



# EXTERNAL QUALITY ASSESSMENT (EQA) RESULTATER

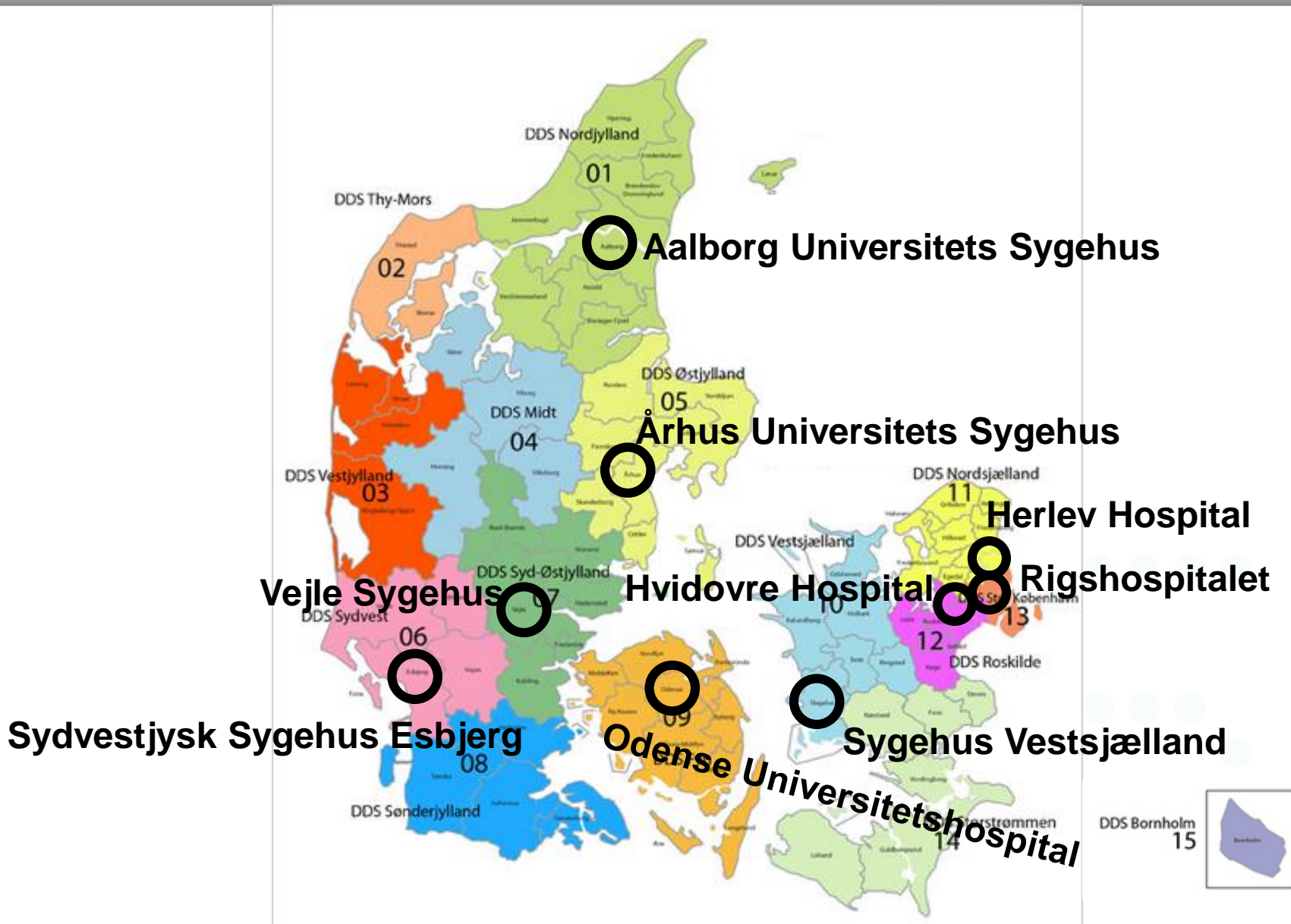
- VTEC & andre diarréfremkaldende *E. coli* (DEC)

**Flemming Scheutz**

WHO Collaborating Centre for Reference and Research on *Escherichia* and *Klebsiella*

**Fødevarebårne Infektioner  
Statens Serum Institut**

2. juni 2016



# EQA-7: SEROTYPNING, FÆNOTYPNING, GENOTYPNING OG STX/VTX RESULTATER

	O gruppe	H type	Vero Cell assay	ESBL	Haemolysin	Beta-glucuronidase	Sorbitol forgæring	eae gen	ehxA gen	vtx1 gen	vtx1 subtyoe	vtx2 gen	vtx2 subtyoe	aggR	aaIC	ipaH	elt	estA	Andre gener
Stamme 1	O80	H2	+	-	Ent.	+	+	+	+	-	-	+	vtx2a	-	-	-	-	-	
Stamme 2	O26	H11	+	-	Ent.	+	+	+	+	-	-	+	vtx2a	-	-	-	-	-	
Stamme 3 <sup>a)</sup>	O78	H2	-	-	-	+	+	-	-	-	-	-	-	+	+	-	-	-	aatA, astA
Stamme 4	O145	H34	+	-	-	+	-	+	-	-	-	+	vtx2f	-	-	-	-	-	
Stamme 5	O166	H15	+	+	-	+	+	-	-	-	-	+	vtx2d	-	-	-	+	-	
Stamme 6	O156	H4	+	-	-	+	+	-	-	-	-	+	vtx2d	-	-	-	-	-	
Stamme 7	O146	H21	+	-	Ent.	+	+	-	+	+	vtx1c	+	vtx2b	-	-	-	-	-	
Stamme 8	O157	H-	+	-	Ent.	-	-	+	+	+	vtx1a	+	vtx2c	-	-	-	-	-	
Stamme 9	O91	H14	+	-	Ent.	+	+	-	+	+	vtx1a	+	vtx2b	-	-	-	-	-	saa
Stamme 10	O103	H2	+	-	Ent.	+	+	+	+	+	vtx1a	-	-	-	-	-	-	-	
Stamme 11	O39	H12	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	+ <sup>b)</sup>	
Stamme 12 <sup>a)</sup>	O124	H-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-	-	
Stamme 13	O103	H2	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	
Stamme 14	O104	H4	-	-	-	+	+	-	-	-	-	-	-	+	+	-	-	-	aatA
Stamme 15	O27	H6	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	

+ : Positiv, - Negativ, Ent.: pos. for enterohaemolysin.

<sup>a)</sup> Laktose negativ

<sup>b)</sup> est4, positiv |



# VTEC & DEC – 15 STAMMER



O gruppe

Stamme 1	O80
Stamme 2	O26
Stamme 3 <sup>a)</sup>	O78
Stamme 4	O145
Stamme 5	O166
Stamme 6	O156
Stamme 7	O146
Stamme 8	O157
Stamme 9	O91
Stamme 10	O103
Stamme 11	O39
Stamme 12 <sup>a)</sup>	O124
Stamme 13	O103
Stamme 14	O104
Stamme 15	O27

a) Laktose negative

Forventelig (O gruppe: 5 stammer = 33%)

MEN hvad med O104??

Hej Flemming.

Kan det passe, at I har sendt en *Shigella dysenteriae* ud? (nr xxx).

