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Water Quality Assesment on Trout Farm Based on Bacteriological Indicators

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The development of fish infectious diseases is described by most authors as the result of pathogen-host-environment complex interactions. As a relatively small number of pathogenic bacteria are responsible for the most important economic losses in cultured fish, the environmental microbiota represents an important factor that has to be controlled in order to prevent and control the viral and bacterial diseases in fish (Toranzo et al., 2005). The aim of this study was to evaluate the microbiological quality of water from three sources: small culture basins used for fry, commercial trout basins at different depth and evacuation pipe. A total of 40 water samples were assessed and the bacterial strains were isolated and identified by conventional methods and biochemically characterized using API Staph, API 20NE and API ID 32E (Biomerieux, Marcy l'Etoile, France). The results indicated *Aeromonas hydrophila* as the only bacterial species isolated from the small culture basins used for fry, while from the evacuation pipe the same bacteria was obtained along with *Serratia fonticola*. As for the commercial trout basins several other bacterial species were identified and the observed bacterial pattern varried when compared to the samples obtained from different water depths (table 1).

Tab. 1.

Bacterial species identified from different water depths

Basin No.	**Depth**		
	0,1m	**1,0m**	**1,7m**
15, 16	*Aeromonas hydrophila*	*Aeromonas hydrophila*	*Aeromonas hydrophila*
17	*Aeromonas hydrophila*	*Aeromonas hydrophila*	*E. coli*
19	*E. coli*	*E. coli*	*Aeromonas hydrophila*
10	*Klebsiella planticola*	*E. coli*	*Klebsiella planticola*
26	*Aeromonas hydrophila*	*Aeromonas hydrophila*	*Serratia marcescens* *Staphylococcus spp*
14	*Aeromonas hydrophila*	*Aeromonas hydrophila*	*Aeromonas hydrophila*
28	*Aeromonas hydrophila*	*Staphylococcus spp*	*Staphylococcus spp*
29	*Staphylococcus spp*	*Staphylococcus spp*	*Serratia fonticola*

The identification of bacteria isolated from the water sources mentioned above provides valuable information on water quality on trout farm which is clearly important in relation to health protection. The presence of pathogens such as *E. coli* also indicated the potential risk for human health.