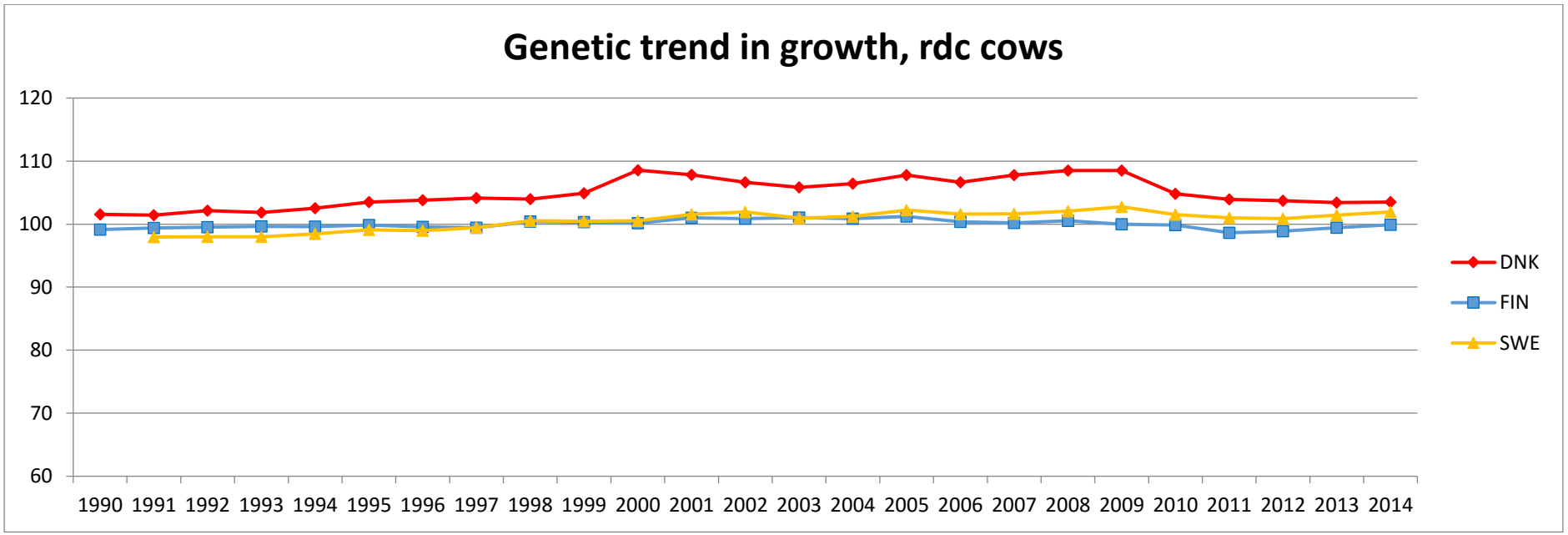
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in growth, rdc cows
120
110
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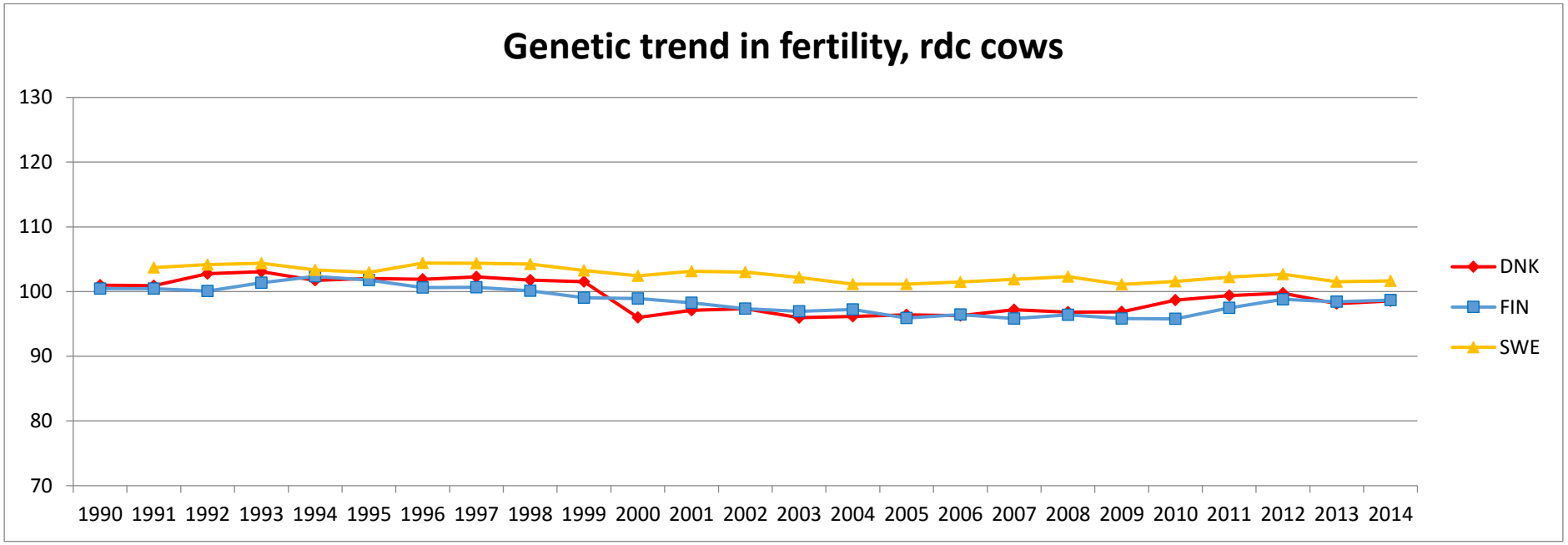
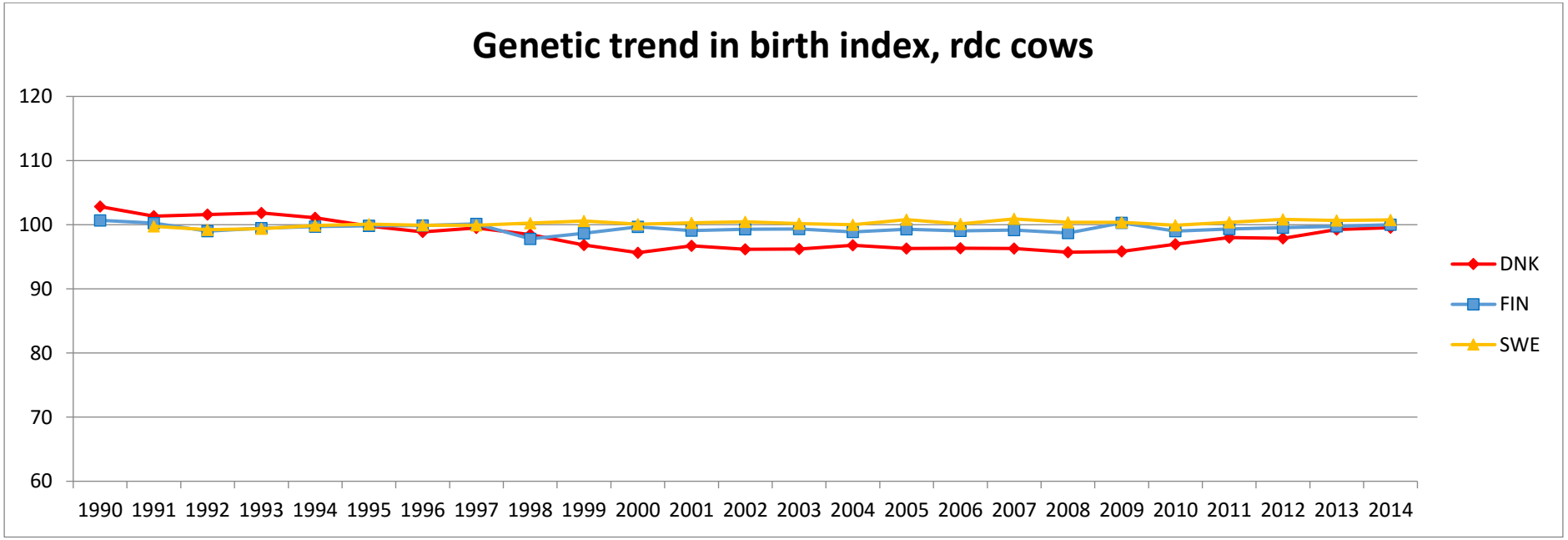
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in fertility, rdc cows
130
120
110
100
90
80
70
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in birth index, rdc cows
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110
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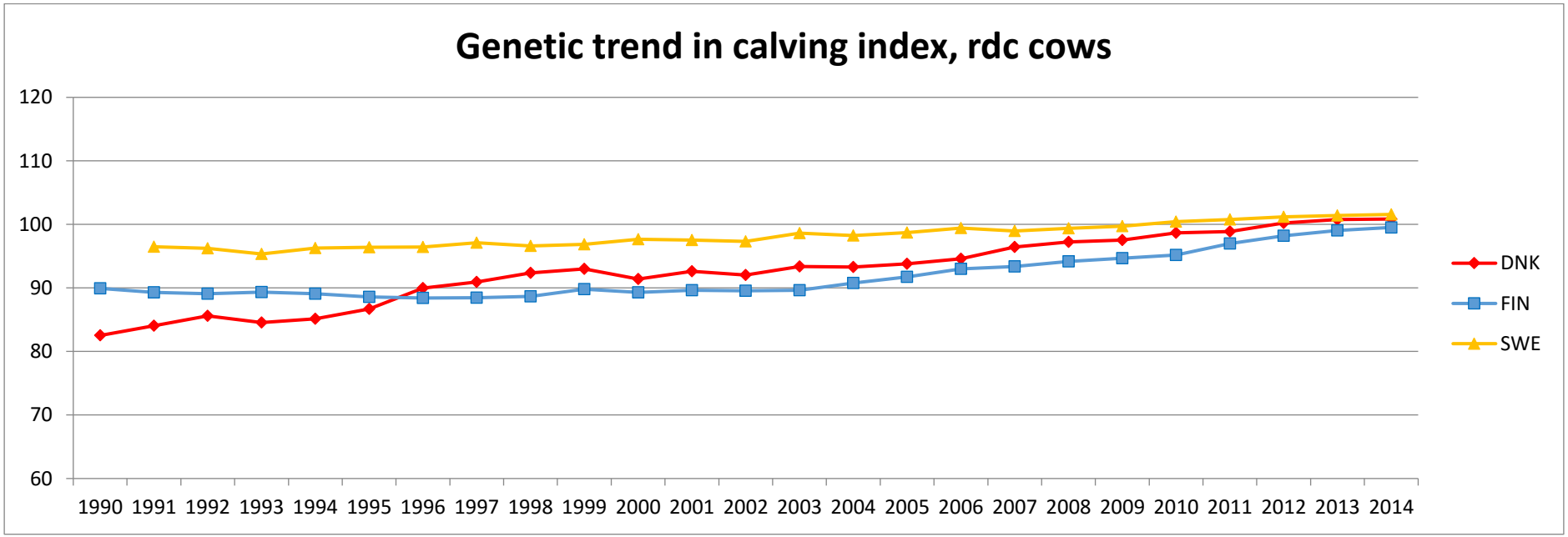
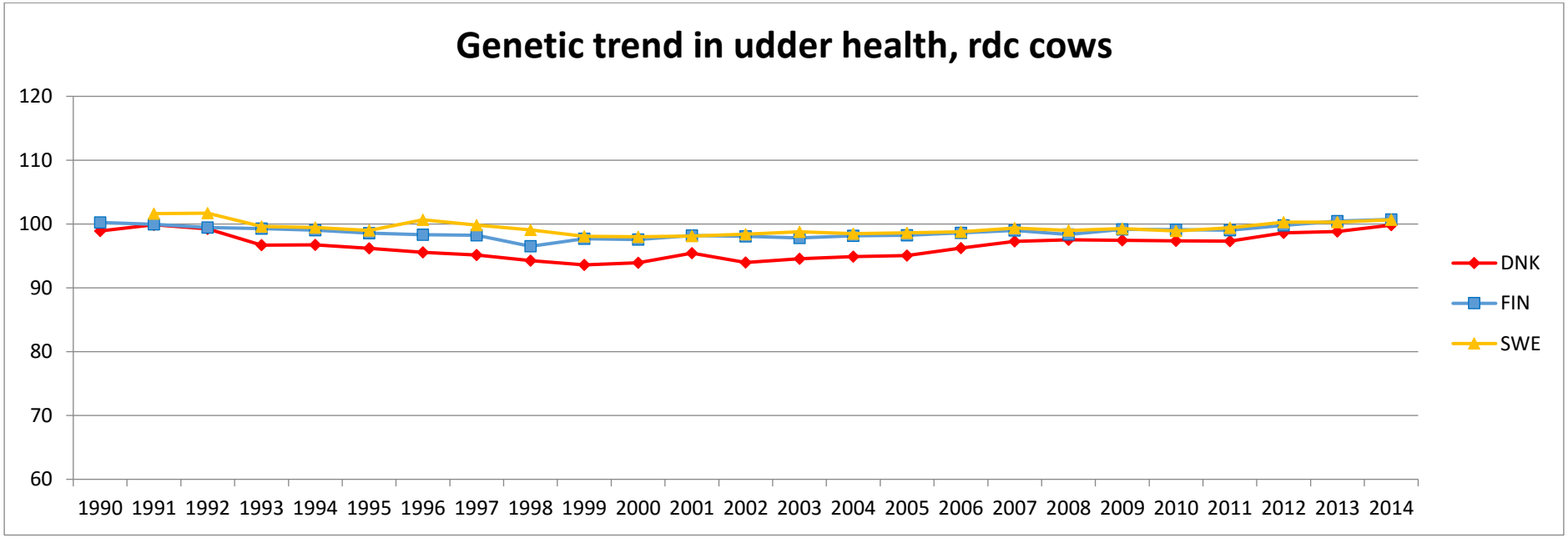
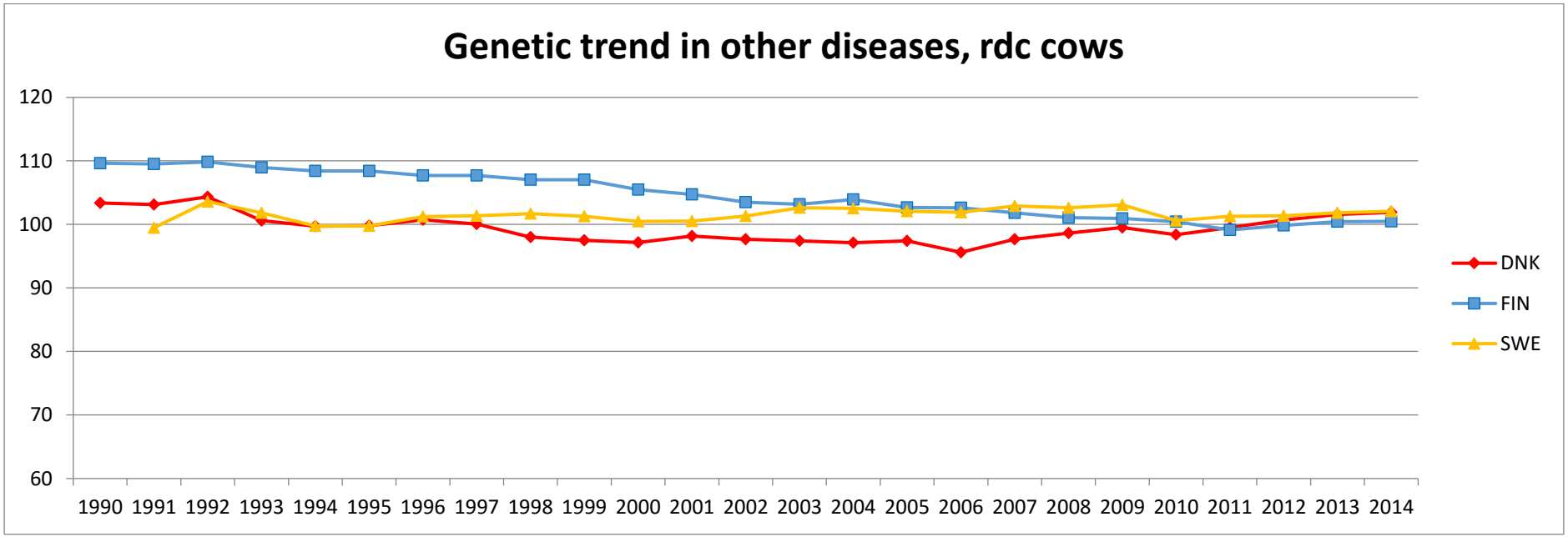
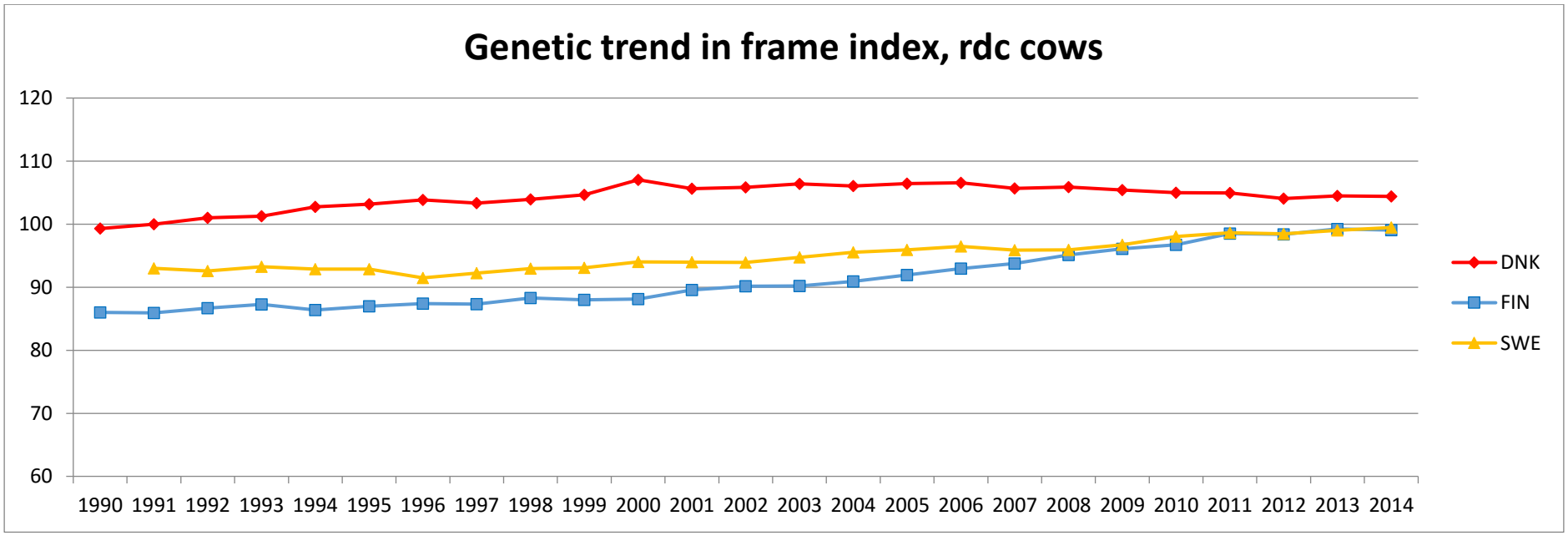
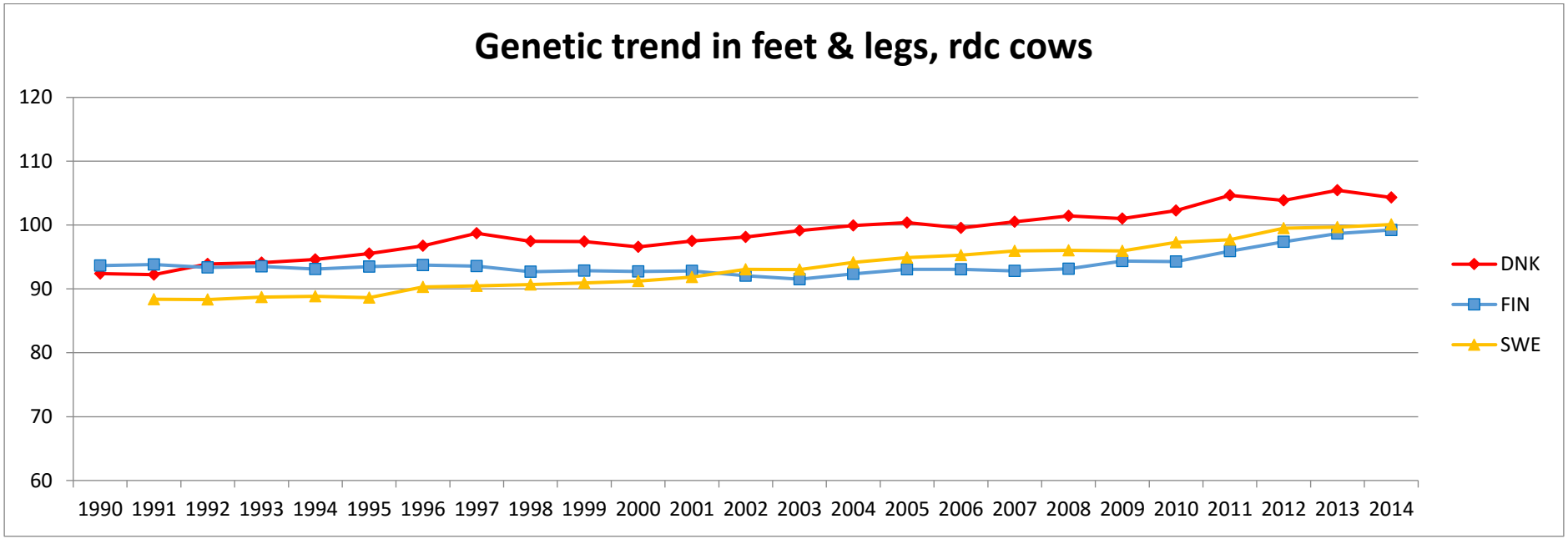
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