Hilsen

yyyyy



# Classical & **New** EIEC O:H serotypes

O group

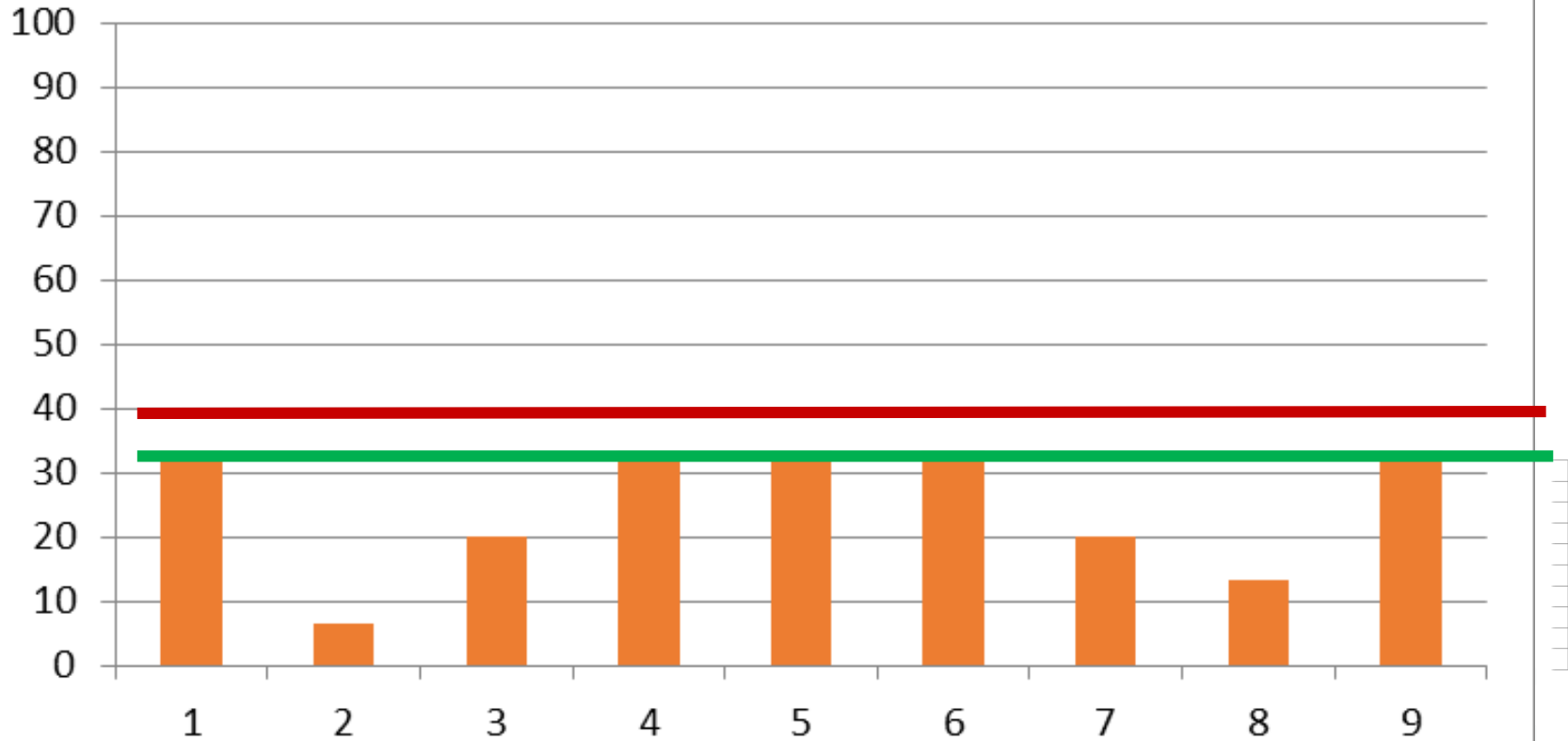
H antigen

O28ac	H-	= <i>S. boydii</i> 13
O29	H-	= <i>S. dysenteriae</i> 11
O112ac	H-	= <i>S. dysenteriae</i> 2
O112ab		= <i>S. boydii</i> 15
O115	H-	
O121	H-	= <i>S. dysenteriae</i> 7
O124	H-; H7; H30; H32	= <i>S. dysenteriae</i> 3
O135	H-	
O136	H-	
O143	H-	= <i>S. boydii</i> 8
O144	H-; H25	= <i>S. dysenteriae</i> 10
O152	H-	= <i>S. dysenteriae</i> 12
O159	H2	
O164	H-	
O167	H-; H4; H5	= <i>S. boydii</i> 3
O173	H-	

# O GRUPPERING – 9 DELTAGERE



## O type score

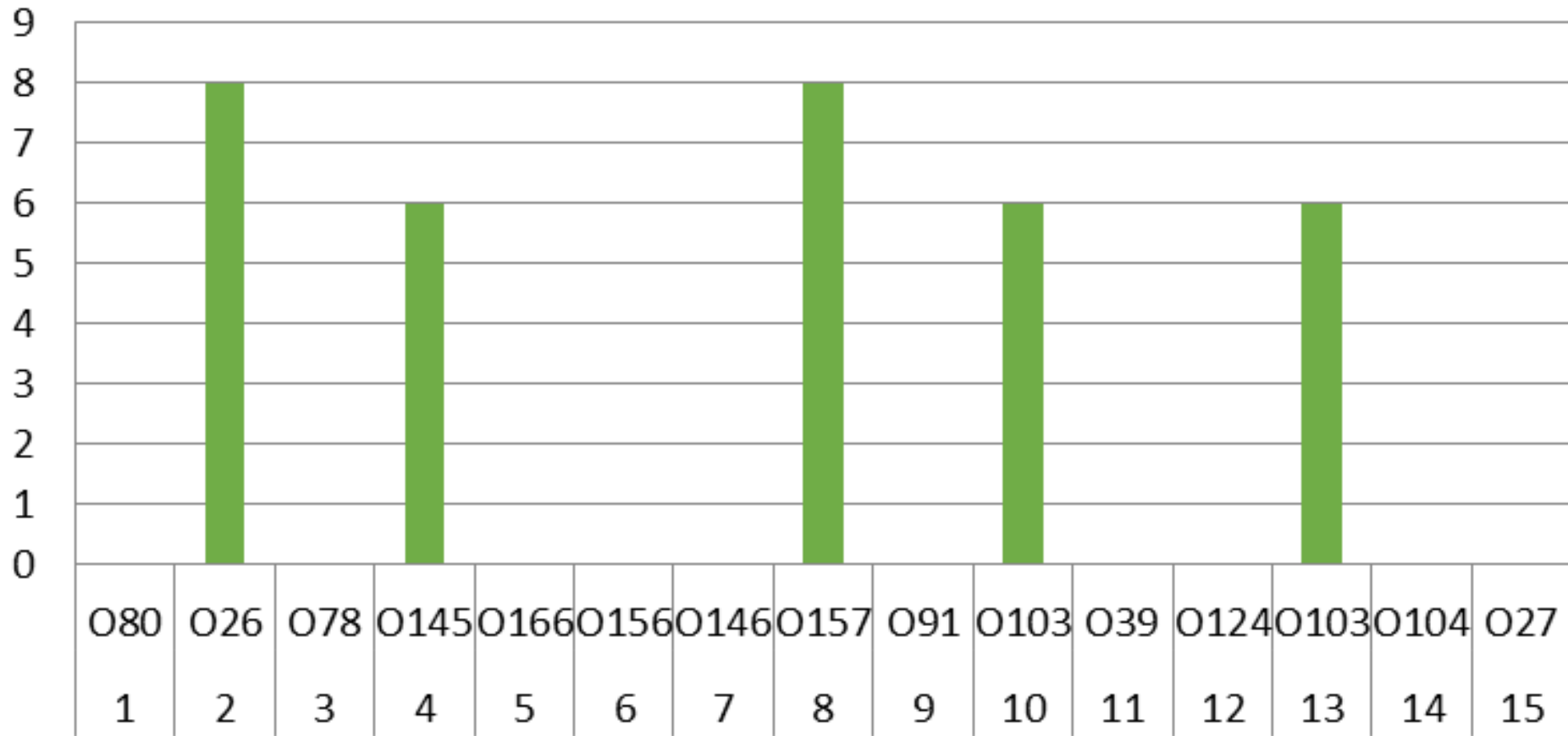


?

