

Development of the occurrence of dark spots in farmed salmon fillets

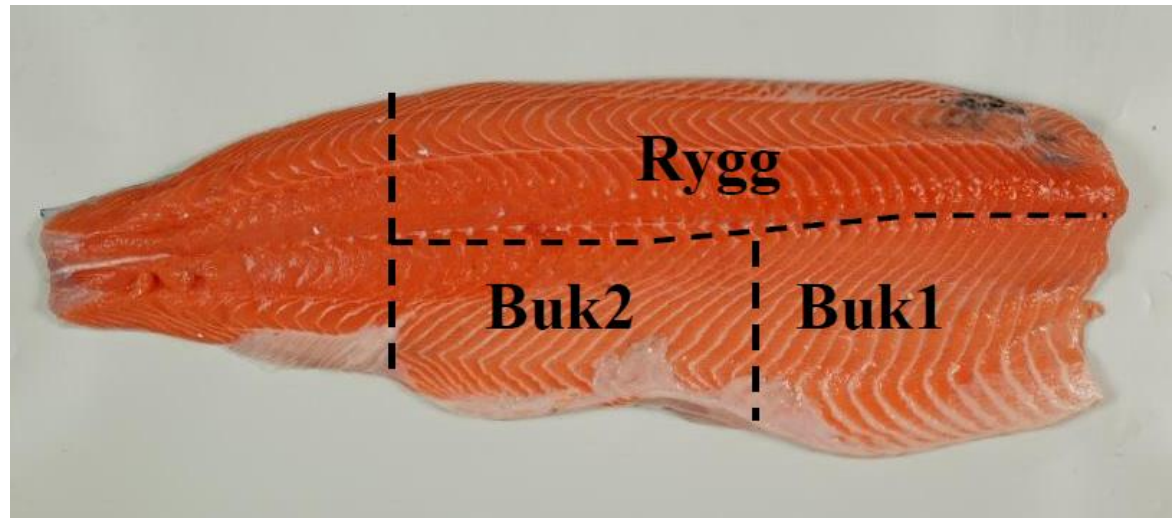
Thomas Larsson, Nofima

Melanin workshop

Clarion Hotel, Oslo Airport Gardermoen, Oct. 16th 2014

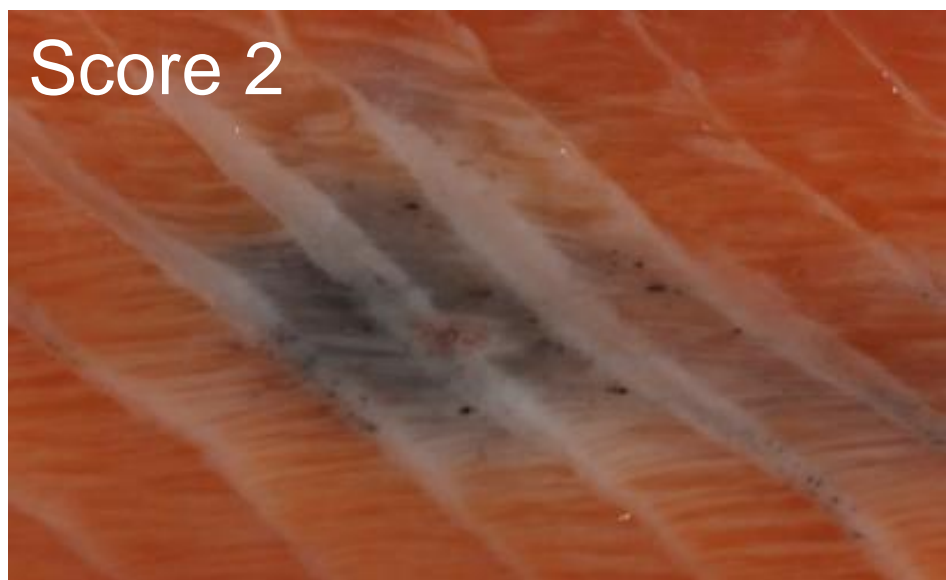
National standard for registering occurrence of dark spots, 2010

Fillet areas



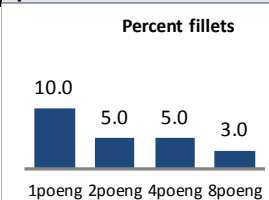
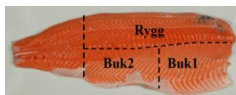
Scale

SPOTS (points)			
No discolouration	0	Spot 3-6 cm	4
Diffuse spot, all sizes	1	Area larger than 6 cm	8
Spot smaller than 3 cm	2		



Registration form

SPOTS (points)			
No discolouration	0	Spot 3-6 cm	4
Diffuse spot, all sizes	1	Area larger than 6 cm	8
Spot smaller than 3 cm	2	Average	0.67



Fillets with spots (%)