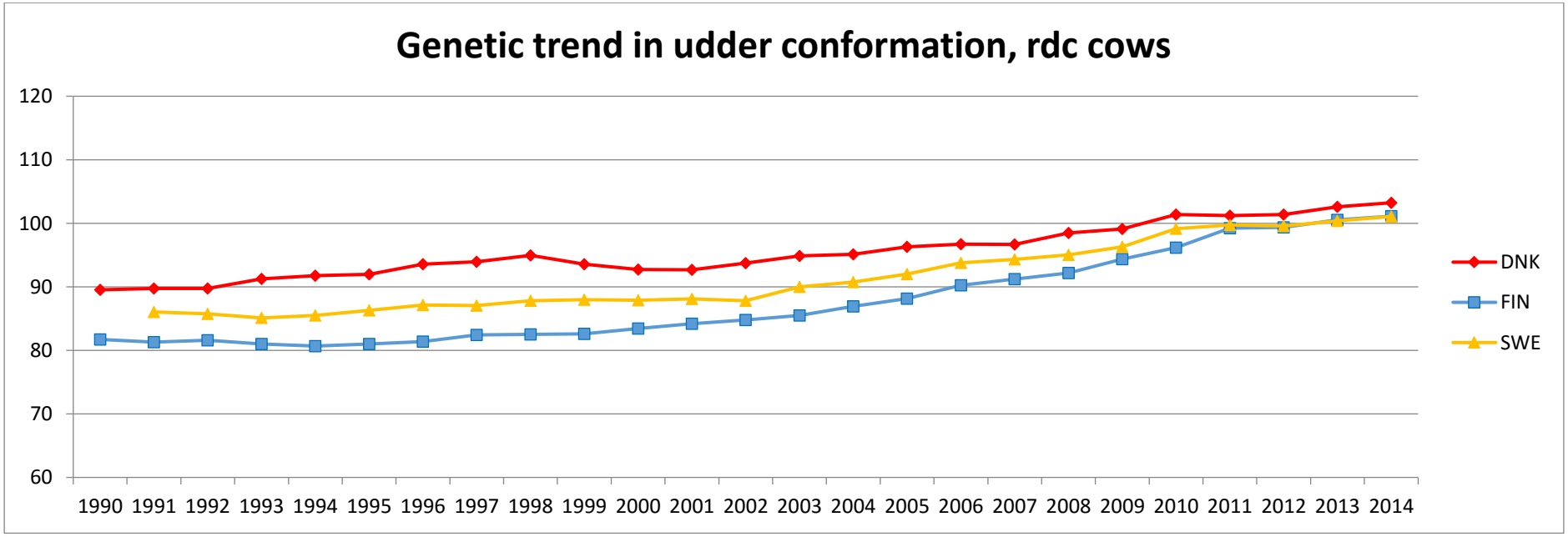

Genetic trend in calving index, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

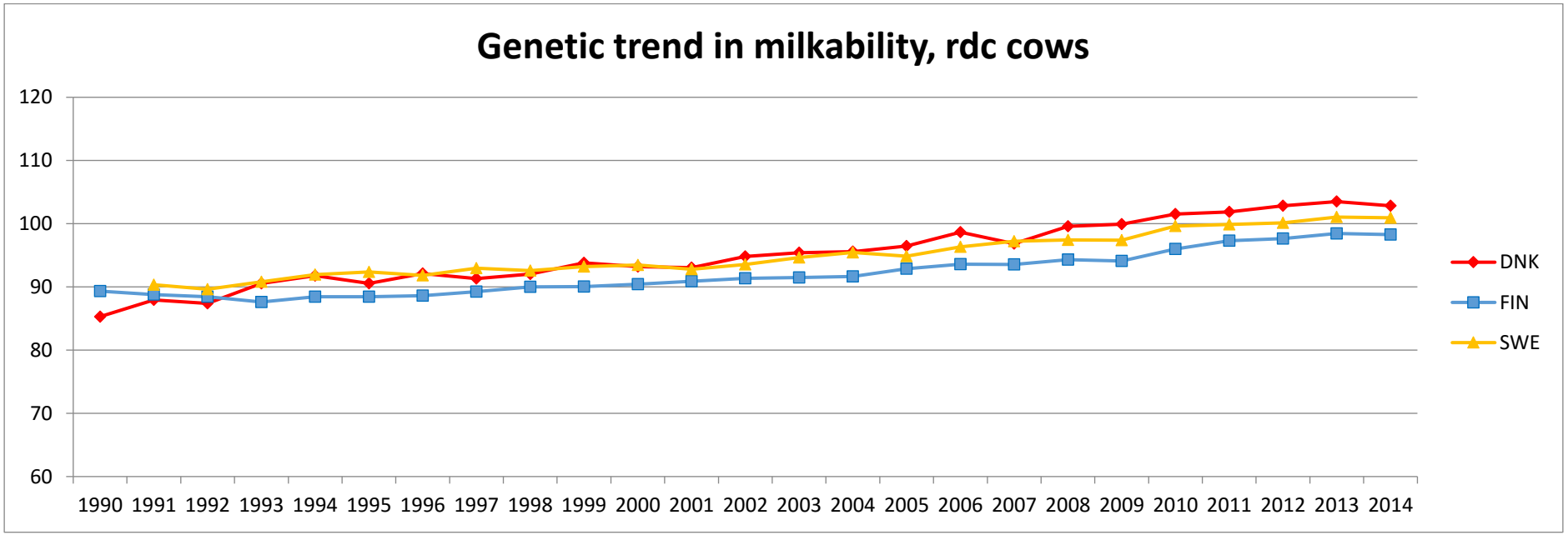

Genetic trend in udder health, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

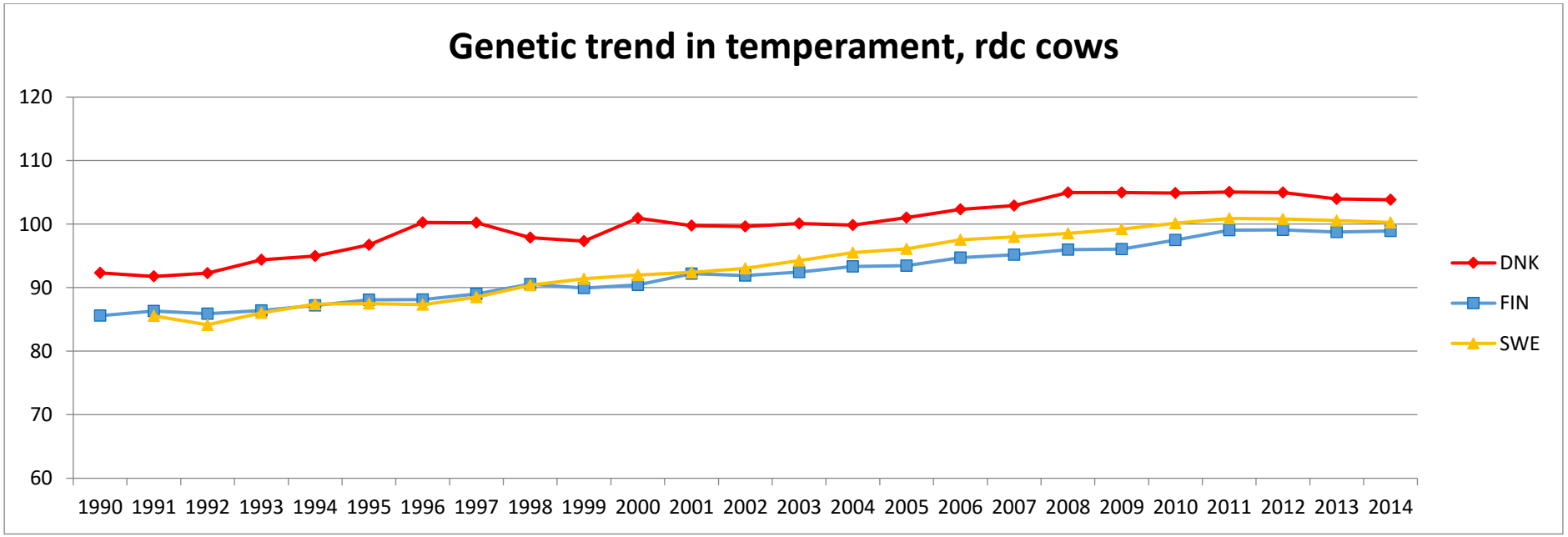

Genetic trend in other diseases, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