100  
90  
80  
70  
60  
50  
40  
30  
20  
10  
0

# O GRUPPERING – PER STAMME

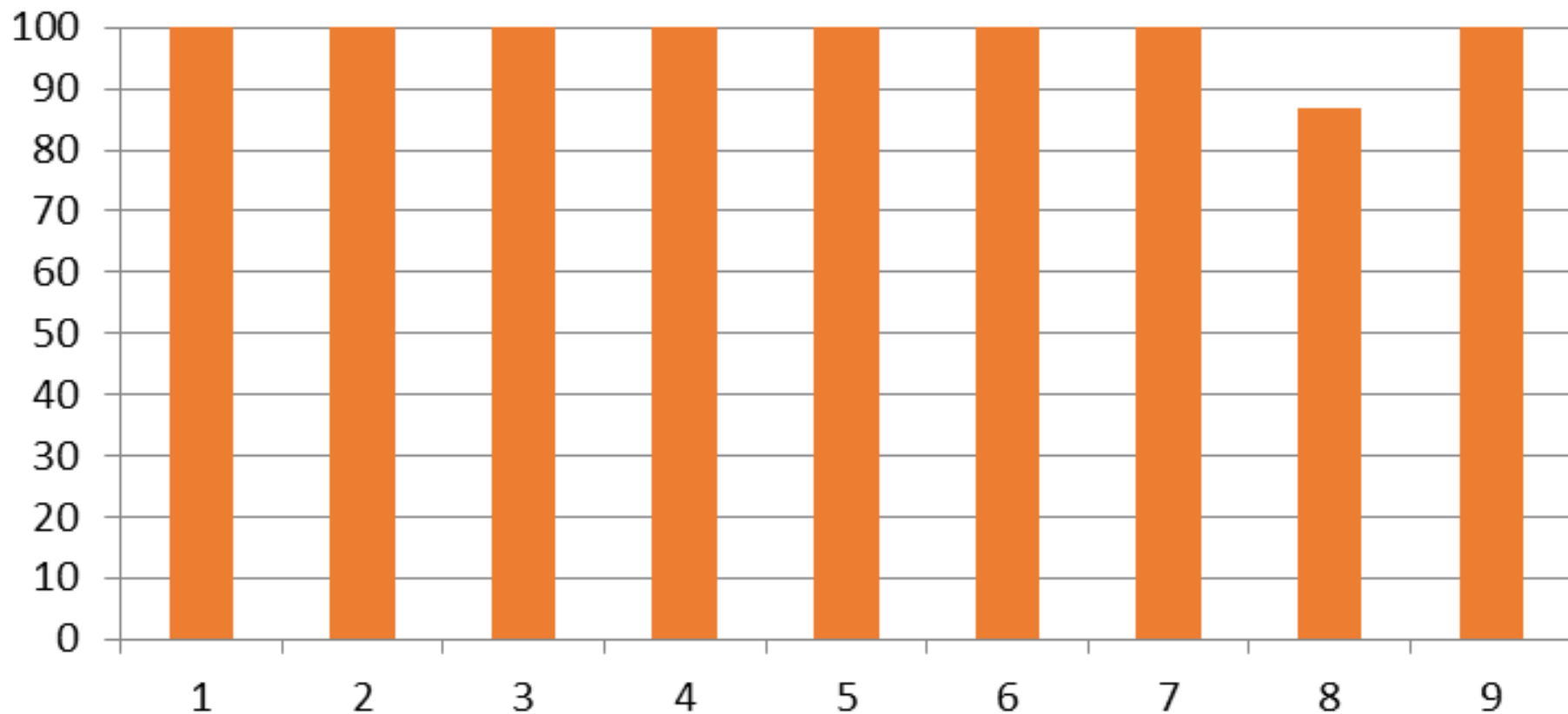
## O Gruppe





# *eae* – 9 DELTAGERE – 15 STAMMER

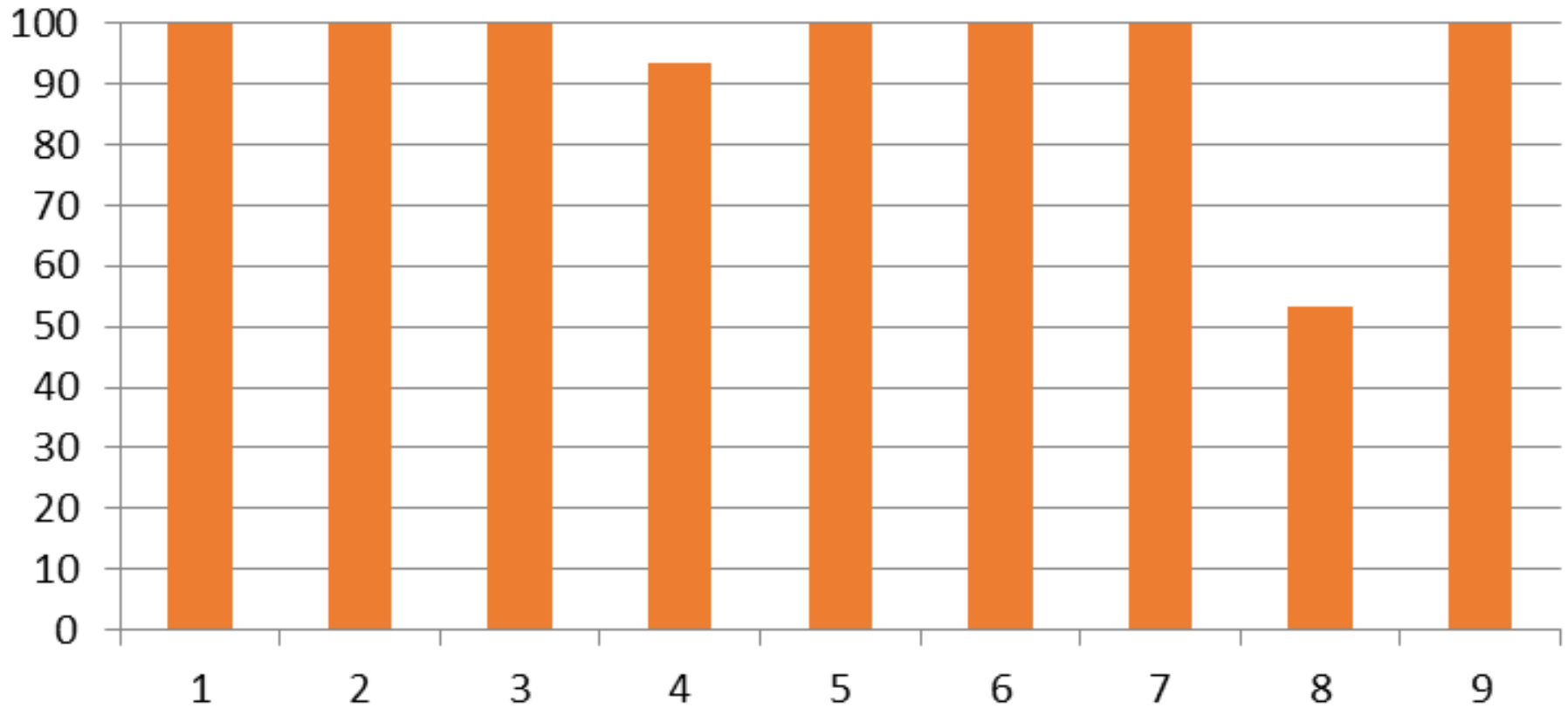
## *eae* score



# *vtx1* DETEKTION

## 9 DELTAGERE – 15 STAMMER

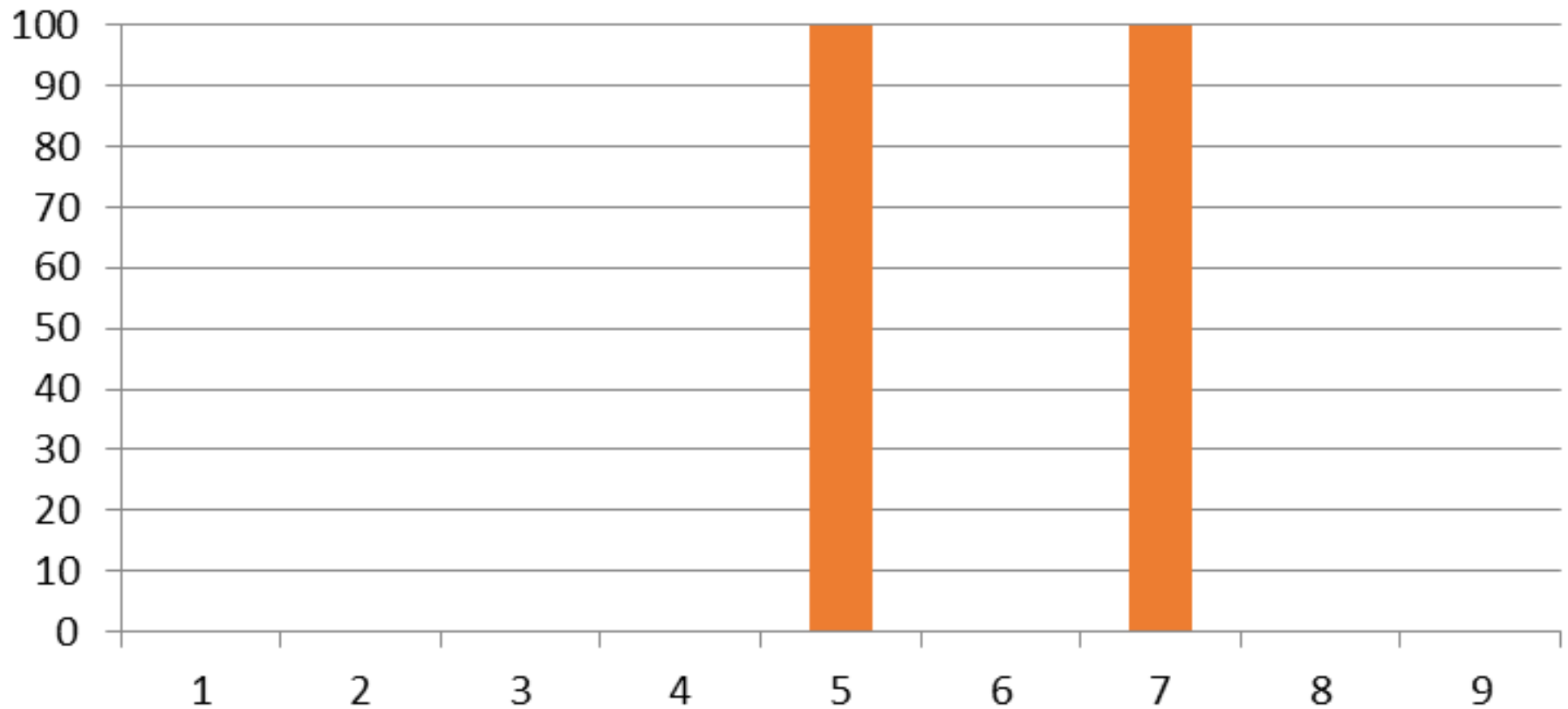
### *vtx1* score



# ***vtx1* SUBTYPNING**

## **2 DELTAGERE – 15 STAMMER**

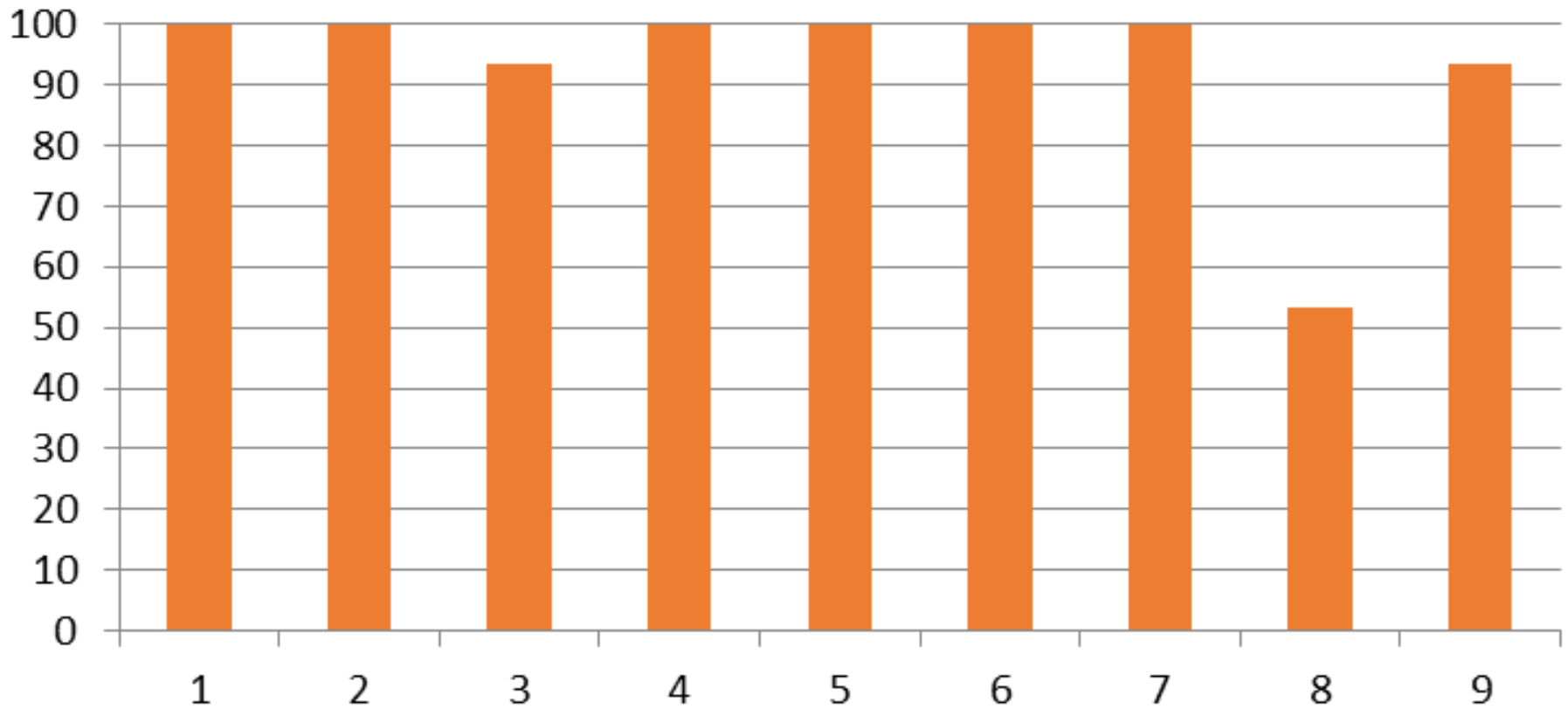
### ***vtx1* subtypning score**



# ***vtx2* DETEKTION**

## **9 DELTAGERE – 15 STAMMER**

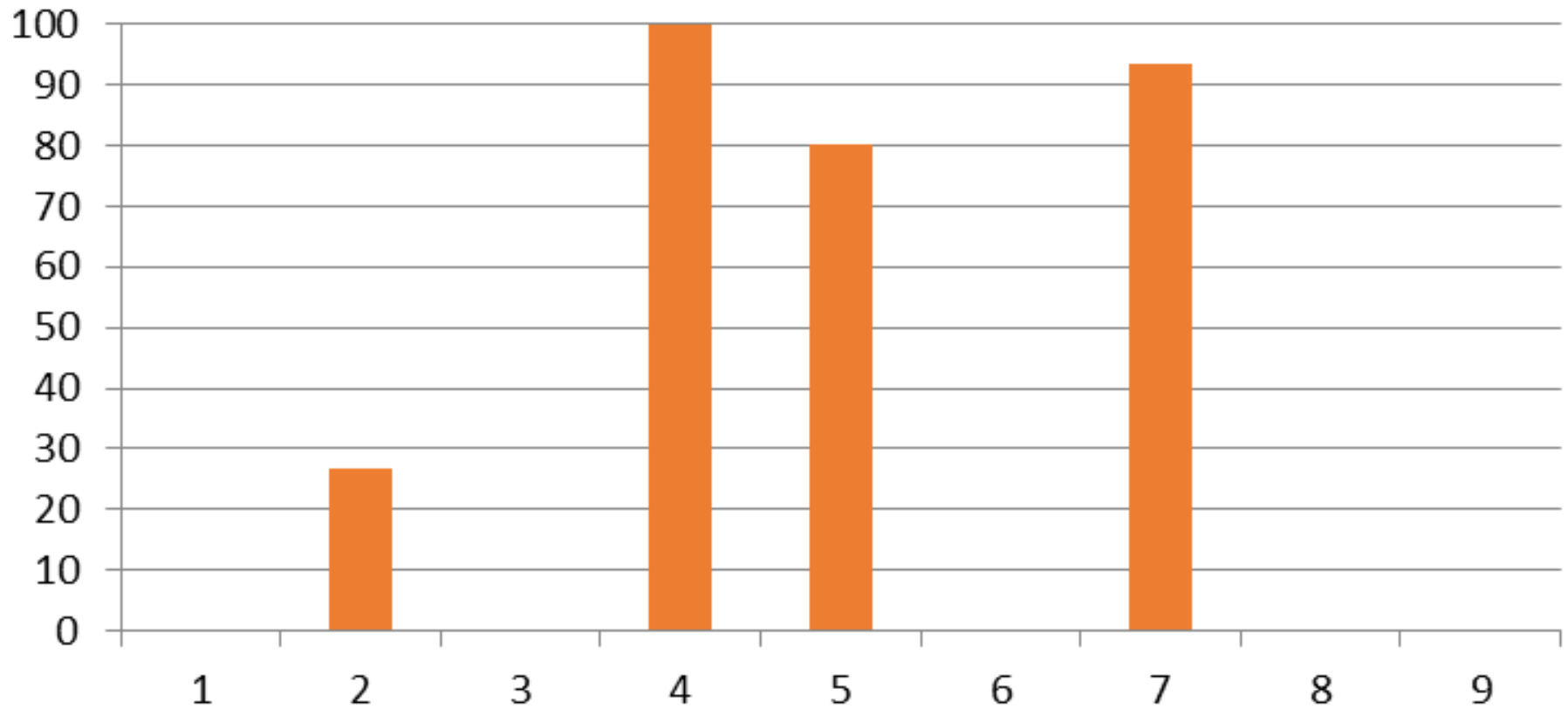
### ***vtx2* score**



# ***vtx2* SUBTYPING**

## **3½ DELTAGERE – 15 STAMMER**

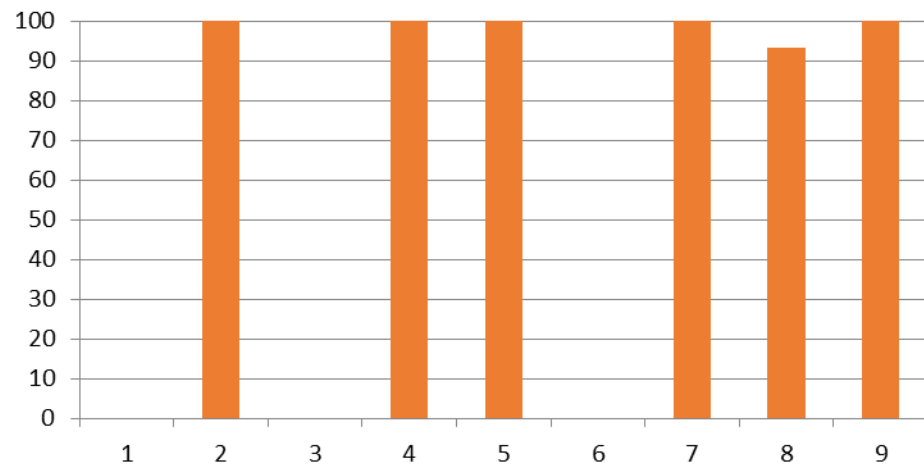
### ***vtx2* subtyping score**



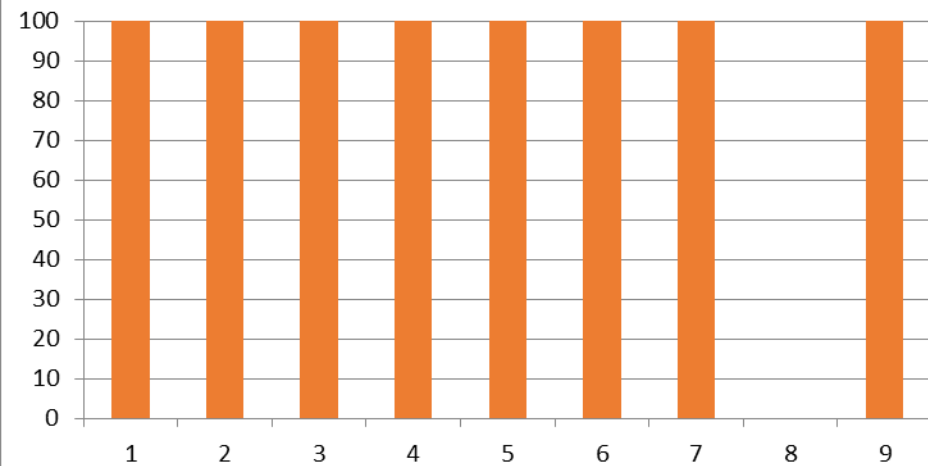
