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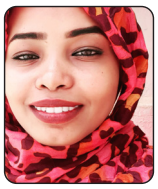
Abstract



Aeration of Fish Pond Aquaculture Using Wind Power

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Abstract:

This research discuss the possibility of sing wind energy to operate the aeration devices which are used in the intensive fish farm for Nile Tilapia. The study was done for the oxygen consumption by 1 kg fishes of tilapia put it in 1 m3. The theoretical study shows that the fishes consume around 0.5 gO2/hour when using paddle wheels with average oxygen transfer rate 2.6 kgO2/kW.h comparing this with dissolved oxygen consumed by fishes we found that 1 kW will aerate 5200 m3 and the same power will aerate 1800 m3 when using air diffuser system with average oxygen transfer rate 0.9 kgO2/kW.h, this power can saved by wind turbine with dimension of a tower 6 m and diameter 2.7 m. In conclusion the research found using wind power to aerate fish farm will be successful and economic choice and can be implemented in Sudan.

Biography:

Fatima has completed her B.Sc. at the age of 21 years from Univesity of Khartoum and M.Sc. studies at age of 23 from the same university faculty of Engineering, Mechanical Engineering deparment. She is a Sevice Advisor Engineer at Huyndai deaership in Sudan Since 2015 and worked as a Teaching Asistant in Khartoum University for 2 years.

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