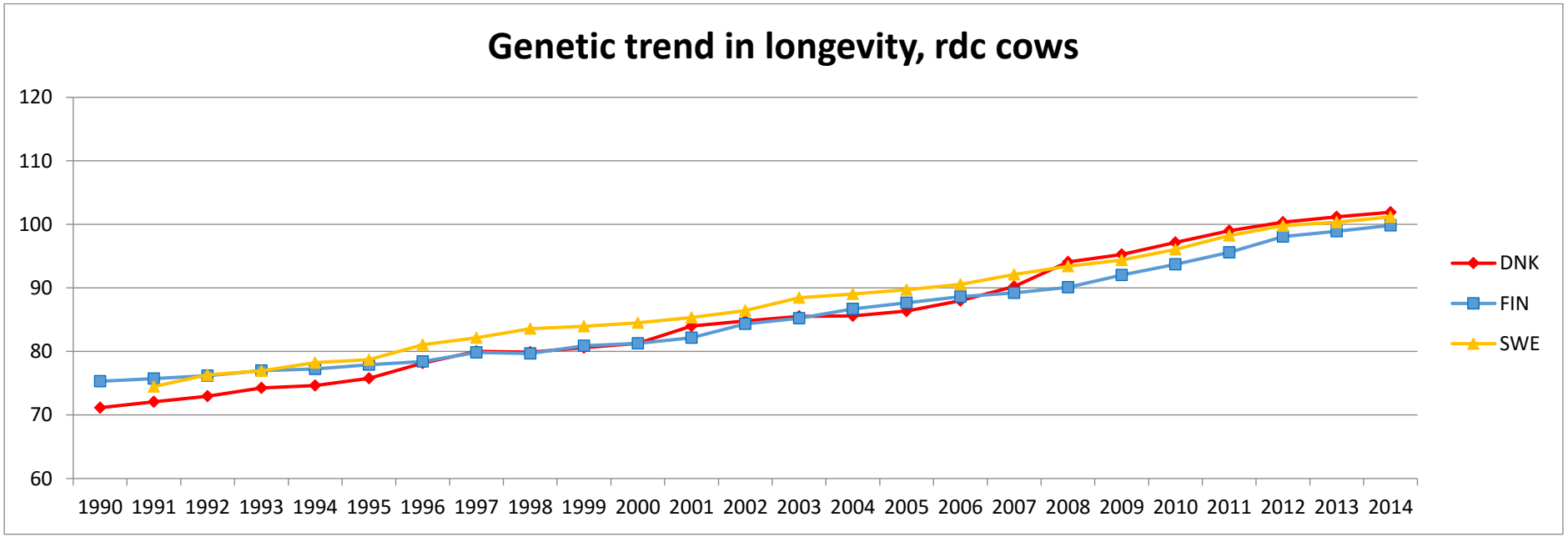

Genetic trend in frame index, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

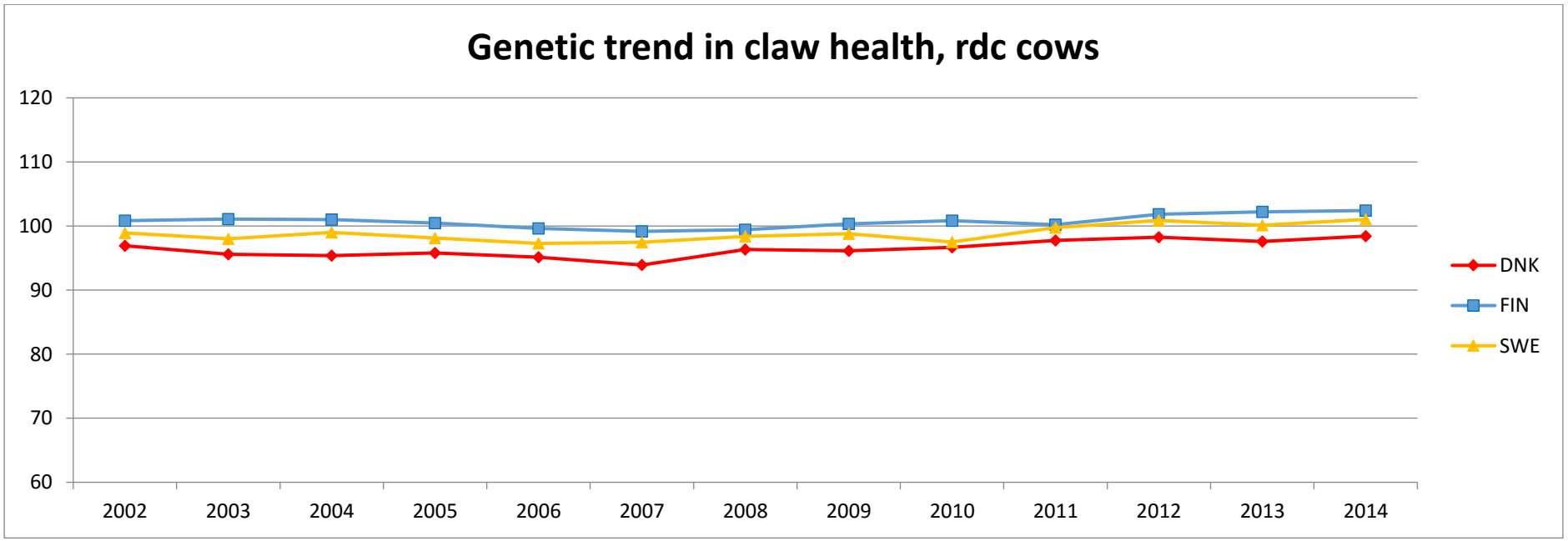

Genetic trend in feet & legs, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in udder conformation, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

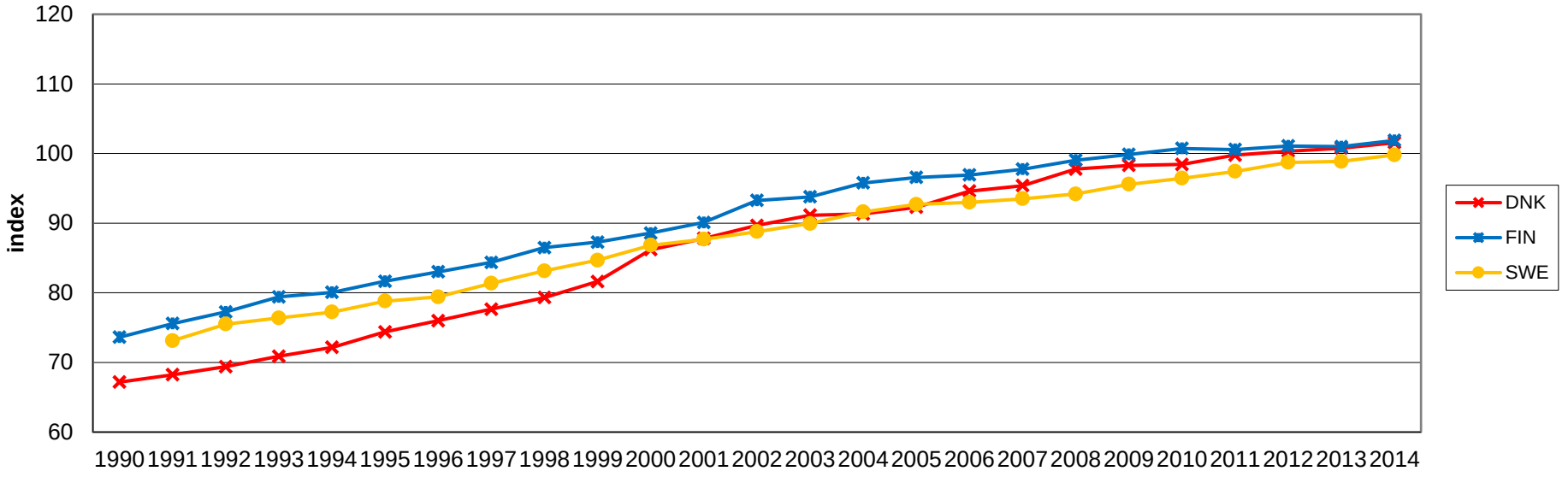

Genetic trend in milkability, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in temperament, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

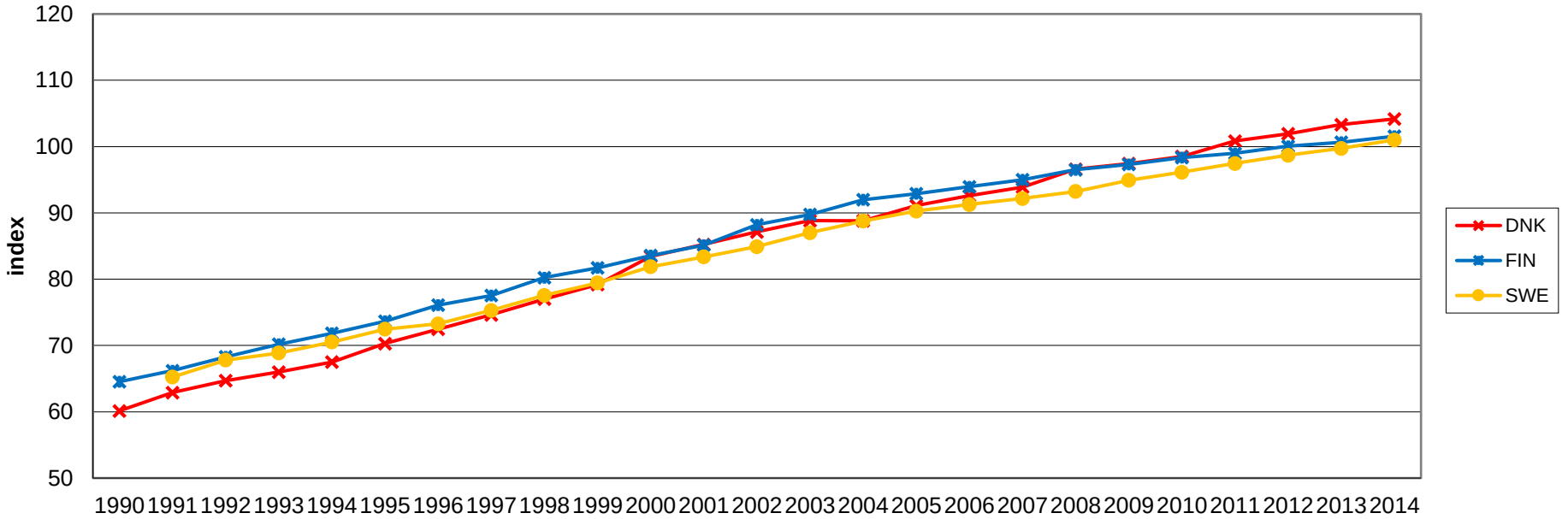

Genetic trend in longevity, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in claw health, rdc cows
120
110
100
90
80
70
60
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

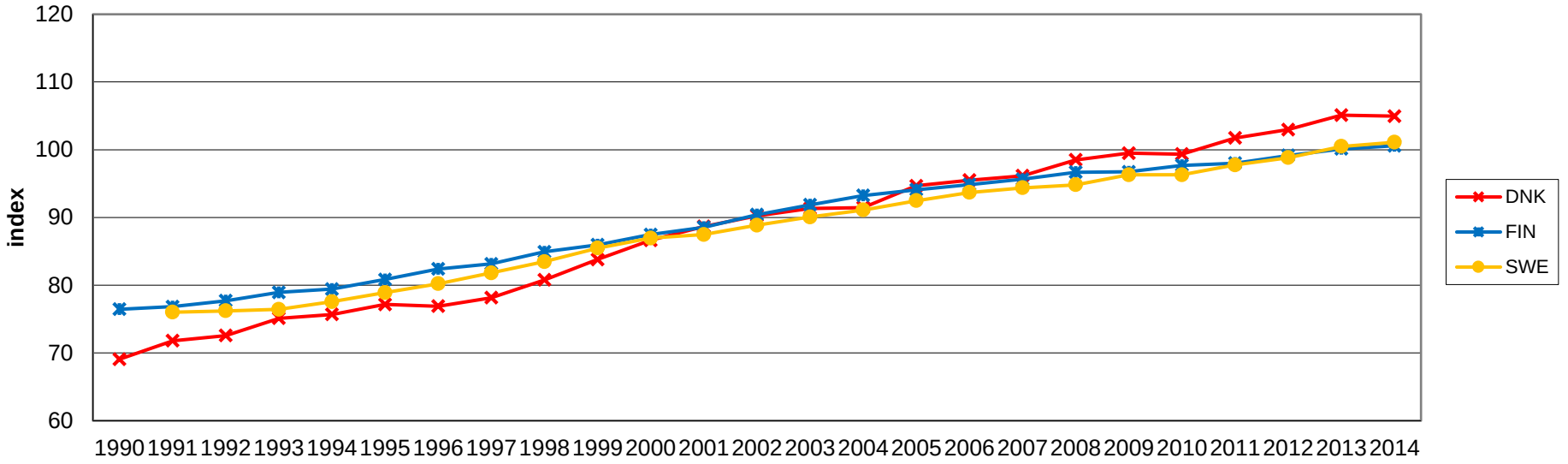
Genetic trend: milk index, RDC cows



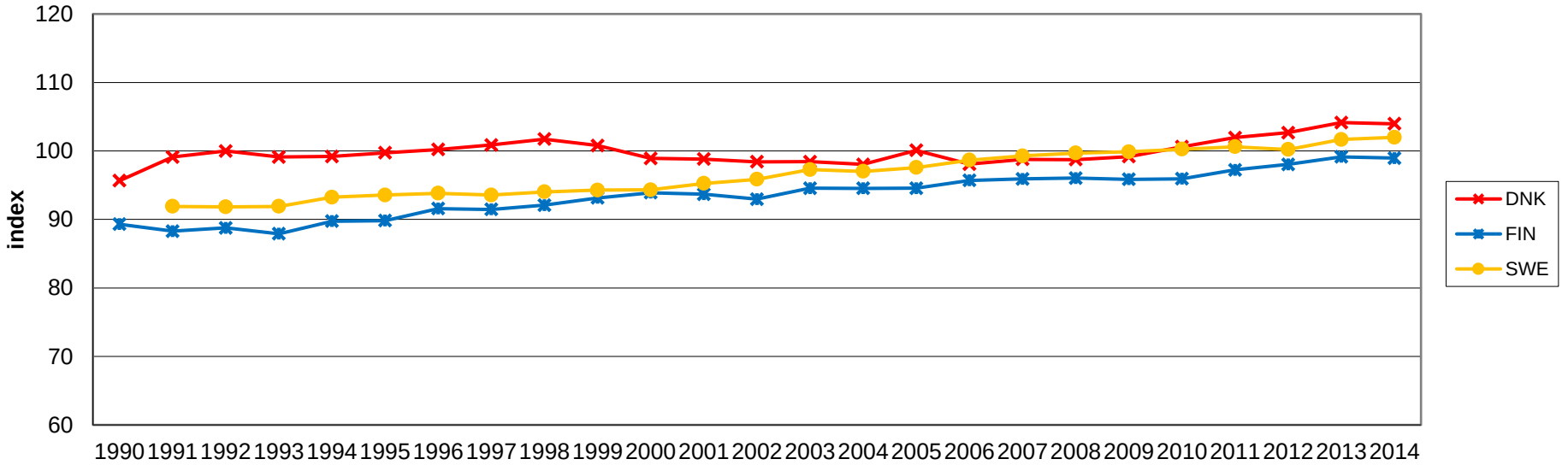
Genetic trend: protein kg index, RDC cows