# DETEKTION AF ANDRE GENER 6 OG 8 DELTAGERE – 15 STAMMER



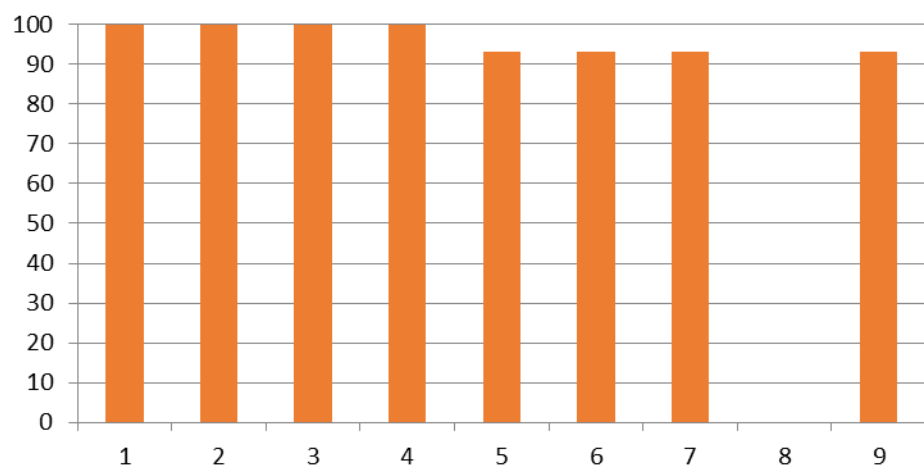
***aggR* score**



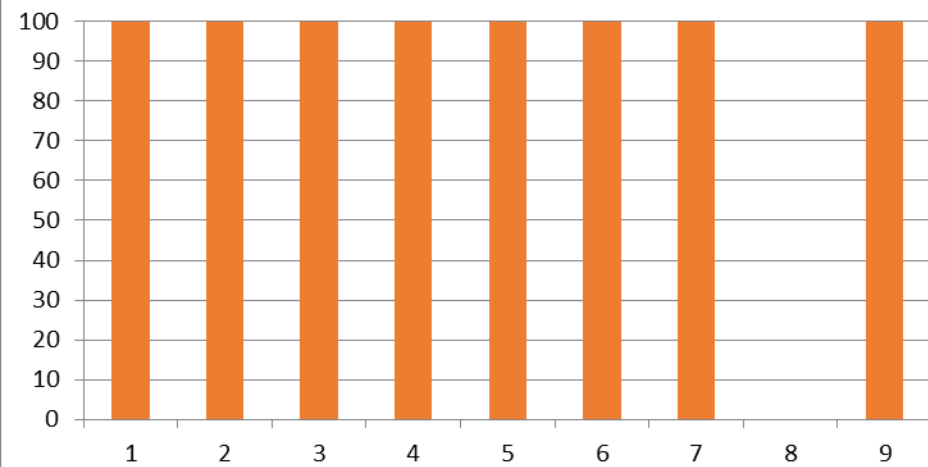
***ipaH* score**



***eltA* score**



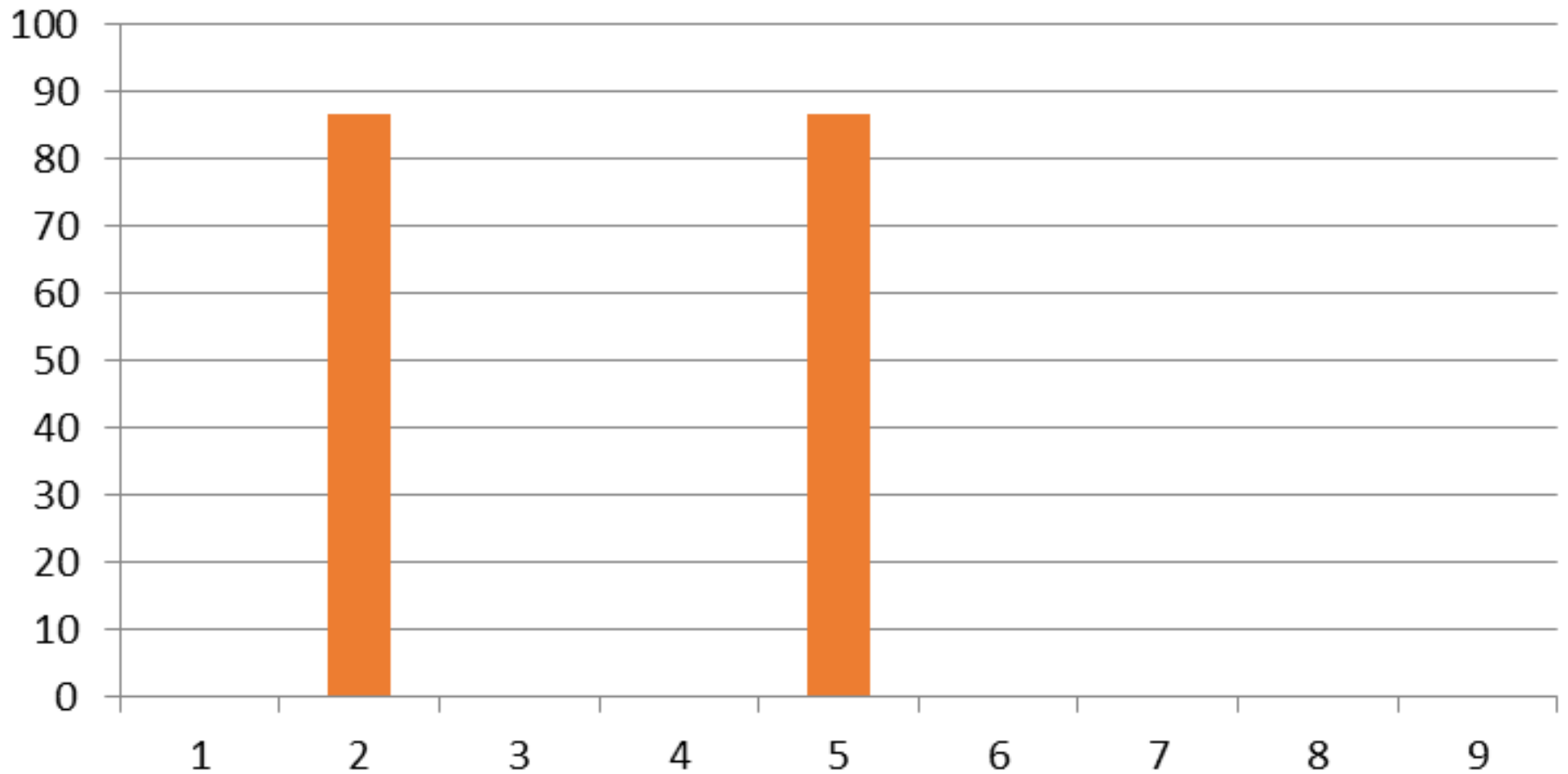
***estA* score**



# FÆNOTYPISK DETEKTION 2 DELTAGERE – 15 STAMMER



## $\beta$ -glucuronidase score

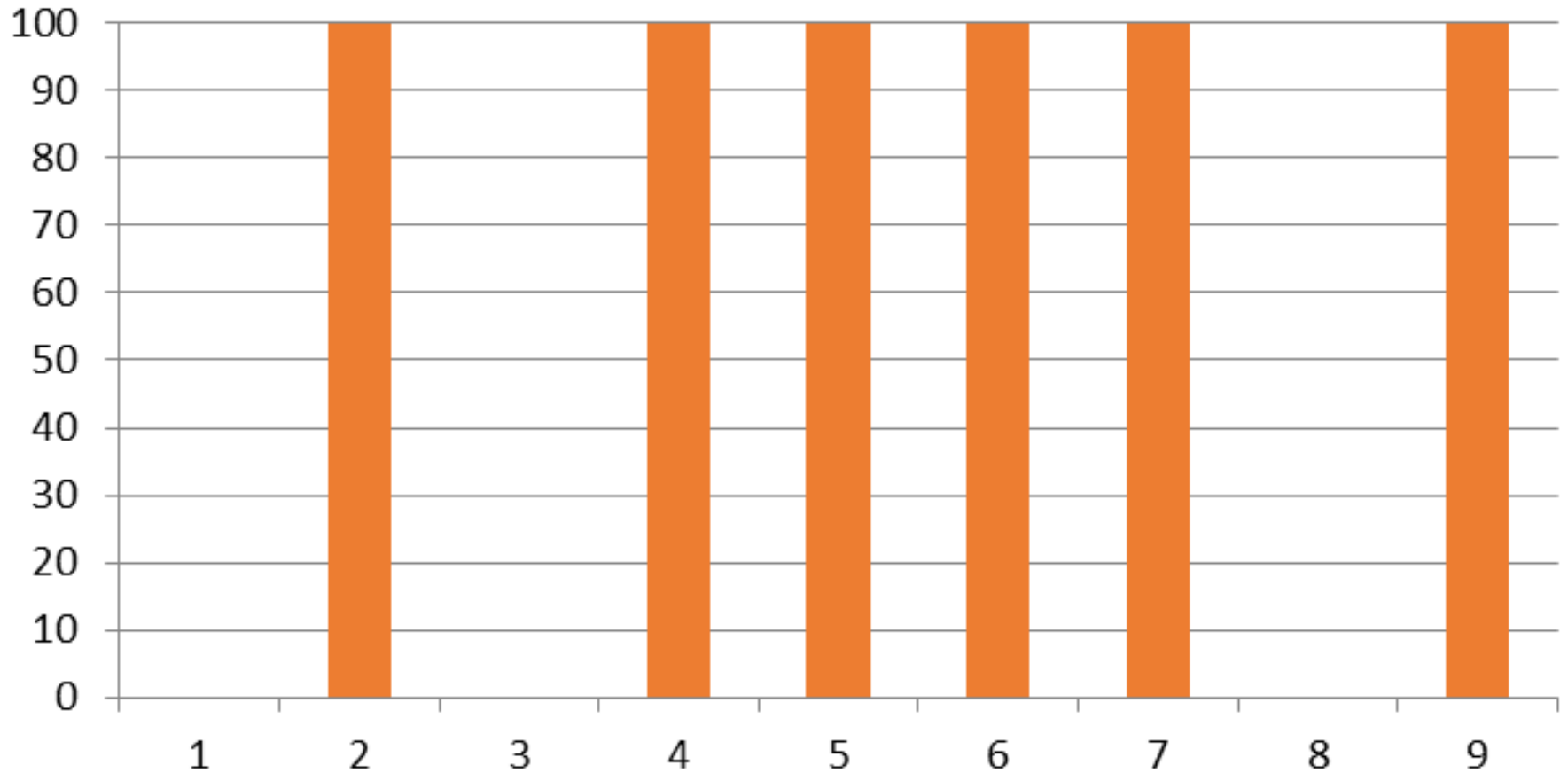


# ESBL DETEKTION

## 6 DELTAGERE – 15 STAMMER

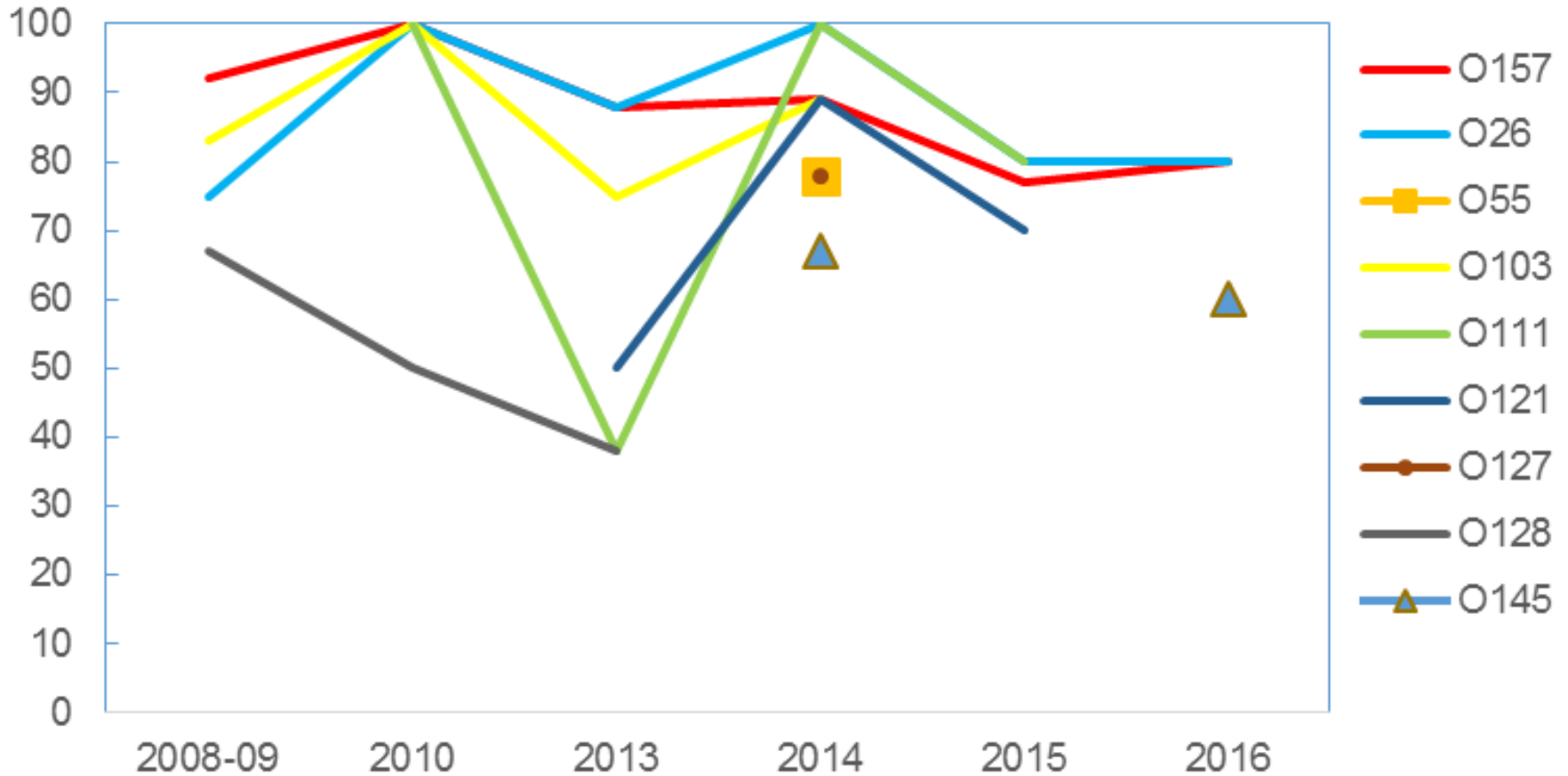


### ESBL score





## Fænotypning O grupper



Deltagere 8

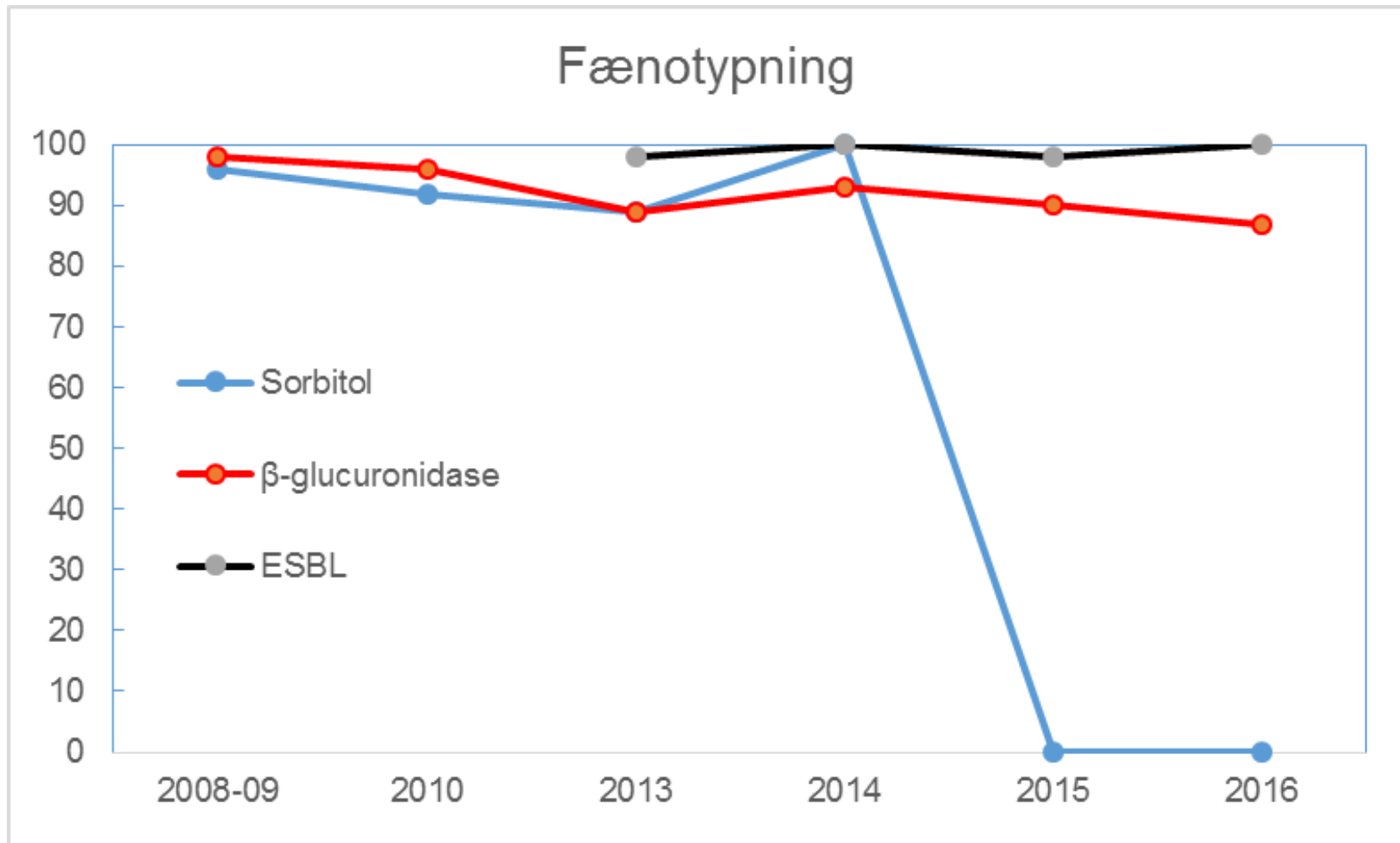
12

8

9

10

9



Deltagere

sorbitol

8

12

3

3

0

0

$\beta$ -glucuronidase

8

12

5

4

2

2

ESBL

0

0

5

4

6

