

AQUADVANTAGE SALMON: THE FIRST GENETICALLY MODIFIED ANIMAL DESTINED FOR HUMAN CONSUMPTION.

UAB

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Final Degree Project



OBJECTIVES

Provide information about its **design**, **development**, **control** measures, **welfare** and **differences** with conventional salmon.

BIOTECHNOLOGICAL PROCESS

- All fish construct
- GH expression all year
- Faster growth and better food use efficiency

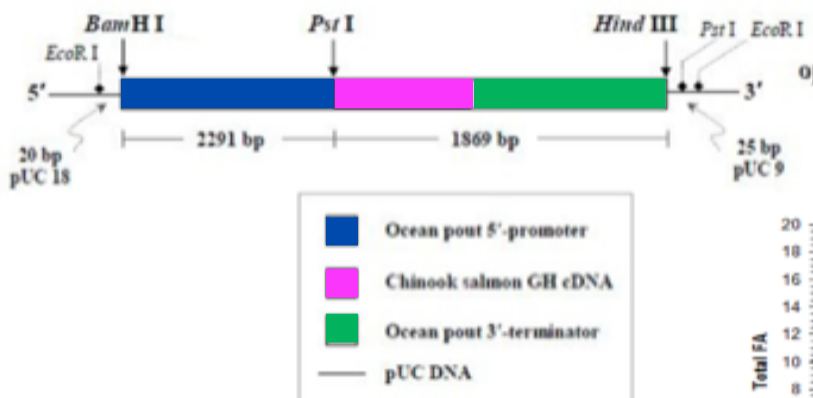


Figure 1: Genetic construct (Canada, 2013)

CONTROL MEASURES

- Physical • Biological

ANIMAL WELFARE

Decreased response to hypoxia and other alterations
Insertion in DNA repeated region
Triploidy/Other causes
Morphological malformations
Abnormalities among acceptable range

COMPARISON WITH NATURAL SALMON

- Growth and food conversion:

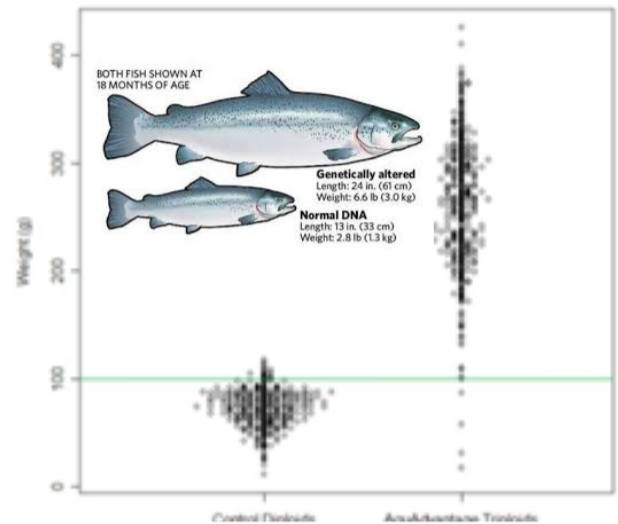


Figure 2: Salmon weight comparison at 2700 degree-days (FDA, 2010)

Figure 3: Salmon size comparison at 18 months (Hughes, 2014)

- Nutritional content:

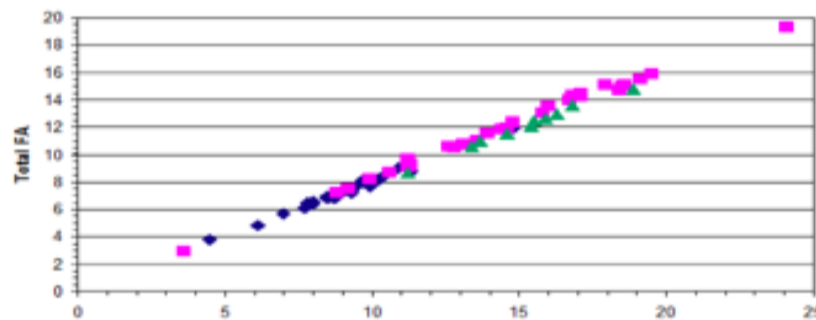


Figure 4: Fatty acids content per total lipid content. (FDA, 2010)

- Allergic risk:

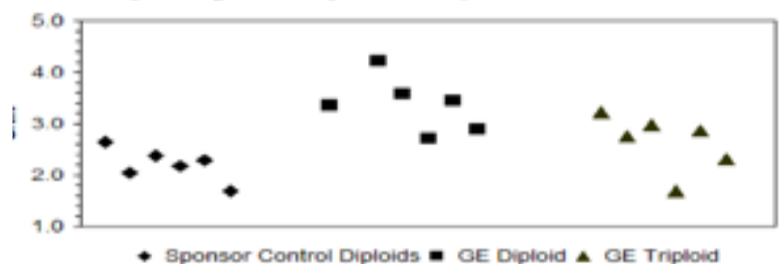


Figure 5: IgE reactivity comparison. (FDA, 2010)

CONCLUSIONS:

- All year GH expression • Welfare unaffected
- No environmental risk • More efficient and faster growth