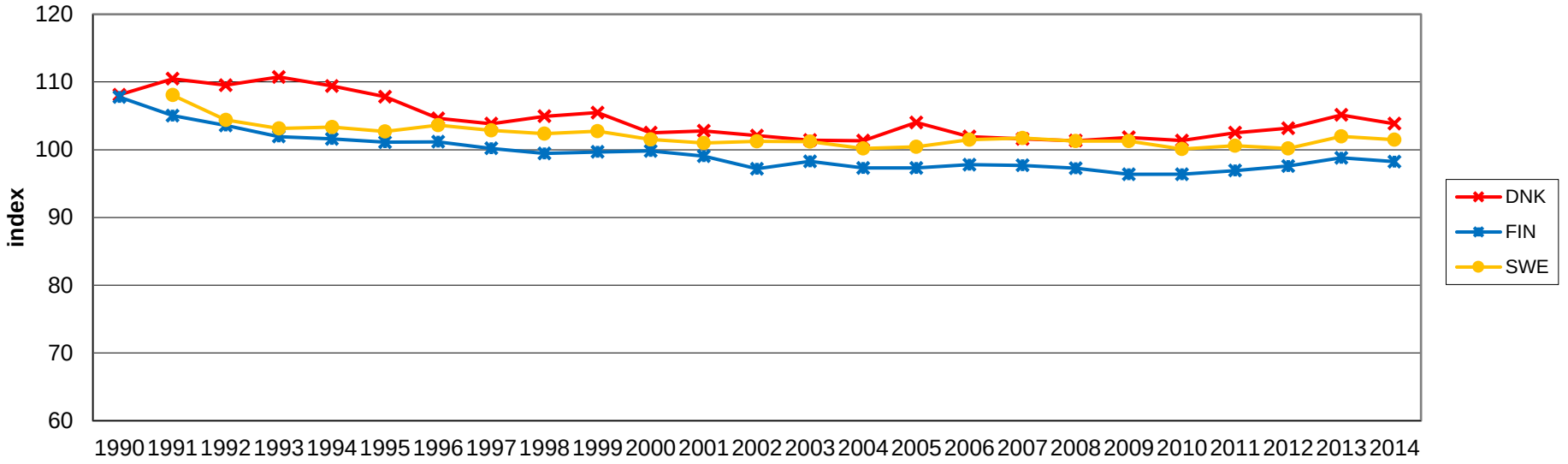
Genetic trend: fat kg index, RDC cows



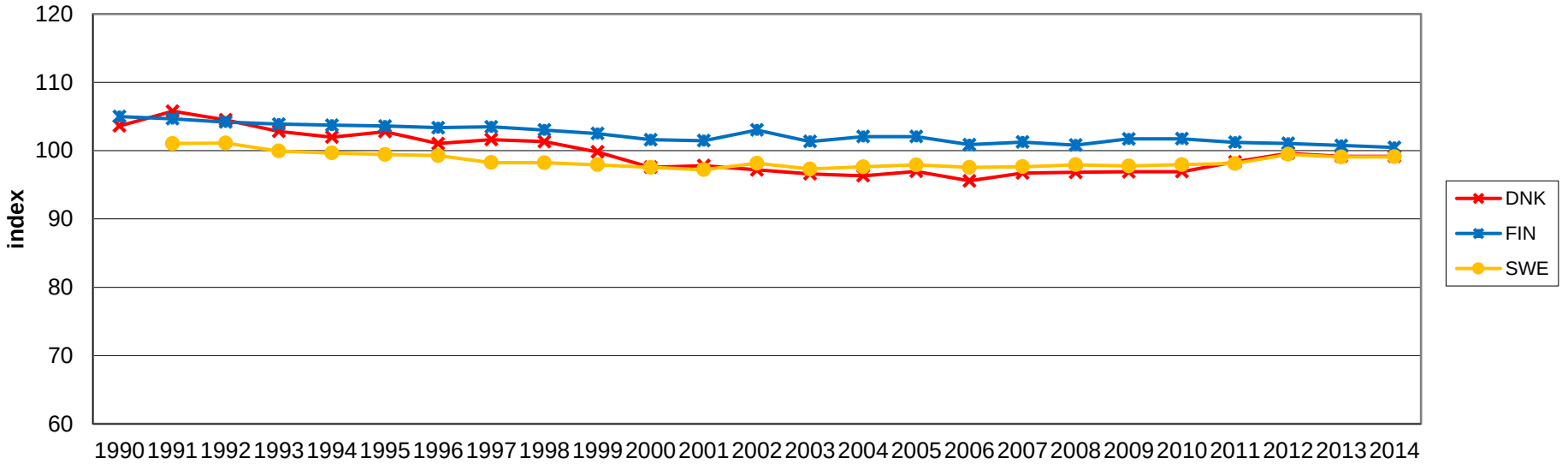
Genetic trend: protein% index, RDC cows

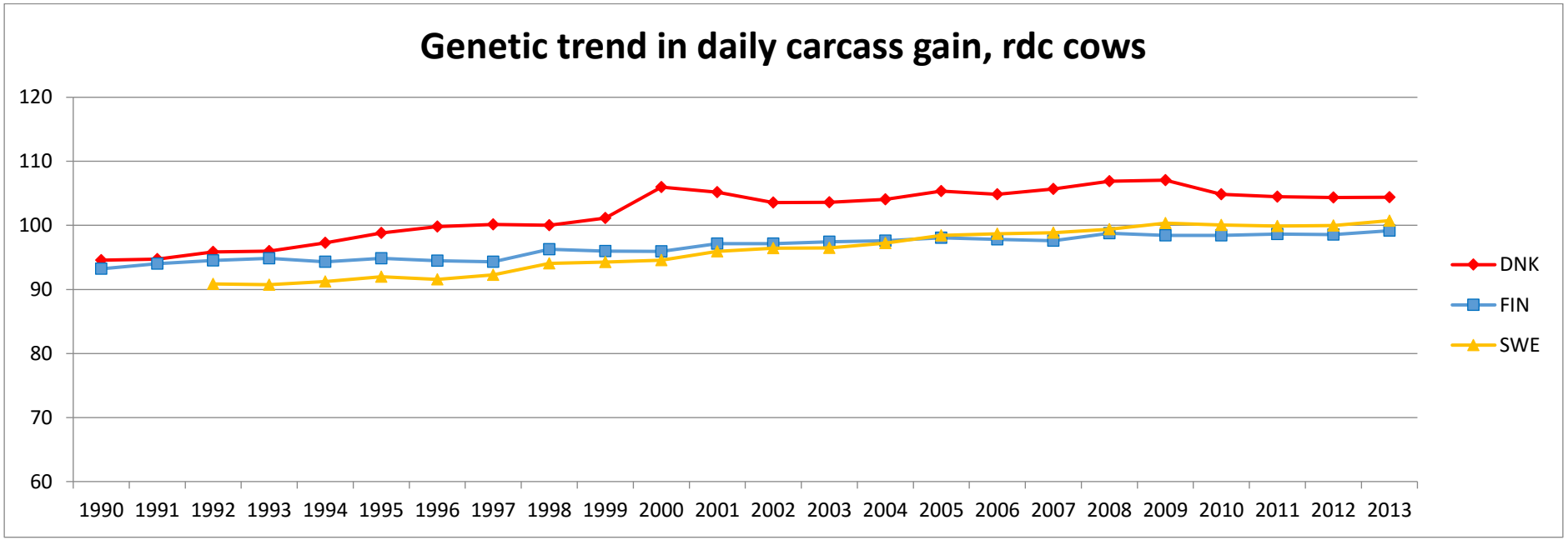


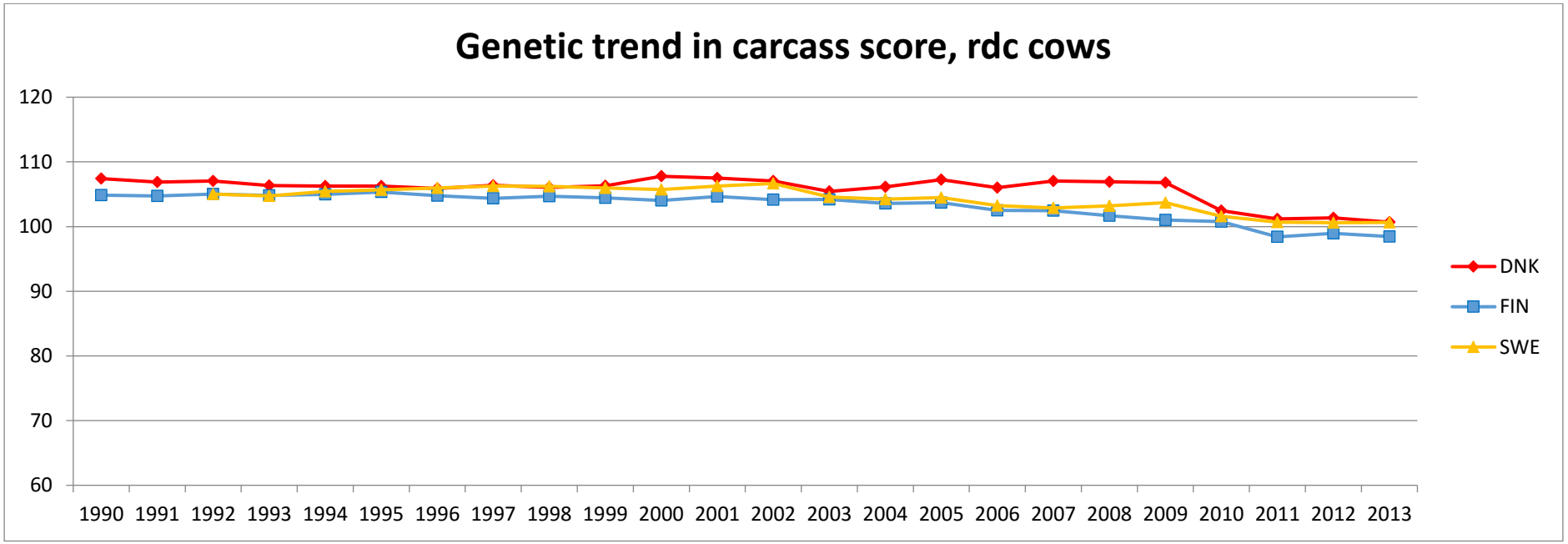
Genetic trend: fat% index, RDC cows

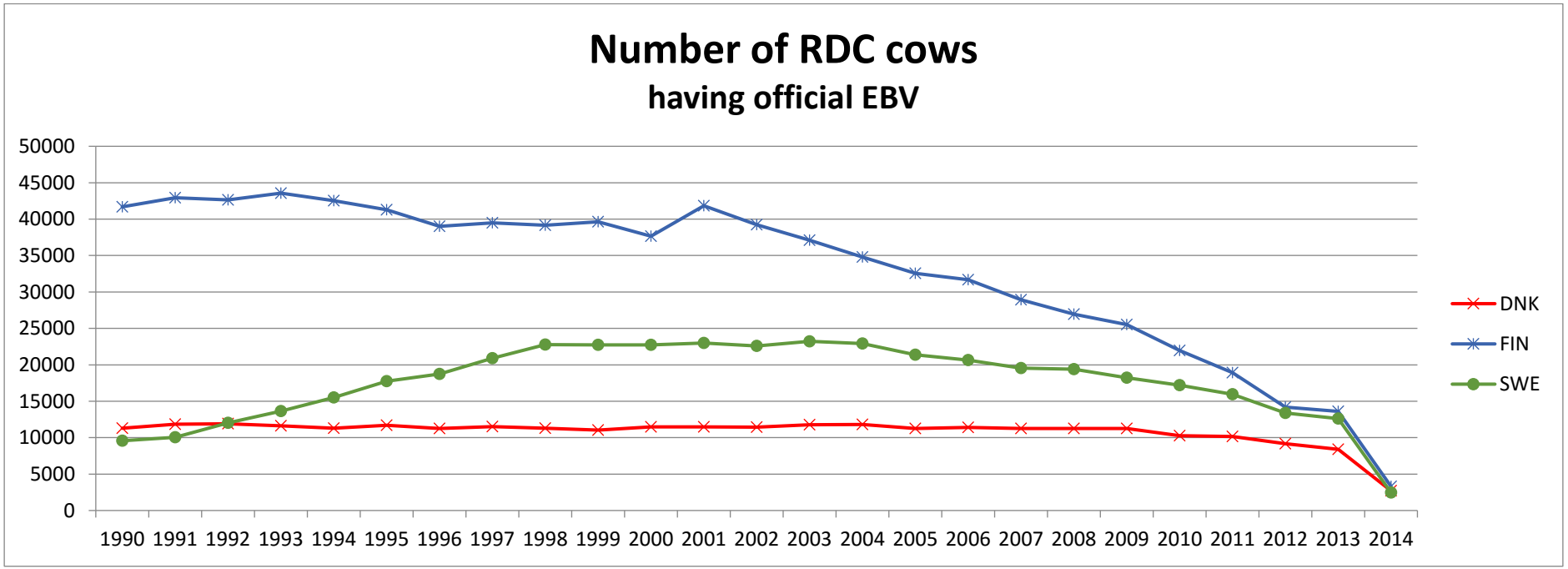


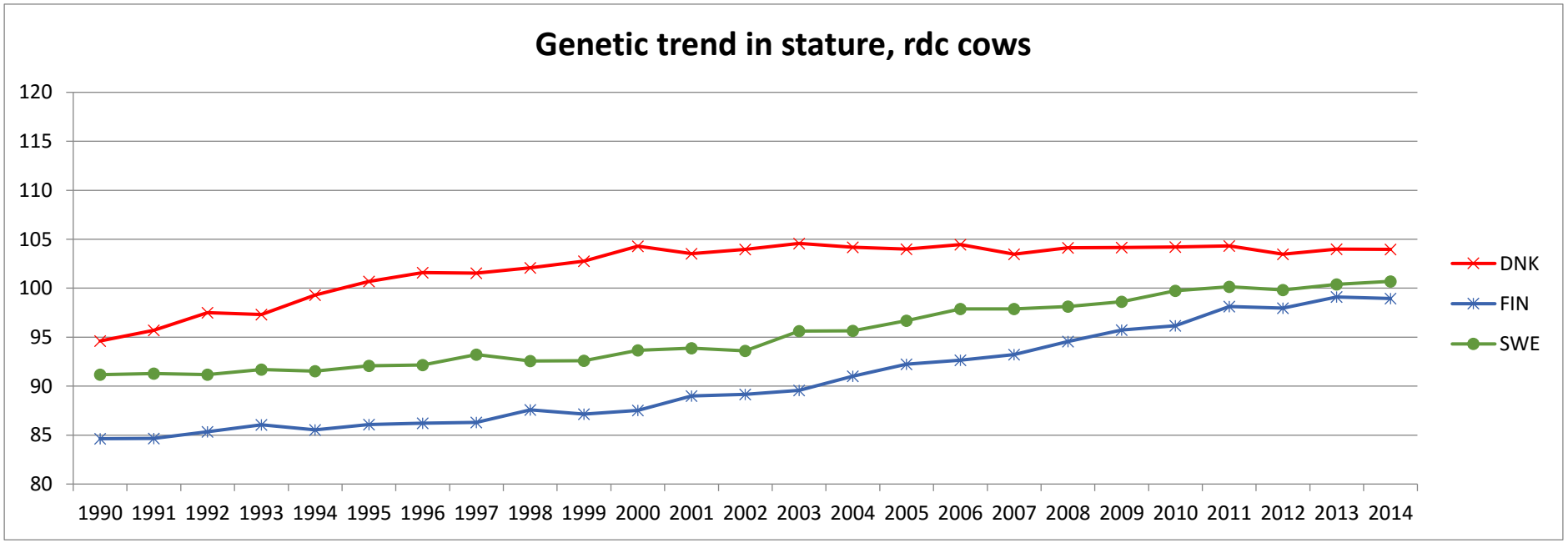
Genetic trend: persistency index, RDC cows

