

Fettfinneklipping, frysemerking og VIE

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Goal of the project

- Evaluate the existing marking/tagging methods in terms of
 - Easy implementation
 - Easy detectability
 - High retainability
 - Effects on growth and survival
 - Effective (automatic) marking methods.
 - Cost
 - Market reactions

Selected marking methods for our study

- Adipose fin clipping
- Visible Implant Elastomer (VIE)
- Freeze Branding

Selected Marking Methods

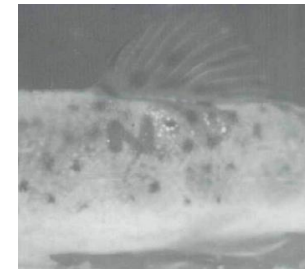
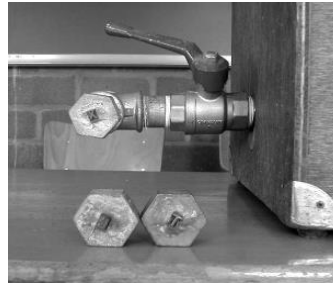
Adipose Fin Clipping



Visible Implant Elastomer (VIE)



Freeze Branding



General Experimental Description

- All fish will be pit tagged (except for pit tag control).
- Two replicate tanks.
- Experiment started in week 5/2012.
- First 4 months in indoor tanks (freshwater).
- Next 6 months in sea cages (after smoltification).
- Three length weight measurement (0, 4 and 10 months).
- Mark readability and retainability evaluation at 4 and 10 months.

Treatment description	CODE
Adipose COMPLETE	AC
Adipose INCOMPLETE (3/4)	AIC
Freeze brand DORSAL on TOP	FB DoT
Freeze brand BELOW DORSAL FIN	FB BDF
VIE BEHIND EYE LID	VIE BEL
VIE DORSAL FIN	VIE DF
AC+VIEEL	AC+VIEEL
AC+FBDT	AC+FBDT
PitTag only	PT
No PitTag	NPT

