CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J2019

Project Title
Investigating the Concentration Levels of PCBs in Farmed Fish Feed

Abstract

Objectives/Goals
The focus of my project was to investigate if two of the most widely used brands of fish feeds, Rangen and EWOS, are one of the major sources of Polychlorinated Biphenyl (PCBs) contamination in farmed salmon. Prior research studies indicate that wild-caught salmon contain fewer PCBs than farm-raised salmon. Therefore, I hypothesized that both Rangen and EWOS fish feeds will contain PCB contaminations of at least 0.05 parts per million.

Methods/Materials
First, the collected samples were separated and properly labeled. The PCBs (if any) were then extracted from the samples by using a Methylene Chloride/acetone solvent. These extracts were concentrated by evaporating the Methlyene Chloride/acetone solvent with a Rotovap. Then, the MC/acetone solvent was exchanged into Hexane solvent. Acid was then added to the samples in order to remove the organic components and clear up the solvent. After that, the solvent was put onto a Gas Chromatography (GC) instrument for analysis.

Results
No PCBs were found in either brand of fish feed, Rangen nor EWOS.

Conclusions/Discussion
My experiment concludes that Rangen and EWOS fish feeds are not one of the major sources of PCB contamination in farmed salmon.

Summary Statement
To investigate if Rangen and EWOS fish feeds are one of the major sources of Polychlorinated Biphenyl (PCB) contamination in farmed salmon.

Help Received
I used the facilities and equipment at Appl Labs; mentored there by Sharon Dehmlow, Danielle Abrahms, Monica Aguilera, and Leonard Fong. Jennifer Weibert and my mother helped me with my board layout. Jonathan Bowns, Kay Barrie, and Jennifer Weibert assisted me with editing.