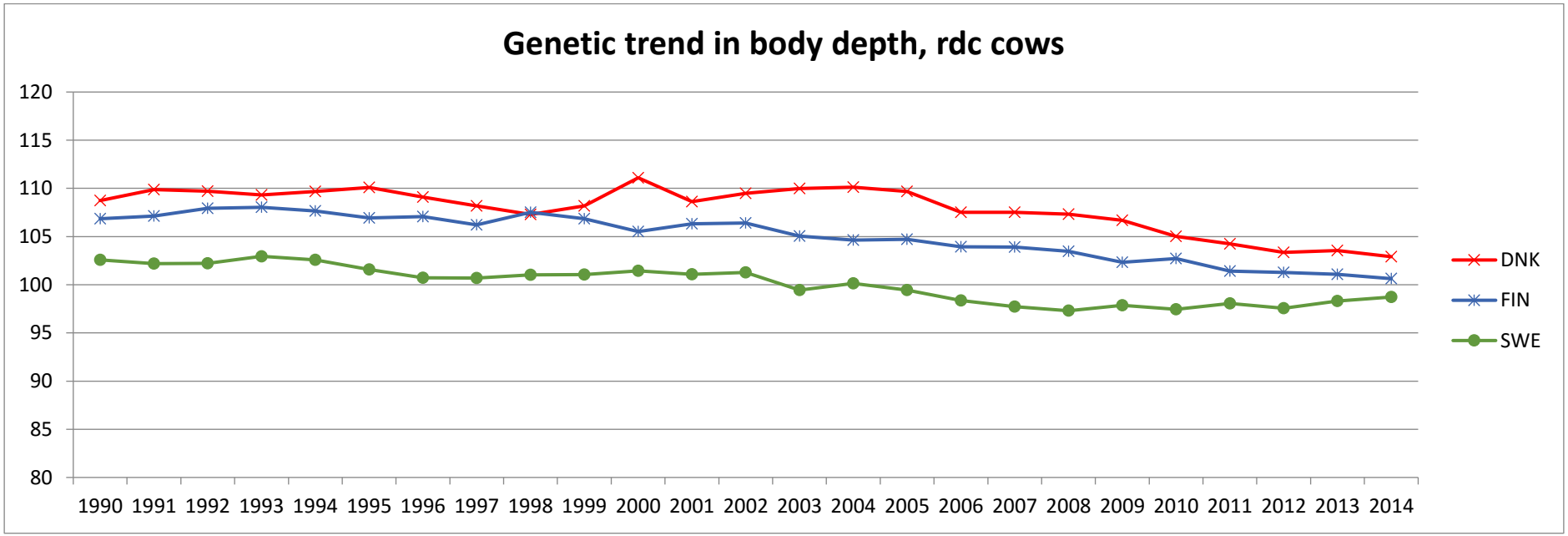


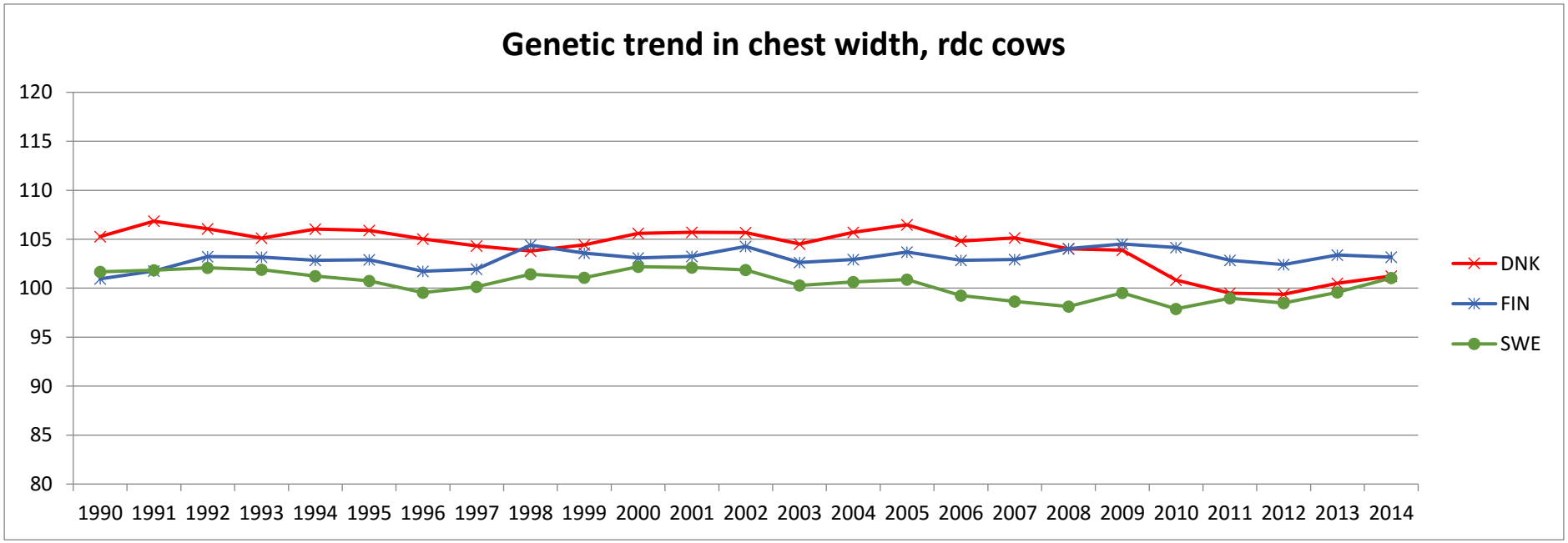

Genetic trend in daily carcass gain, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
DNK
FIN
SWE


Genetic trend in carcass score, rdc cows
120
110
100
90
80
70
60
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
DNK
FIN
SWE


Number of RDC cows
having official EBV
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in stature, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in body depth, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in chest width, rdc cows
120
115
110
105
100
95
90
85
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DNK
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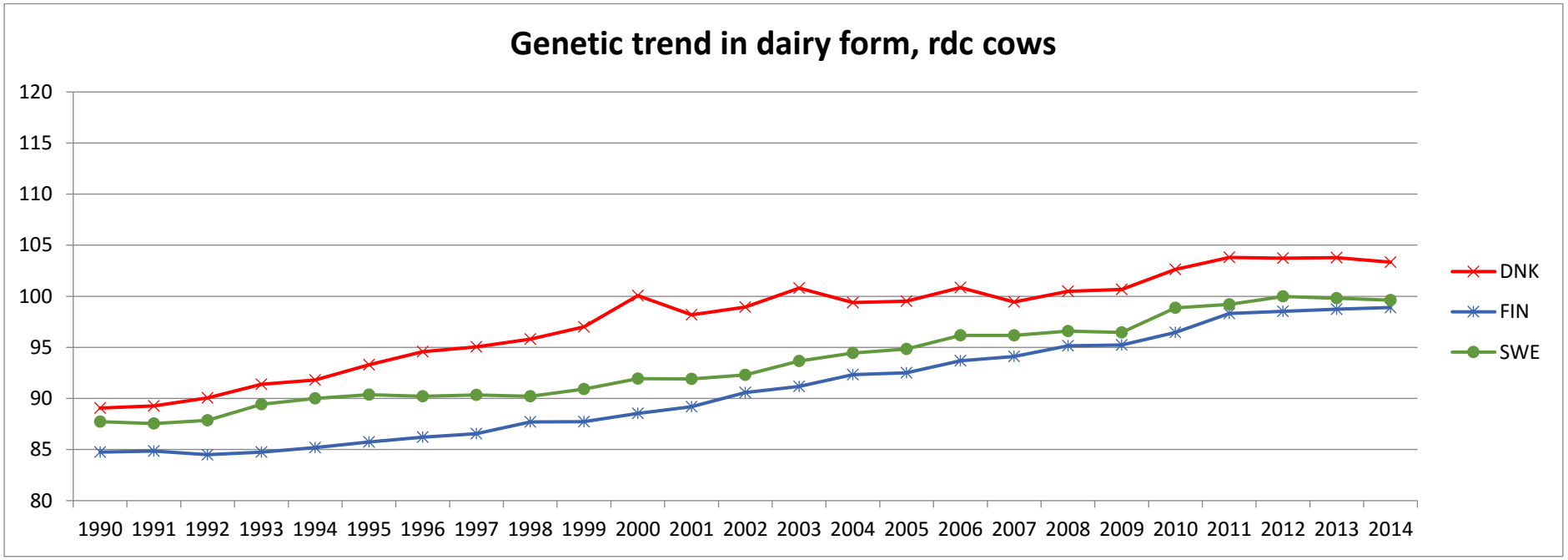
SWE


Genetic trend in dairy form, rdc cows
120
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95
90
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
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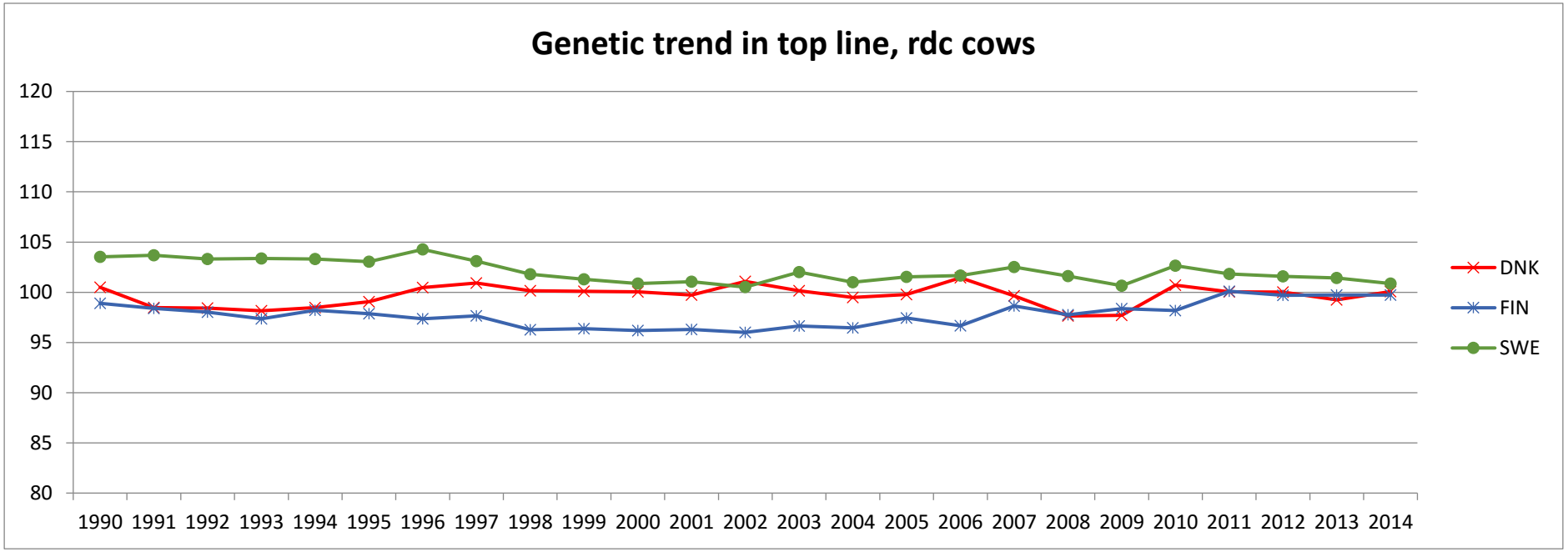
Genetic trend in top line, rdc cows
120
115
110
105
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95
90
85
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
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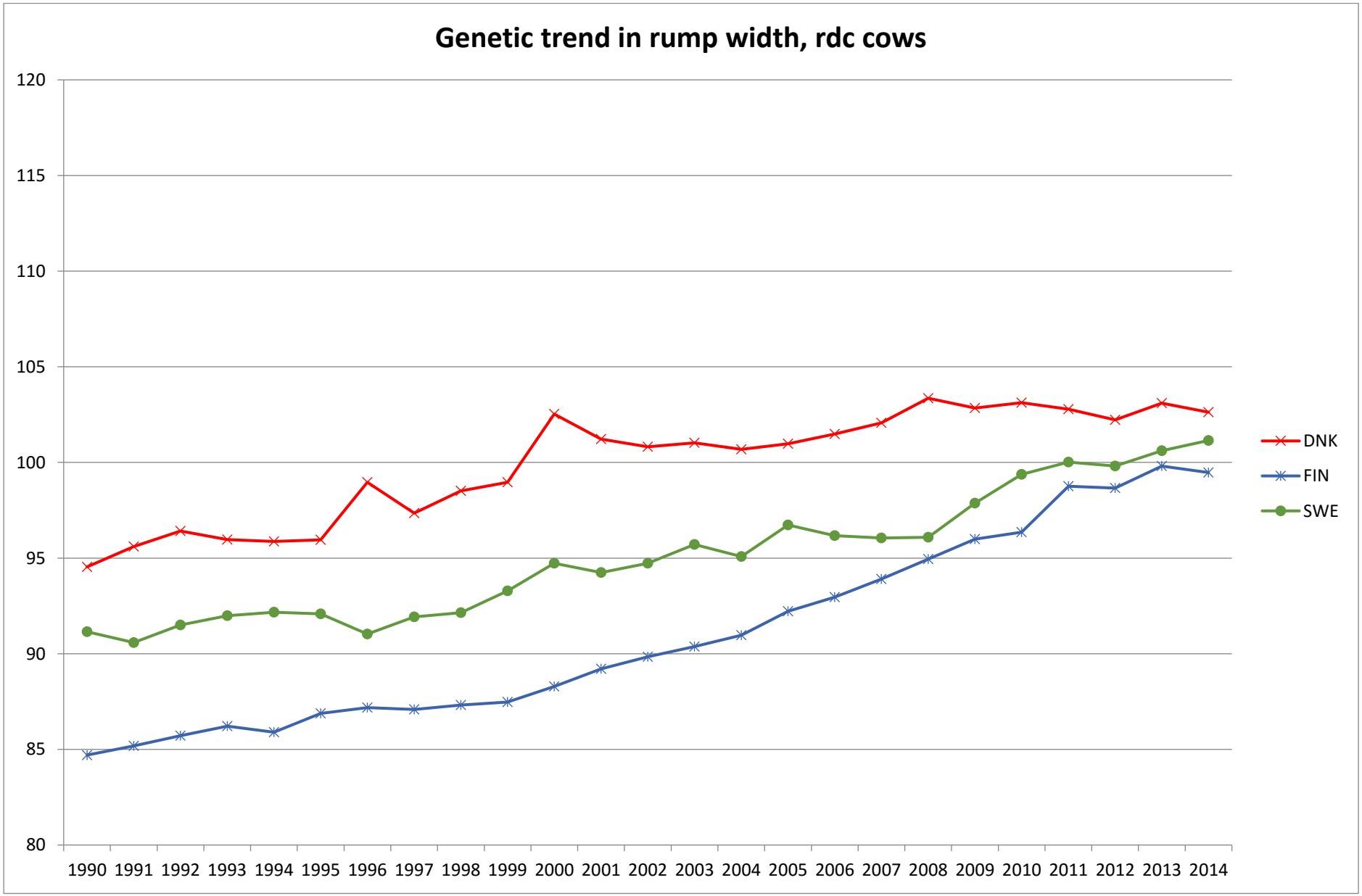
SWE