Start Date: 01 Feb 2012

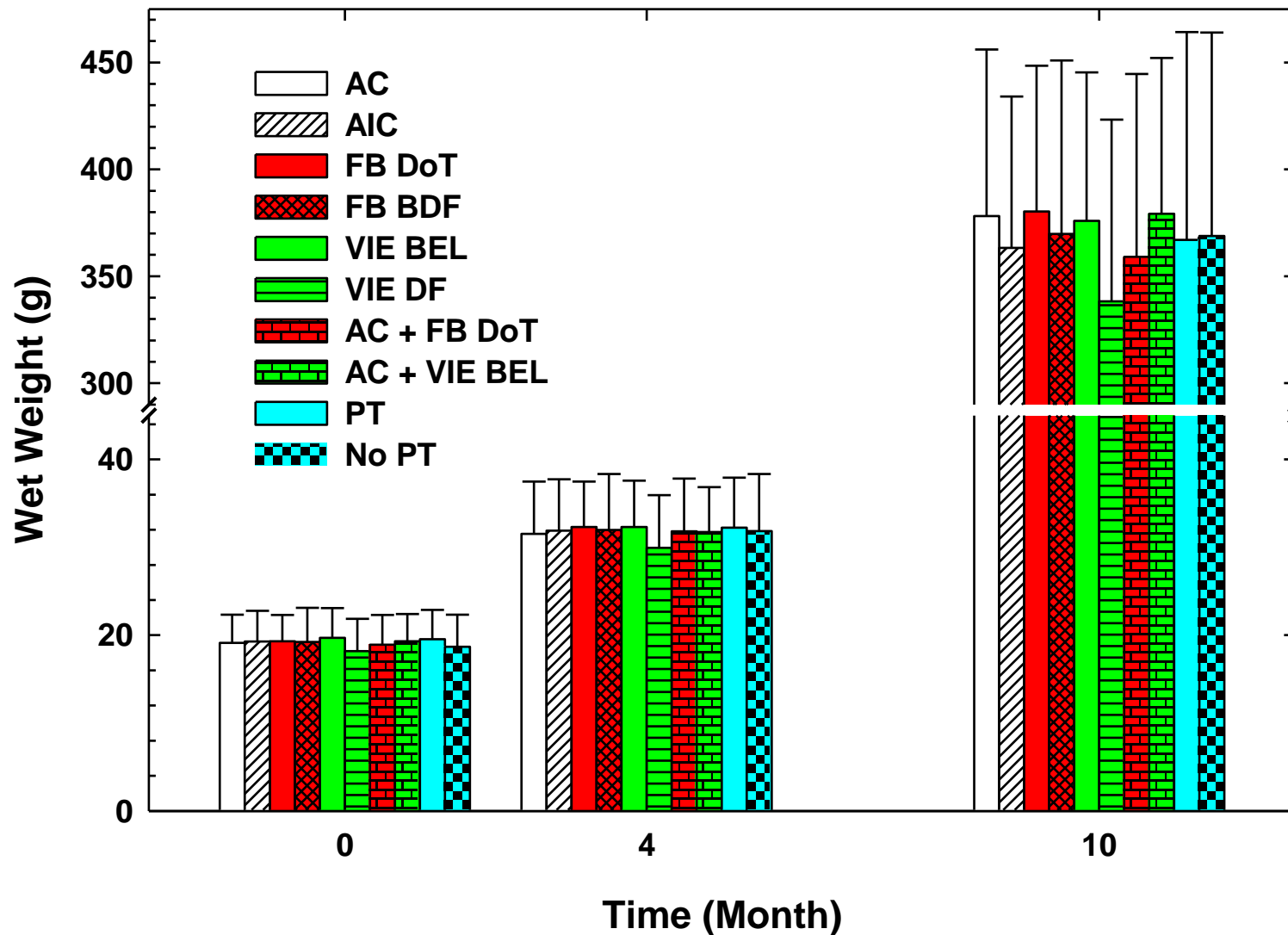
Initial Fish size: 20g

First sampling: 22 May 2012

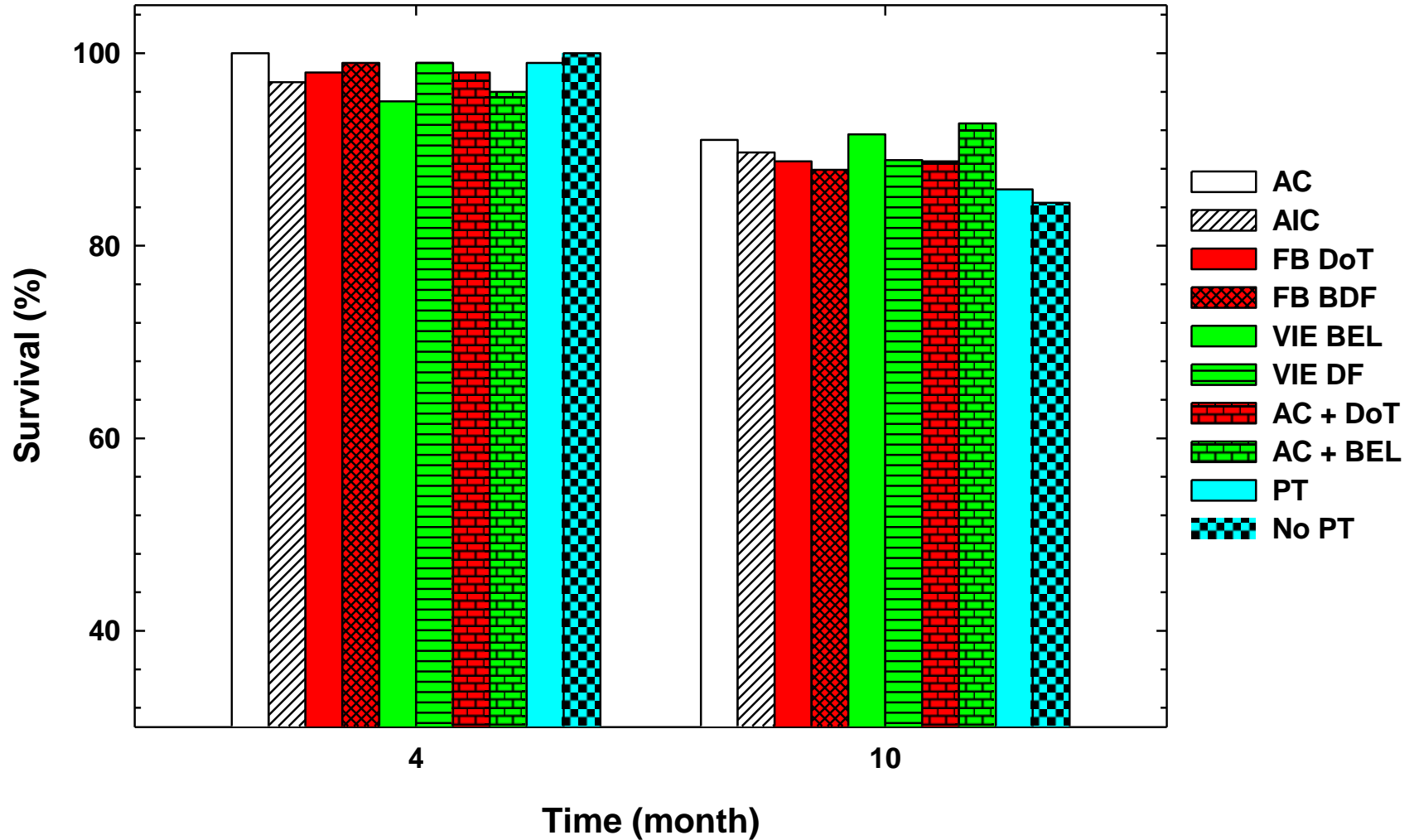
Transfer to sea cage: June 2012

Second sampling date: 12 November 2012

Results - Growth



Results - Survival



Freeze Branding



Good readability at 4 months post tagging

Freeze Branding



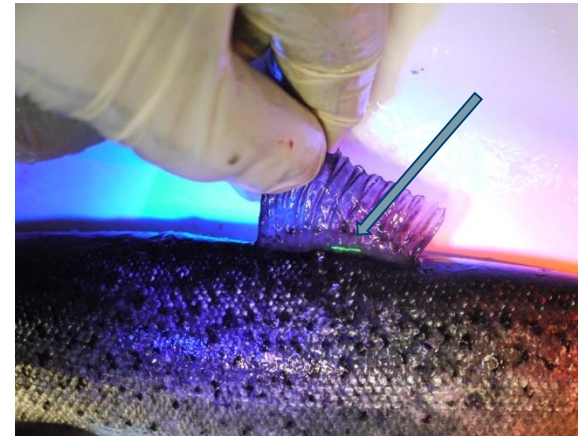
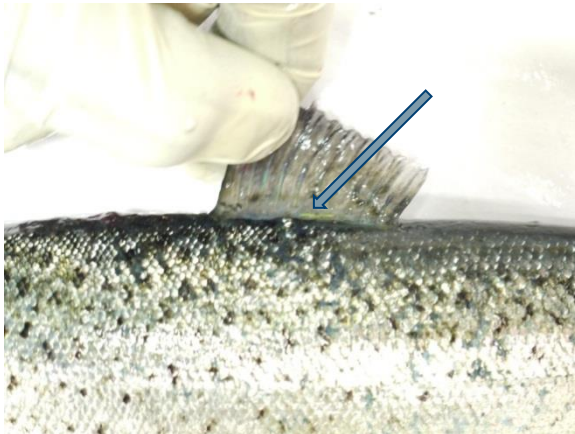
BUT
not at 10 months

VIE Marking



Readable without
UV light at 4 months

Require UV-light at 10 months



Results - Readability

	4 months	10 months
Adipose fin removal complete	100	100
incomplete	100	99
Freeze branding	~ 100	~ 0
VIE-tagging without UV-light	32 - 71	0
with UV-light	74 - 99	29 - 61

Manual adipise fin clipping: ca 1200 – 1300 fish per hour



Automatic tagging?



Mascon vaccination machine

Estimerte kostnader

	Lønn	Kapital-kostnad	Forbruks- materiell	Totalt kr
Finneklipping, manuell	480 - 600	~ 0	~ 0	480 - 600
Frysemerking, manuell	670 - 830	~ 0	~ 0	670 - 830
VIE-merking, manuell	Min 830	~ 0	590	Min 1420
Finneklipping, halvautomatisk	60 – 200	20 - 30	~ 0	80 - 230
Finneklipping, helautomatisk	30 - 33	10	~ 0	40 - 43