22.0

FLEKKER I FILET (poeng)
flere flekker i samme område summeres

Fillet	Total points	Buk 1	Buk 2	Rygg
1	1	1	0	0
2	0	0	0	0
3	2	0	2	0
4	5	4	1	0
5	0	0	0	0
6	8	0	0	8
7	0	0	0	0
8	2	0	0	2
9	3	1	0	2
10	0	0	0	0
11	4	4	0	0
12	8	0	8	0
13	1	1	0	0
14	0	0	0	0
15	0	0	0	0
16	4	4	0	0
17	0	0	0	0
18	0	0	0	0
19	1	1	0	0
20	0	0	0	0

Frivillige registreringer

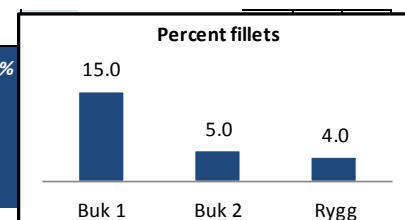
Utført: JA
NEI

Blek, 0/1 (se fanen "Forklaring")

Gaping, 0/1 (se fanen "Forklaring")

Fillets (%)	SPOT (poeng)				Totalt %
	1	2	4	8	
Buk1	7.0	2.0	4.0	1.0	15.0
Buk2	3.0	1.0	0.0	1.0	5.0
Rygg	0.0	2.0	1.0	1.0	4.0
Total %	10.0	5.0	5.0	3.0	

skjema sendes til thomas.larsson@nofima.no



Comments

F. eks. om det er fisk med flere flekker innenfor samme område eller avvik for partiet (bløt filet, brus, deformiteter e.l.)

INFORMATION FOR EACH SCORED PARTY OF FISH

Prosessanlegg navn/nr:			
Navn på bedømmer:			
Lokalitetsnr (navn):		Kvalitetsklasse:	
Dato ved slakt:	Sjøtemp:	Superior	<input type="checkbox"/>
Dato ved måling:	Merd nr:	Ordinær	<input type="checkbox"/>
Vektklasse:	Lot nr:	Produksjon	<input type="checkbox"/>

ADDITIONAL INFORMATION

Smolt

Leverandør:

Utsett måned: år: Stamme:

Maskinvaksiner: JA NEI Vaksinetype:

Vaksineringstemp:

Slaktefisk

Sultetid, dager: Fôrtype før slakt:

NEI JA NEI DAGER

Location of spots

More common in Southern part of Norway (27 % of all spots in whole Norway)



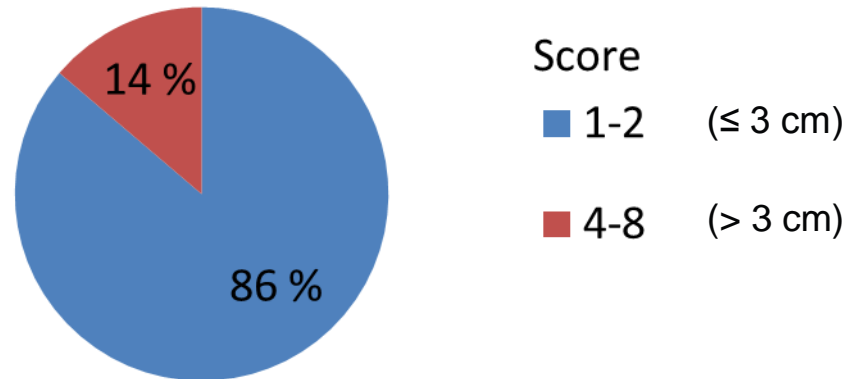
Most common (71% of all spots)



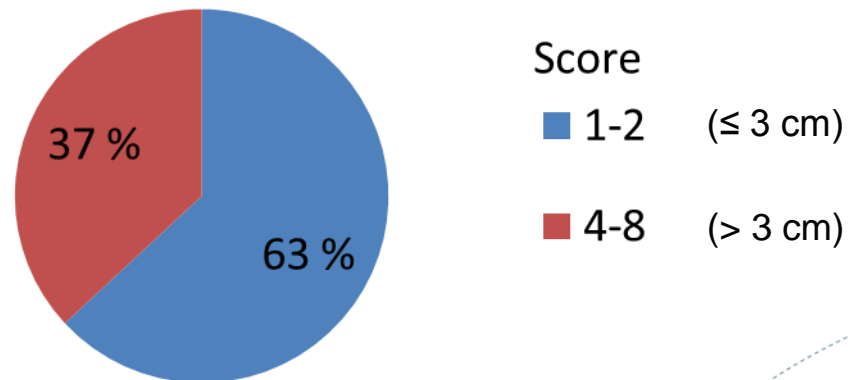
Causes largest problems (1.5 % of all spots)

Size of spots

Abdomen, % fish per score



Dorsal part, % fish per score



Dark spots – development

(n = 145 000; 22 – 53 000 fish per year)