Genetic trend in rump width, rdc cows
120
115
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95
90
85
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
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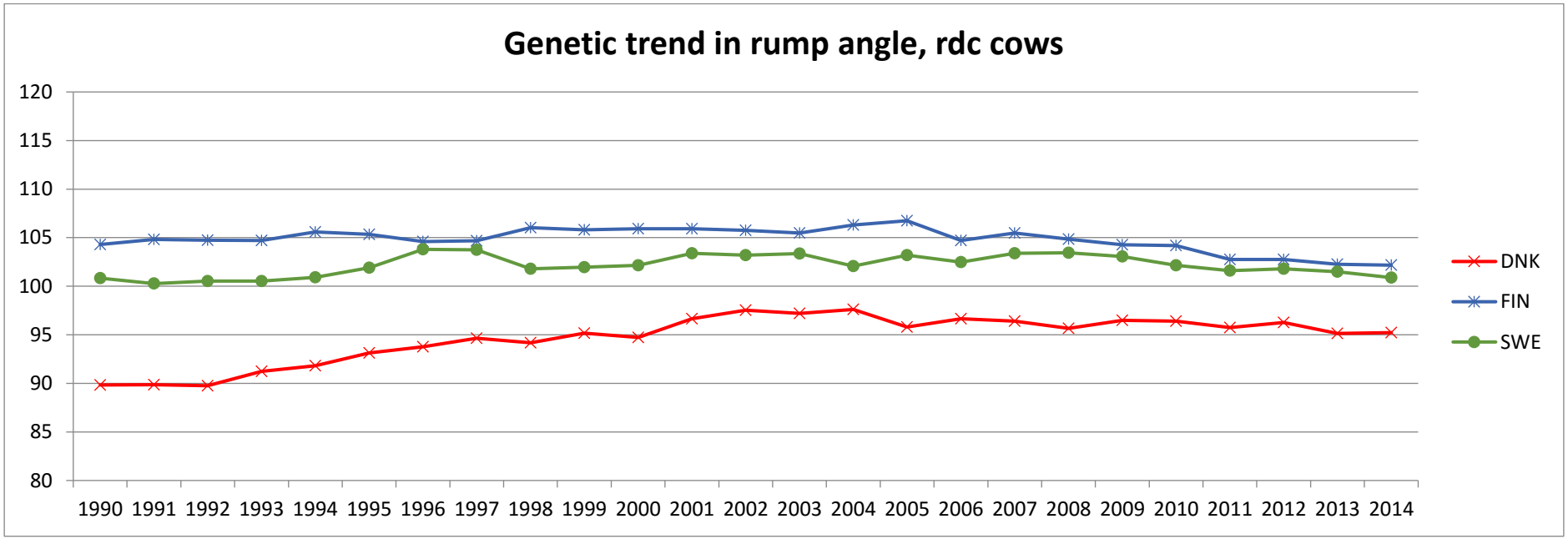
SWE


Genetic trend in rump angle, rdc cows
120
115
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105
100
95
90
85
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
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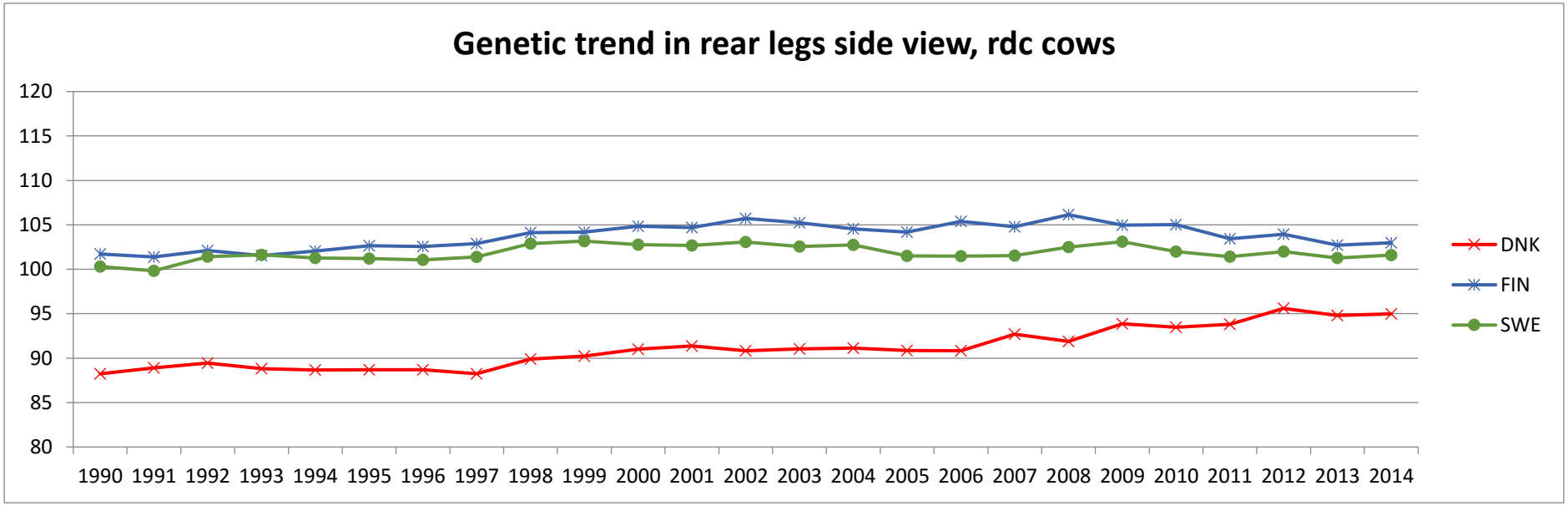
SWE


Genetic trend in rear legs side view, rdc cows
120
115
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90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
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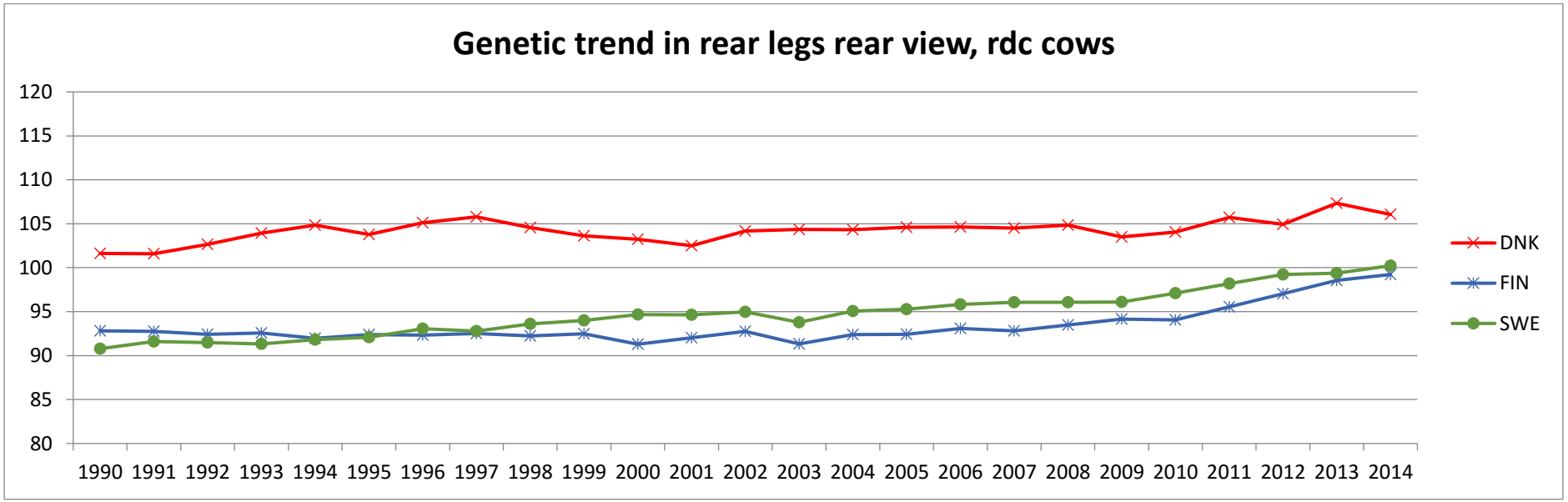
SWE


Genetic trend in rear legs rear view, rdc cows
120
115
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90
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
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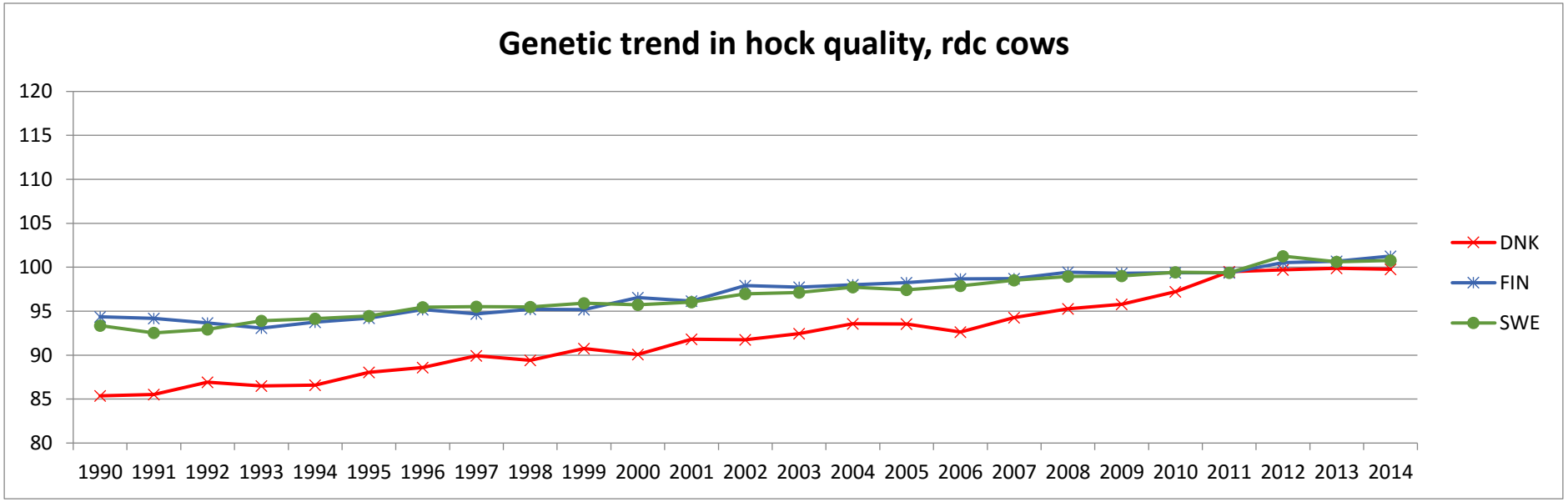
SWE


Genetic trend in hock quality, rdc cows
120
115
110
105
100
95
90
85
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
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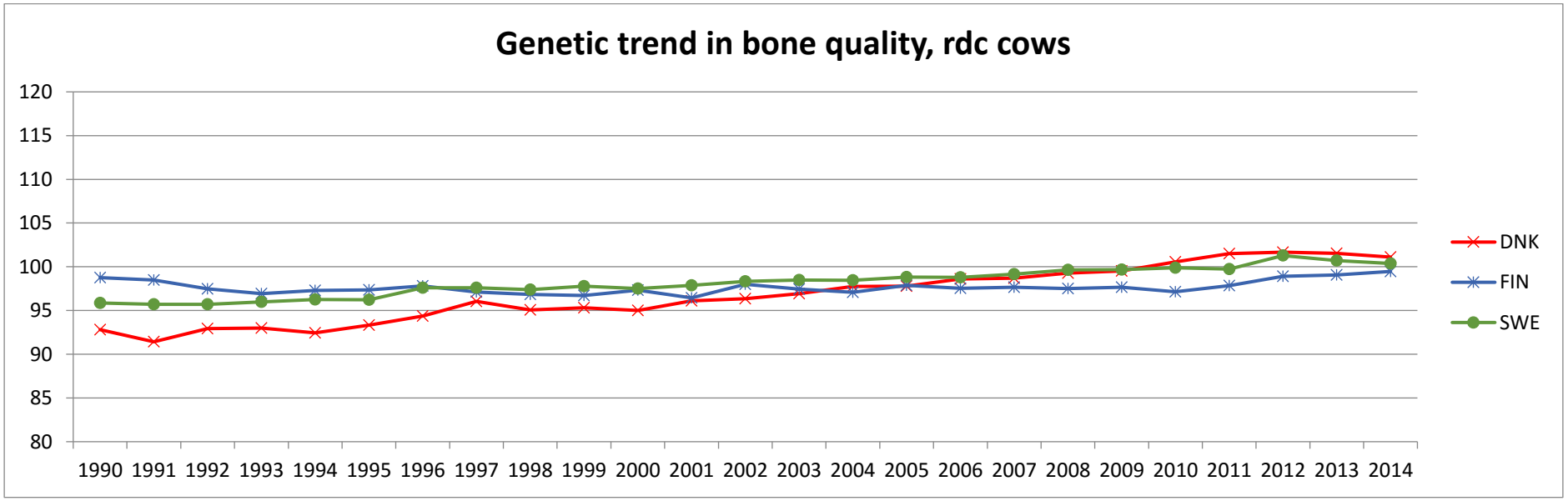
SWE