Frysemerking, halvautomatisk	480 - 600	20 - 30	~ 0	500 - 630
Frysemerking, helautomatisk	480 - 600	20 - 30	~ 0	500 - 630
VIE-merking, halvautomatisk	480 - 600	20 - 30	590	1090 - 1220
VIE-merking, helautomatisk	480 - 600	20 - 30	590	1090 - 1220

Markedsreaksjoner på finneklipping

(Takk til Norges sjømatråd)

Vurderinger fra utsendinger fra Norges sjømatråd i Asia, Italia, Kina, Portugal, Sverige, Spania, Tyskland, Polen, Frankrike, Russland:

- Liten effekt i 3 land
- Positiv effekt i 2 land
 - Styrker miljø og bærekraftimage
 - Positivt for sporing
- Mulig negativ effekt 5 land (dyrevelferd)

Samlet vurdering:

- Det forventes ikke store negative reaksjoner
- Viktig med god kommunikasjon

Implementation/automation, Costs, Market Reactions

	Ranking
Implementation/automation	Fin-clipping > Freeze Branding & VIE-tagging
Cost	Fin-clipping < Freeze Branding < VIE-tagging
Market reactions	Fin-clipping: Acceptable Freeze Branding & VIE-tagging: Not evaluated

Conclusion

Complete adipose fin removal is the only method we can recommend for external marking of farmed salmon (provided there is no welfare issues about fin clipping – which is studied by NVH).



Thank you for your attention!