Consumers increasingly demand antibiotic-free products

Final stages of research about the use bacteriophages to replace antibiotics in fish farms

- **During the past year, samples have been taken to determine the effect of this technology on marine microorganisms and on fish.**

- **The results will be complete this summer, when researchers analyze the metagemonic data describing the bacteria populations and assess the environmental effect of this technology.**

- **If results are positive, the fight against fish pathogens by bacteriophages would greatly reduce the environmental impact of fish farms and increase the profitability of farms.**

(Derio, January 20th, 2017) Spanish and Portuguese researchers continue to analyze the environmental impact of the use of bacteriophages that fight against microorganisms responsible for the diseases in fish farms. The research, funded by the European LIFE program, is led by the Spanish technology center AZTI and is also participate by researchers from Biopolis S.L. (Spain), the University of Aveiro (Portugal) and the Piscicultura Aguacircia (Portugal).

The strategies developed to date to combat bacterial infections in the different species growth in fish farms include in most cases the use of antibiotics. Consumers, however, demand antibiotic-free products. In this context, the use of naturally occurring bacteriophage is an interesting alternative to cover the growing food demand of fisheries and aquaculture.

The aquaculture sector is a booming activity, with a clear social and economic impact. Since 2013, aquaculture has already surpassed production of 97.20 million tons worldwide, compared to 93.8 million tons captured by conventional fishing, which means that more than 50% of the products From aquaculture.

Seeking an alternative solution to antibiotics that does not affect fish or consumer health, researchers are looking to identify bacteriophages - organisms that infect and destroy bacteria - that kill these pathogens without affecting the environmental and intestinal bacterial communities.

Up to now, Scientifics have obtained very promising results in laboratories, but the use on an industrial scale requires knowledge of the environmental impact of bacteriophages, especially in bacterial ecology. The LIFE13 ENV/ES/001048 - ENVIPHAGE project addresses this gap between the laboratory and the treatment on an industrial scale. Based on genetic technologies, the project studies the effect of bacteriophages in environmental and intestinal bacterial communities, two of the critical points for the use of this technology in fish farms.

During 2014 and 2015, the research focused on selecting the most suitable bacteriophages to carry out the project, focusing on those that are active against pathogenic microorganisms for fish. During the last year, significant quantities of these phages have been produced and field tests have been carried out. Environmental and

fish samples were taken to determine the effect of this technology on marine microorganisms, on the microorganisms present in the fish and on the animals themselves. The results are expected to arrive during 2017, when researchers analyze the metagenomic data describing the bacteria present in different environments and evaluate the environmental effect of this technology.

Update information is available at http://www.enviphage.eu/en/