Genetic trend in bone quality, rdc cows
120
115
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90
85
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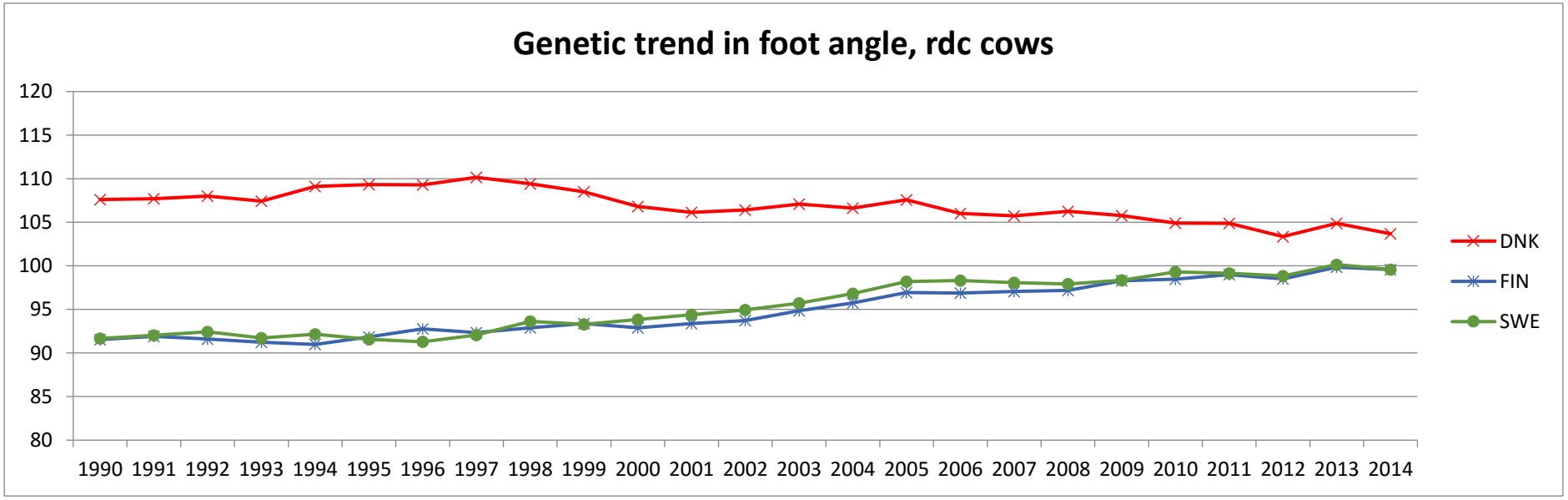
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in foot angle, rdc cows
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90
85
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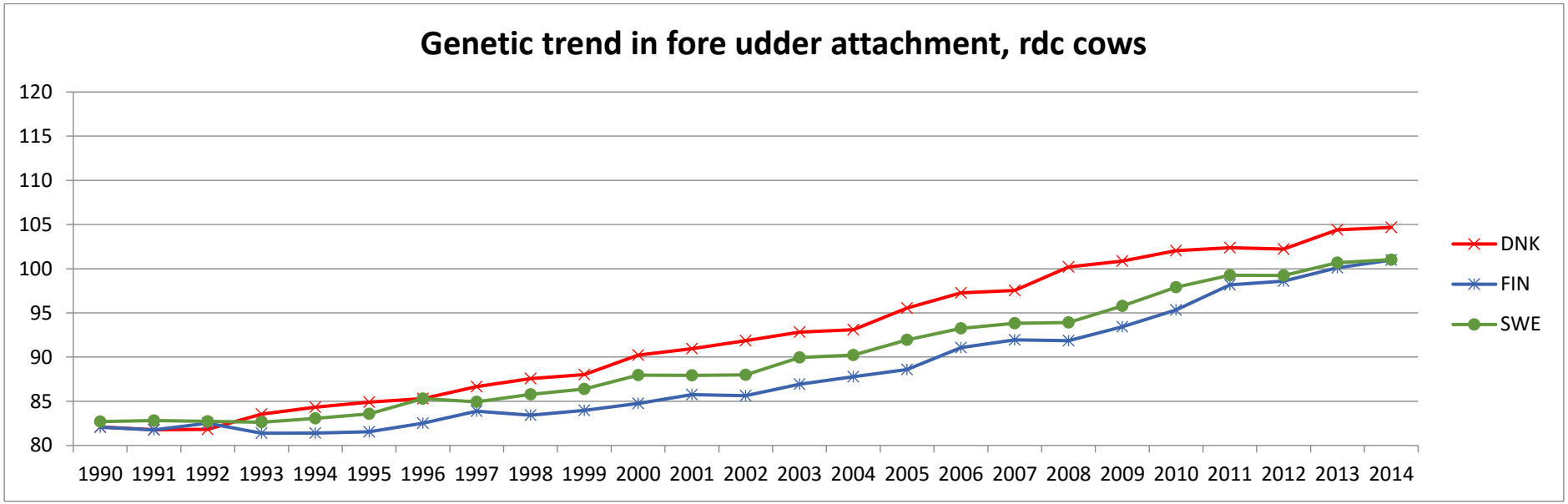
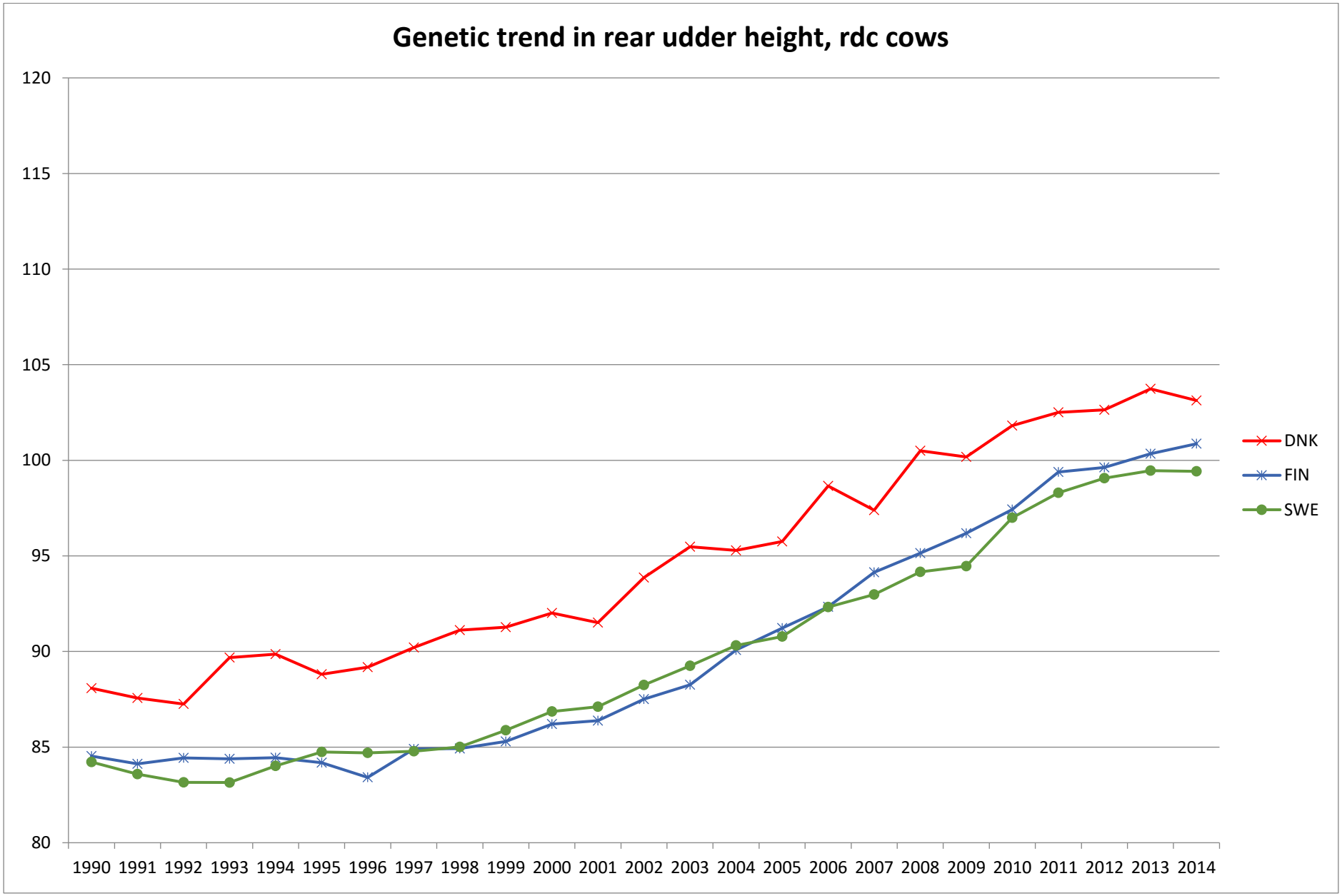
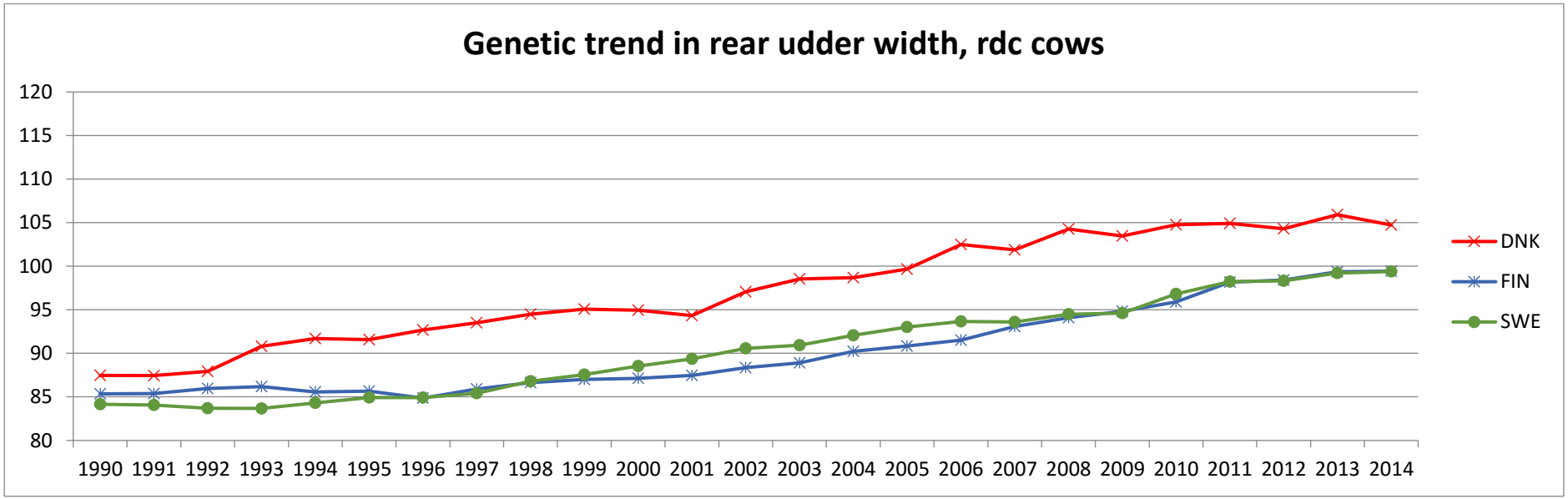
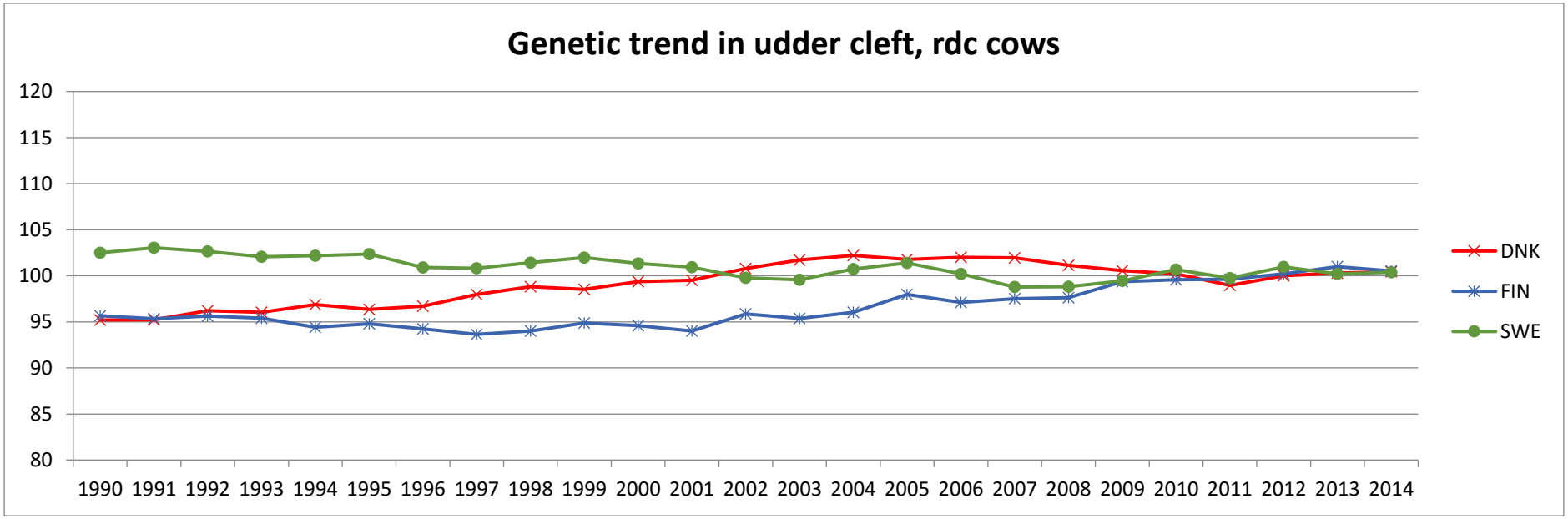
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in fore udder attachment, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in rear udder height, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in rear udder width, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in udder cleft, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
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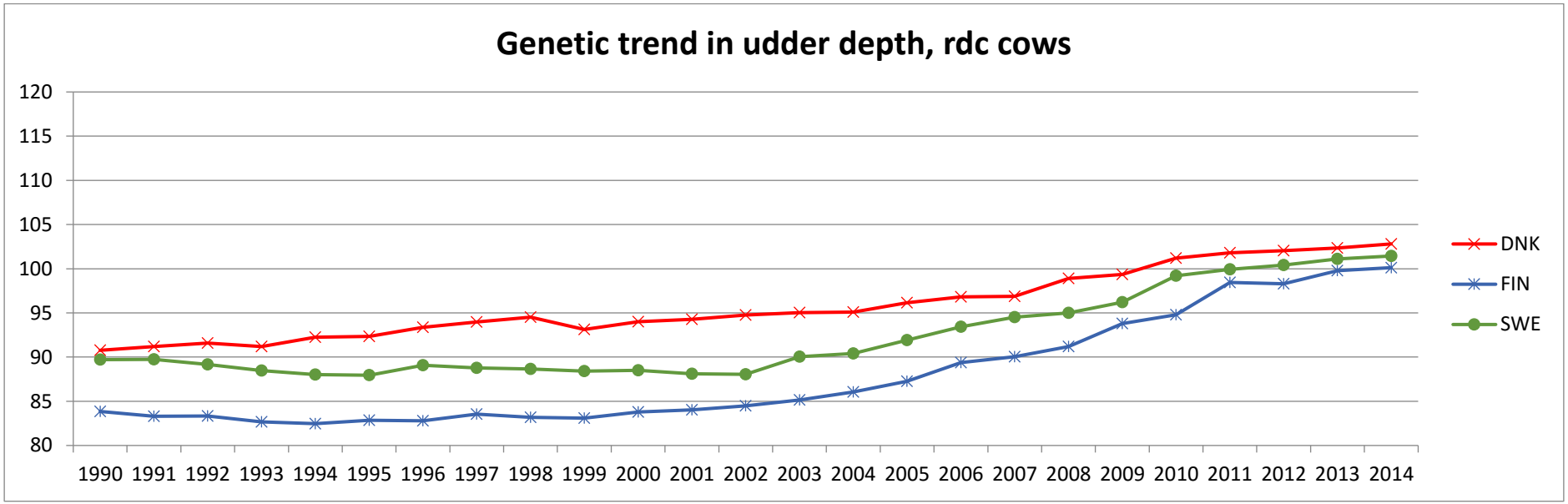
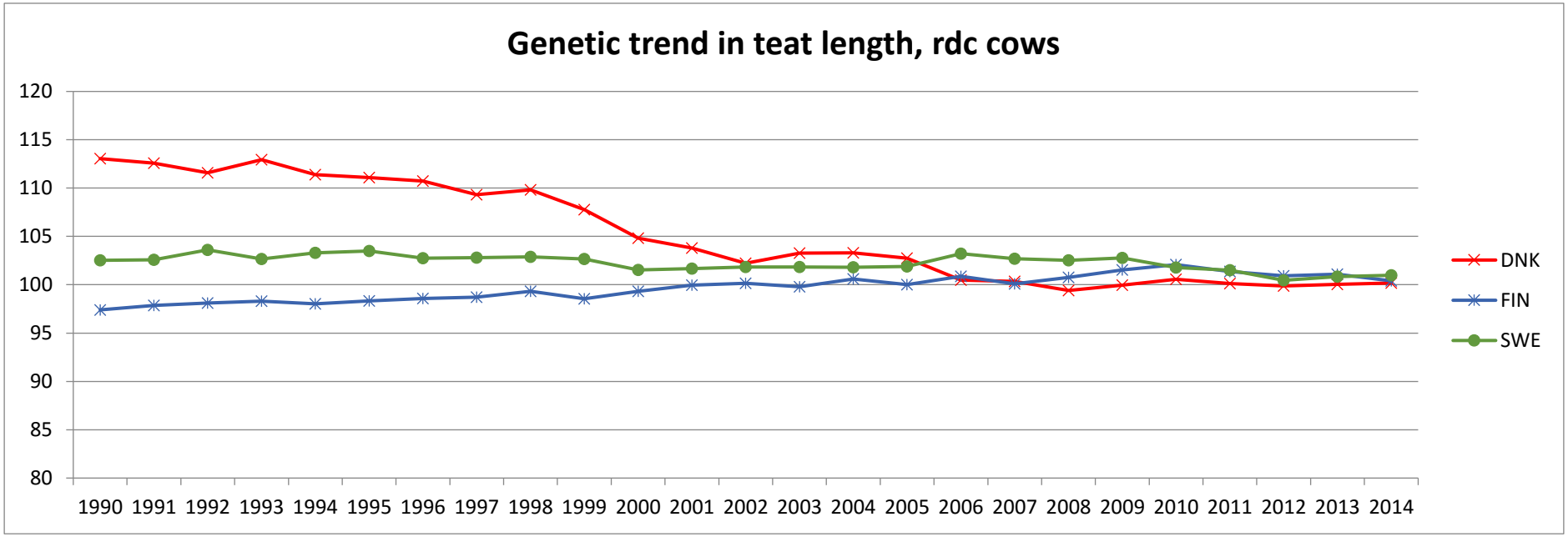
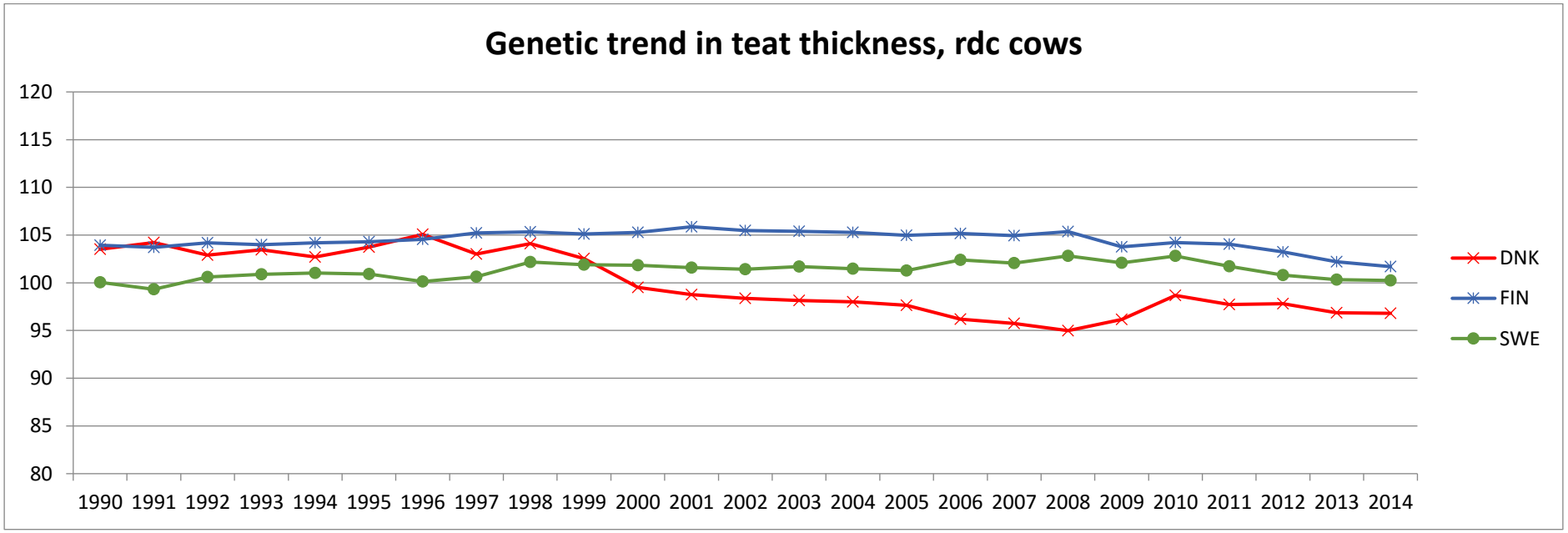
SWE