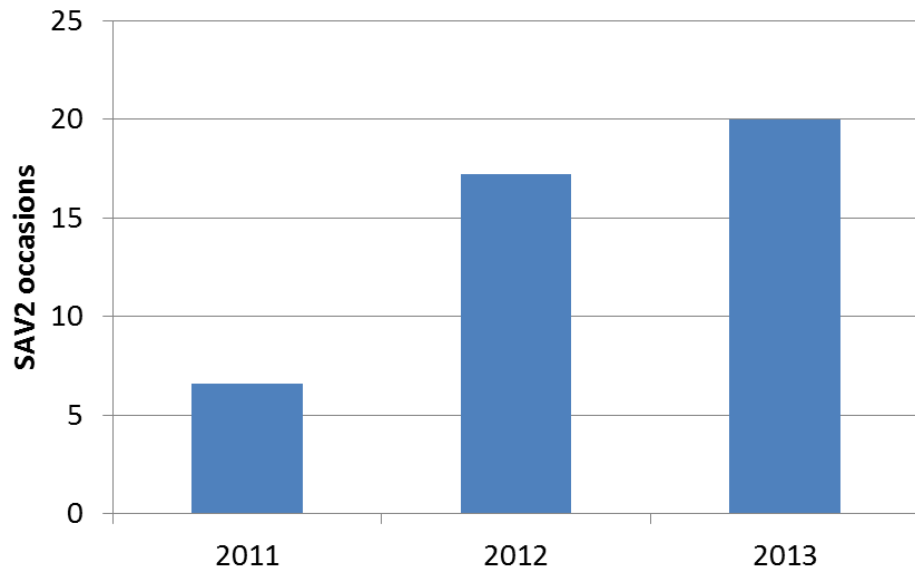
	Frequency Norway	Frequency North Norway	Frequency Mid Norway	Dorsal freq. Norway
2011	13 %	11 %	16 %	0.8 %
2012	16 %	15 %	18 %	0.9 %
2013	18 %	13 %	20 %	1.6 %
2014	19 %	13 %	24 %	1.3 %

24 % of dorsal spots in northern Norway are big (> 6 cm)
13 % in Mid-Norway

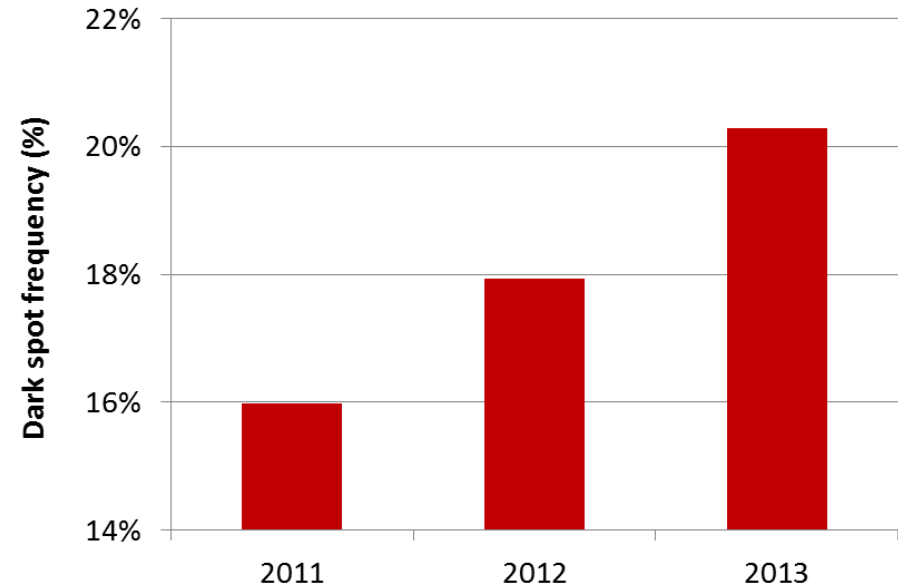
Dark spots – development

Increase of dark spots in Mid-Norway coincide with increase of SAV2 findings

SAV2 occasions in Mid-Norway



Dark spot frequency (%) in Mid-Norway



By the way...

- Fillets with dark spots have normal quality
 - Colour
 - Texture
 - Taste
 - Flavour
 - Composition

Summary

- Frequency of dark spots in fillets of farmed salmon has increased from 13 % in 2011 19 % so far in 2014
 - Higher frequency of spots in dorsal muscle largely explained by increase of large spots in northern Norway
 - Yearly increase of dark spot frequency in Mid-Norway coincides with an increase in the number of SAV2 occasions
- Dark spots most frequently occur in the anterior part of the abdomen (71% of all spots on average)
- Dorsal spots are largest; 37 % of all dorsal spots have score 4 or 8
 - In the abdomen this percentage is 14 %
- There appears to be a «baseline» of dark spot frequency around 13 %

Thank you