# DELTAGELSE & SCORES I DE FEM EQA'er



## Fænotypning

	2008-9	2010	2013	2014	2015
	8	12	8	9	10
<b>O gruppering</b>					
<b>O157</b>	92%	100%	88%	89%	77%
<b>O26</b>	75%	100%/86%	88%	100%	80%
<b>O55</b>	-	-	-	78%	-
<b>O103</b>	83%	100%	75%	89%	-
<b>O111</b>	-	100%	38%	100%	80%
<b>O121</b>	-	-	50%	89%	70%
<b>O127</b>	-	-	-	78%	-
<b>O128</b>	67%	50%	38%	-	-
<b>O145</b>	-	-	-	67%	-
<b>β-glucuronidase</b>	98%	96%	89% n=5	93% n=4	90% n=2
<b>Sorbitol</b>	96%	92%	89% n=3	100% n=3	-
<b>ESBL</b>	ND	ND	98%	100% n=5	98% n=4



## Genotypning

	2008-9	2010	2013	2014	2015	2016	
<b>Deltagere</b>	<b>8</b>	<b>12</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>9</b>	
<b><i>eae</i></b>	<b>100%</b>	<b>100%</b>	<b>98%</b>	<b>100%</b>	<b>97%</b>	<b>99%</b>	
<b><i>vtx1</i></b>	<b>96%</b>	<b>98%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>94%</b>	
<b><i>vtx2</i></b>	<b>95%</b>	<b>92%</b>	<b>96%</b>	<b>95%</b>	<b>95%</b>	<b>93%</b>	
<b><i>aggR</i></b>	<b>ND</b>	<b>ND</b>	<b>71%</b>	<b>100%</b>	<b>100%</b>	<b>99%</b>	<b>(6)</b>
<b><i>eltA</i></b>	<b>ND</b>	<b>67%</b>	<b>100%</b>	<b>99%</b>	<b>96%</b>	<b>97%</b>	<b>(8)</b>
<b><i>estA</i></b>			<b>57%</b>	<b>99%</b>	<b>86%</b>	<b>100%</b>	<b>(8)</b>
<b><i>ipaH</i></b>	<b>ND</b>	<b>67%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>(8)</b>

## *vtx* subtypning

	<b>2016</b>	
<b>Deltagere</b>	<b>2</b>	
<b><i>vtx1</i> subtypning</b>	<b>100%</b>	
	<b>3</b>	<b>½ Kun <i>vtx2a</i> og <i>vtx2d</i></b>
