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Sea Lice Update

Brian Peterson

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United States Department of Agriculture

Sea Lice Update



Brian Peterson

National Cold Water Marine
Aquaculture Center



- Lice cost industry
~\$1 billion in 2016
- Devastating disease
- Limited treatments
 - H₂O₂
 - Slice® (resistance)
- Industry shift to
non-drug treatments



- Select for sea lice resistance
- Examine functional feed additives
- Start lump fish program



Multiple small infections

1 fish/family/infection

100 copepodids/fish

4 hr bath infection

120 families in 2015

98 families in 2016

95 families in 2017



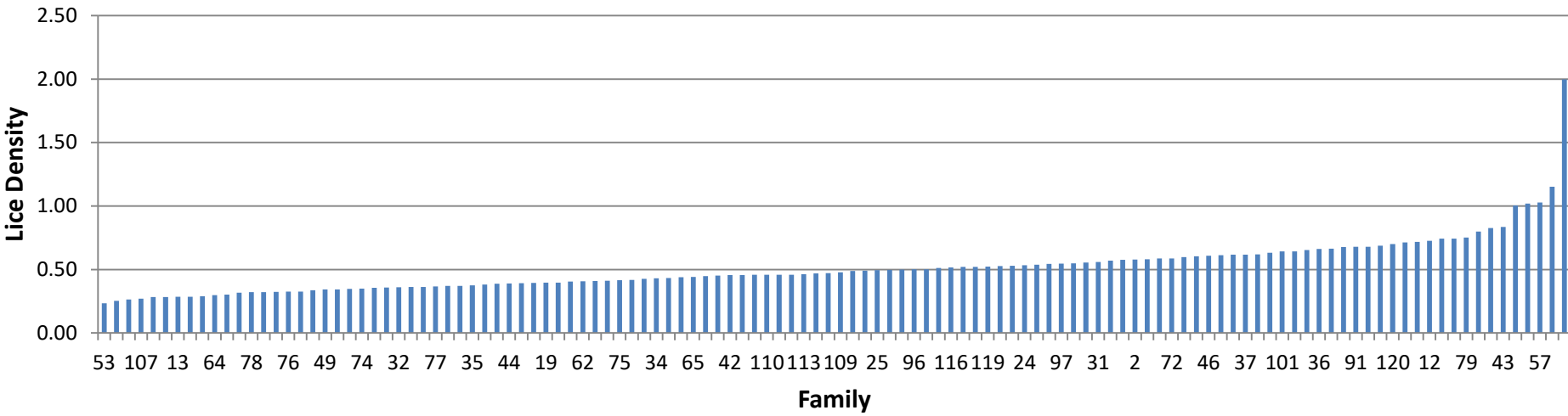
- Count 10-18 dpi at 2nd chalimus stage
- Neutral Red Stain
- Standardize counts
 - Surface area
 - Lice Density



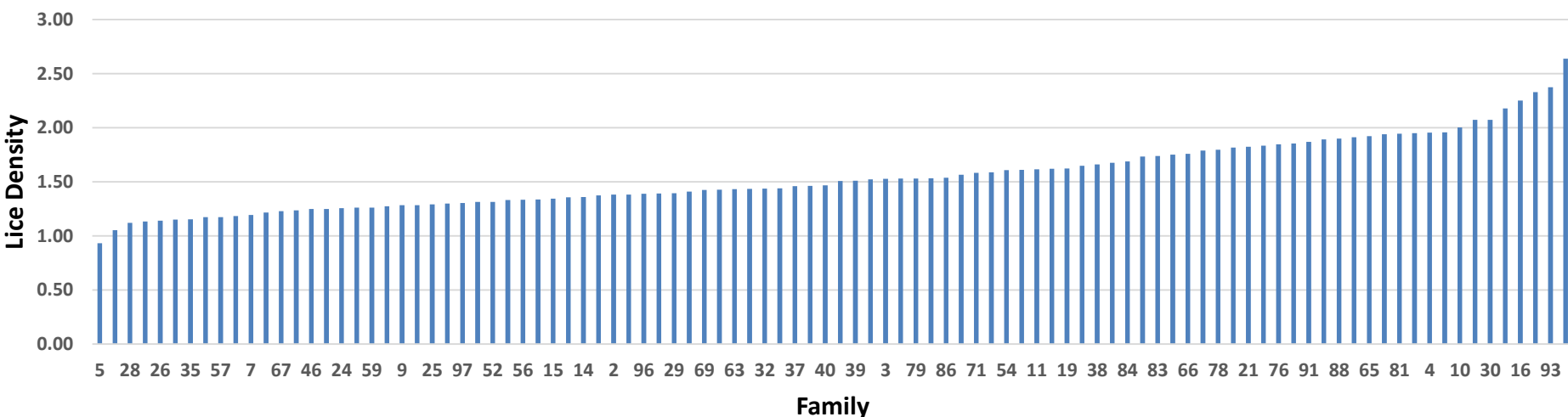


2015-2016 Results

2015 Average Lice Density



2016 Average Lice Density



2015-2016 Heritability

Heritability	2015	2016	Combined
w/o Full Sib Tank	0.43 (0.101)	0.28 (0.074)	0.31 (0.057)
w/ Full Sib Tank	0.19 (0.108)	0.17 (0.098)	0.20 (0.062)





- Sequence genome of North American Atlantic salmon
- Develop genomic EBV
- Identify and screen for genetic markers
- Select for a sea lice resistant line

Functional Feed Studies



Lumpfish Program





Selective Breeding Program

Lumpfish nutrition

Lumpfish reproduction

Select for lumpfish that eat
sea lice





Questions?