Genetic trend in udder depth, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in teat length, rdc cows
120
115
110
105
100
95
90
85
80
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in teat thickness, rdc cows
120
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
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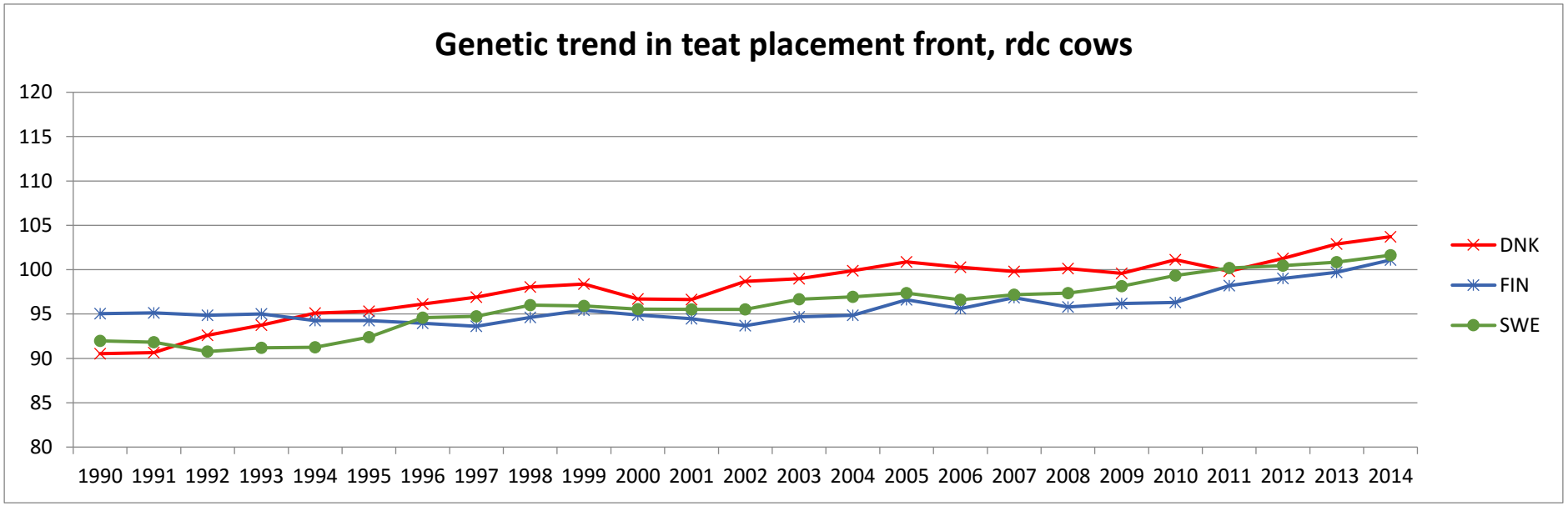
Genetic trend in teat placement front, rdc cows
120
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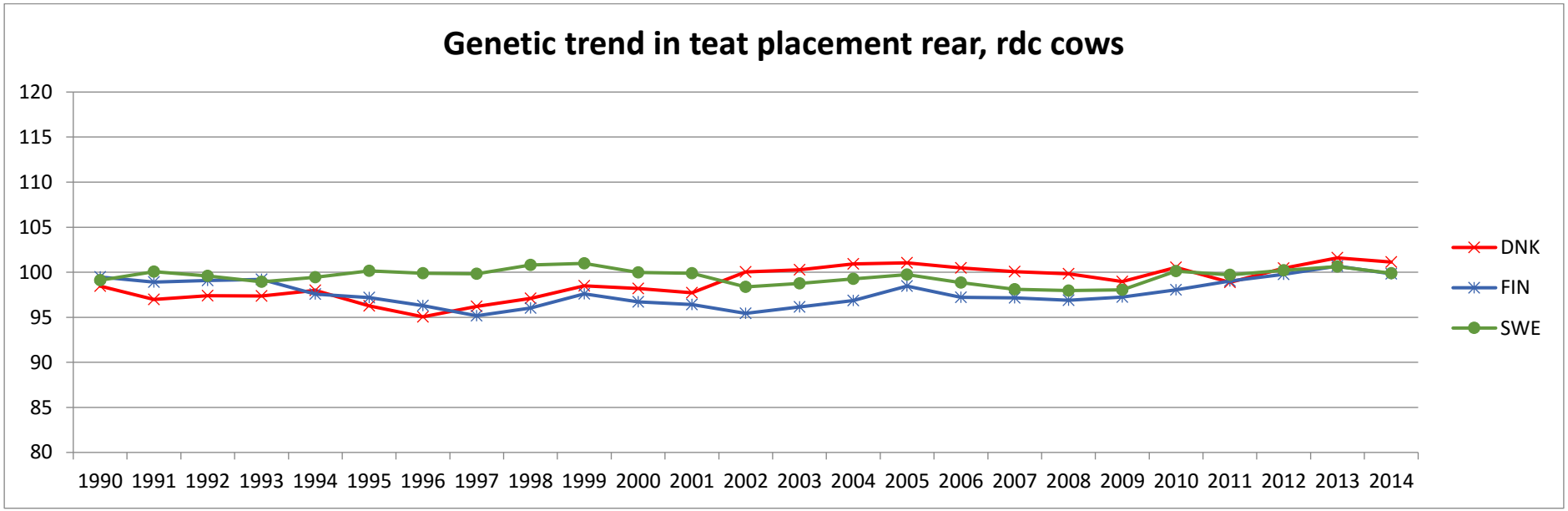
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in teat placement rear, rdc cows
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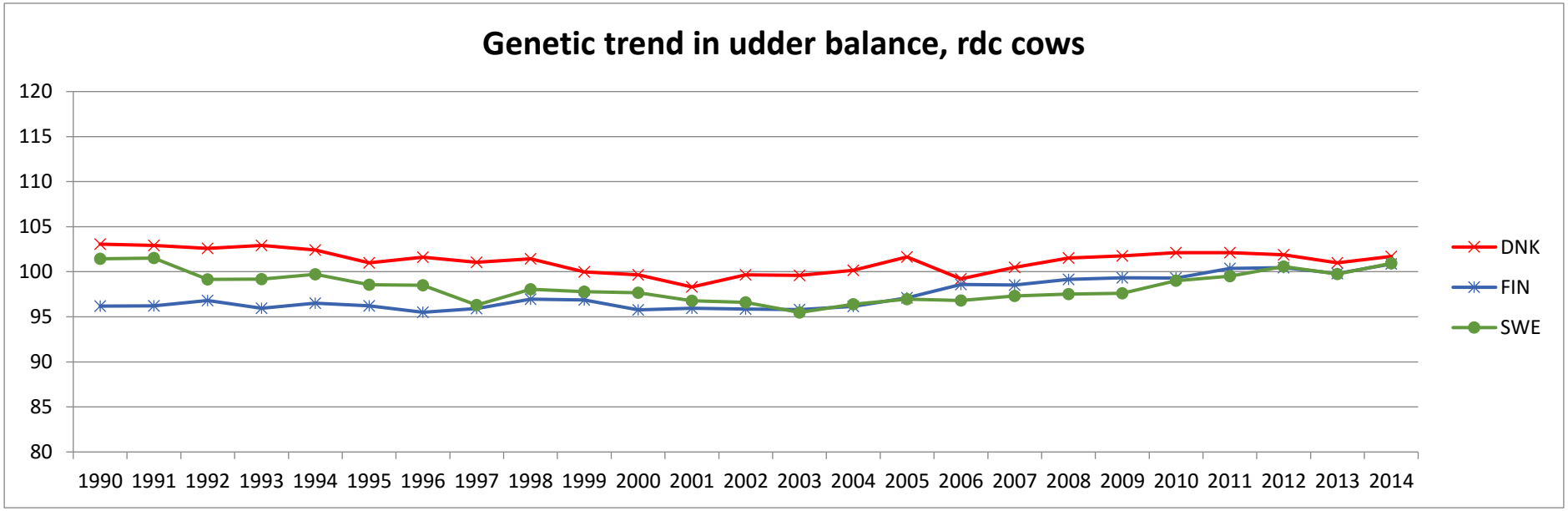
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE


Genetic trend in udder balance, rdc cows
120
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1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
DNK
FIN
SWE

Comparison of current RDC optimum values for conformation traits and classification scores from 2016 (until December)

number of scorings		9290	14605	11978
traits	optimum	DNK	FIN	SWE
1. Stature	142	142.7	140.6	140.6
2. Body depth	6	5.5	5.0	5.5
3. Chest width	5.5	4.8	4.9	5.0
4. Dairy form	5.5	4.3	4.7	4.7
5. Top line	7	6.4	6.0	6.4
6. Rump width	5	4.8	4.9	4.9
7. Rump angle	5	5.0	5.3	5.2
8. Rear legs, side view	5	5.2	5.4	5.4
9. Rear legs, rear view	8	5.8	5.7	5.9
10. Hock quality	9	6.1	5.8	5.8
11. Bone quality	7.5	6.3	6.1	6.3
12. Foot angle	7	4.8	5.0	4.9
14. Fore udder attachment	9	5.2	5.5	5.6
15. Rear udder height	9	5.5	5.7	5.7
16. Rear udder width	9	4.7	5.0	5.1
17. Udder cleft/support	9	5.3	5.3	5.6
18. Udder depth	9	5.4	5.7	5.8
19. Teat length	5.5	4.3	4.5	4.6
20. Teat thickness	6	4.6	4.7	4.8
21. Teat placement (front)	8	5.2	4.9	5.0
22. Teat placement (back)	5	6.1	6.2	6.3
23. Udder balance	5	4.9	4.8	4.8