<b><i>vtx2</i> subtypning</b>	<b>91%</b>	<b>27%</b>



# EQA-7: SEROTYPNING, FÆNOTYPNING, GENOTYPNING OG STX/VTX RESULTATER

	O gruppe	H type	Vero Cell assay	ESBL	Haemolysin	Beta-glucuronidase	Sorbitol forgæring	eae gen	ehxA gen	vtx1 gen	vtx1 subtyoe	vtx2 gen	vtx2 subtyoe	aggR	aaIC	ipaH	elt	estA	Andre gener
Stamme 1	O80	H2	+	-	Ent.	+	+	+	+	-	-	+	vtx2a	-	-	-	-	-	
Stamme 2	O26	H11	+	-	Ent.	+	+	+	+	-	-	+	vtx2a	-	-	-	-	-	
Stamme 3 <sup>a)</sup>	O78	H2	-	-	-	+	+	-	-	-	-	-	-	+	+	-	-	-	aatA, astA
Stamme 4	O145	H34	+	-	-	+	-	+	-	-	-	+	vtx2f	-	-	-	-	-	
Stamme 5	O166	H15	+	+	-	+	+	-	-	-	-	+	vtx2d	-	-	-	+	-	
Stamme 6	O156	H4	+	-	-	+	+	-	-	-	-	+	vtx2d	-	-	-	-	-	
Stamme 7	O146	H21	+	-	Ent.	+	+	-	+	+	vtx1c	+	vtx2b	-	-	-	-	-	
Stamme 8	O157	H-	+	-	Ent.	-	-	+	+	+	vtx1a	+	vtx2c	-	-	-	-	-	
Stamme 9	O91	H14	+	-	Ent.	+	+	-	+	+	vtx1a	+	vtx2b	-	-	-	-	-	saa
Stamme 10	O103	H2	+	-	Ent.	+	+	+	+	+	vtx1a	-	-	-	-	-	-	-	
Stamme 11	O39	H12	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	+ <sup>b)</sup>	
Stamme 12 <sup>a)</sup>	O124	H-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-	-	
Stamme 13	O103	H2	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	
Stamme 14	O104	H4	-	-	-	+	+	-	-	-	-	-	-	+	+	-	-	-	aatA
Stamme 15	O27	H6	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	

+ : Positiv, - Negativ, Ent.: pos. for enterohaemolysin.

<sup>a)</sup> Laktose negativ

<sup>b)</sup> est4, positiv |



# TAK FOR JERES OPMÆRKSOMHED



Eva Møller Nielsen   Mie Birgitte Frid Jensen   Flemming Scheutz