

**ANALYSIS OF PHYSICO-CHEMICAL WATER PARAMETER AND
ZOOPLANKTON OF VILLAGE POND “KAMALPOKHARI” OF
KAMALVINAYAK, BHAKTAPUR**



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Submitted to

Central Department of Zoology,
Institute of Science and Technology
Tribhuvan University,
Kirtipur, Kathmandu
Nepal
2016

DECLARATION

I hereby declare that the work presented in this thesis has been done by myself, and has not been submitted elsewhere for the award of my degree. All sources of information have been specifically acknowledged by reference to the authors and institutions.

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Recommendations

This is to recommend that the thesis entitled “**ANALYSIS OF PHYSICOCHEMICAL WATER PARAMETER AND ZOOPLANKTON OF VILLAGE POND “KAMALPOKHARI” OF KAMALVINAYAK, BHAKTAPUR**” has been carried out by Saru Sakha for the Fisheries. This is her original work and has been carried out under our supervision. To the best of our knowledge, this thesis work has not been submitted for any other degree in any institutions. partial fulfillment of Master’s Degree of Science in Zoology with special paper Fish and Fisheries.

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LETTER OF APPROVAL

On the recommendation of supervisor this thesis is submitted by Saru Sakha entitled **“ANALYSIS OF PHYSICOCHEMICAL WATER PARAMETER AND ZOOPLANKTON OF VILLAGE POND “KAMALPOKHARI” OF KAMALVINAYAK, BHAKTAPUR”** is approved for the examination and submitted to the Tribhuvan University in partial fulfillment of the requirements for Master’s Degree of Science in Zoology with special paper Fish and Fisheries.

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CERTIFICATE OF ACCEPTANCE

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ABSTRACT

The present study entitled, “Study of physicochemical water parameter and zooplankton of village pond “Kamalpokhari” of Kamalvinayak, Bhaktapur was conducted from 14th August 2012 to 6th February 2013, for a period of six months. The main objective of this work was to analyze the physico-chemical parameters and to investigate its relation with zooplankton production. The study site was divided into three station , namely station A,B and C. The water samples from each station were collected throughout the study period between 7.00 to 9.00 am. The physical parameters such as temperature, depth, transparency, water colour, nature of the day were observed on the field itself. The analysis of chemical parameters such as pH, hardness, DO, CO₂, alkalinity were examined on the very day. The qualitative and quantitative analysis of zooplanktons was also carried out in the lab of Central Department of Zoology. The variation in colour of water was observed distinctly in winter and summer season. The fluctuation in transparency of the pond water was low in rainy season and high in winter. The variation in temperature may be due to the seasonal changes as well as weather conditions. The high temperature was recorded during summer season and low in winter. The average pH value of the pond water was found alkaline (8.1), which was suitable for aquatic life. The dissolved oxygen ranged between 3.3ppm to 7.5 ppm with the average of 5.7 ppm. And positive correlation coefficient was found between dissolved oxygen and zooplankton from the statistical analysis. The free carbon dioxide fluctuated from 0 to 8 and was absent in 13th and 30th October. Total alkalinity ranged from 116.6 to 185.3. The total hardness ranged from 5 to 21.67. From the statistical analysis positive correlation between alkalinity and zooplankton and negative between hardness and zooplankton. The zooplanktons were more densely found during summer season and their density was low in winter. In the present investigation, two genus of rotifer i.e. Keratella, Brachionus, one genus of Cladocera i.e. Daphnia and two genus of Copepoda i.e. Cyclops and Diaptomus were recorded. The total zooplanktonic abundance in the pond was 1944 no./liter during the study period, which showed the fortnightly density of 161.1 no./liter.