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Research Article

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Cyclops in stagnant water: Ponds and Lake

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Abstract

With more than 400 species, Cyclops is one of the most widespread genera of freshwater copepods. In fresh water, cyclops is widely distributed, although it is less common in salt water. It inhabits the vegetation-covered banks of still and slowly moving bodies of water, where it feeds on small plant and animal components, including nematodes, as well as carrion. Guinea worm can be transmitted to humans by water fleas (genus Cyclops), tiny freshwater organisms of the Cyclopoida group. Passively, they spread from pond to pond attached to aquatic insects, caught in the feathers of birds, or in dust clouds that carry encysted larvae from a dried-up pond across the landscape.

Keywords: Cyclops, Stagnant water, copepods, nematodes, aquatic insects

Description

This study was performed at Nepalgunj Medical College, Nepal,in collaboration with Shridev Suman Subharti Medical College, R.B.B Subharti University, Dehradun for the observation of Cyclopes which is usually found in the stagnant fresh water bodies like wells or pond water. We collect the different 50 water samples from river, ponds, walls or lake and water tanks.

The Cyclops individuals may range from ½ -5 mm long [1] and are clearly divided into two sections. The Cyclops has a worldwide in stagnant fresh water, but is less frequent in salted water.

The intermediary host of fresh tapeworm (*Diphyllobothrium latum*) infection and dracunculiasis (guinea worm illness) is the cyclops. Humans will contract this infection by consuming polluted water. Although it seldom results in death, draconculiasis may impair a person [2].

Of the 50 water samples, 40% (20/50) samples were collected from pond water, 8% (4/50) samples were collected from Ganga river water,

12% (6/50) samples were collected from Lake water (Pokhara), 10% (5/50) samples were collected from water tank, 10% (5/50) samples from were collected Tube-wells, 8% (4/50) samples were collected from hand pump water and 12% (6/50) samples were collected from water cooler is shown in Figure 2. In this study, we found that the maximum positivity rate of cyclops found to be in pound water 85% (17/20), lake water samples 66.66% (4/6) and 40% (2/5) in water tank, 40% (2/5) in tube wells water and 16% (1/6) in water cooler is shown in Figure 1. Cyclops may be seen with the unaided eye, but when we examine the sample under a microscope at 40X, Cyclops were clearly visible is shown in Figure 3 (a) and (b).

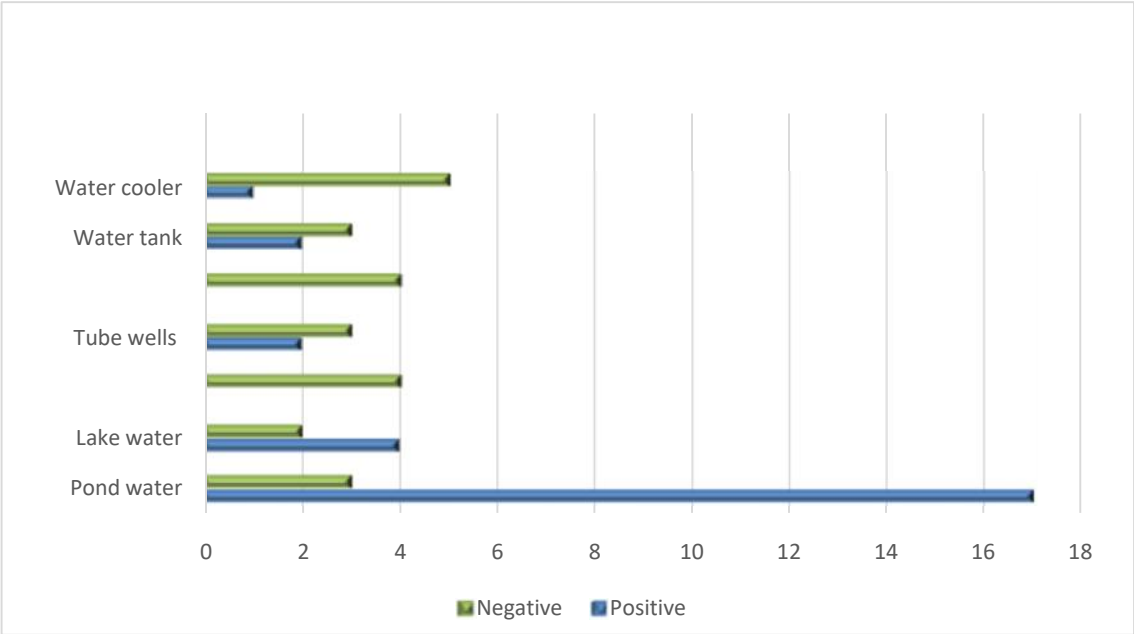

Figure 1: Total number of positive and negative samples

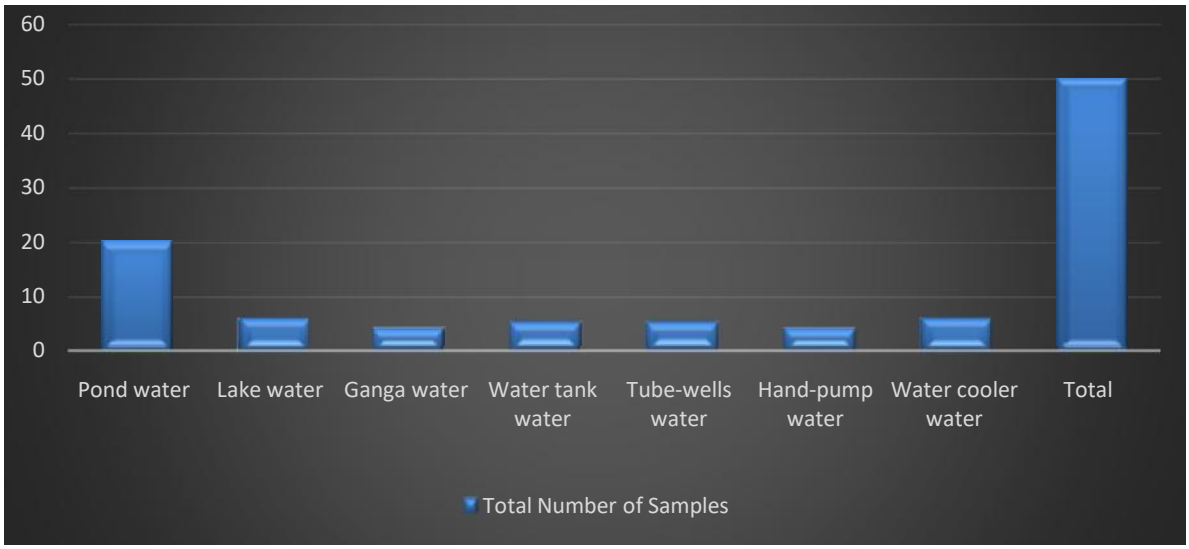

Figure 2: Showing number of samples taken from different water bodies

Control Methods

Cyclops can be controlled by using various methods like Chemical, Physical, Biological and Engineering methods.

1. Chemical Techniques: Chlorine at a strength of 22 ppm kills Cyclops in two hours; [3] despite the fact that water at this chlorine concentration tastes and smells terrible. You can use calcium hydroxide at a dosage of 4 grammes per gallon of water.

2. Physical Techniques: Boiling water can be used to destroy cyclops as well as straining water through a thin cloth to eliminate it.

3. Biological Ways: Cyclops are consumed by small fish like barbell and gambusia in biological methods.

4. Engineering: Effective community-level interventions include the use of tube wells, the elimination of step-wells, and the provision of drinking water by piping water supplies [4].

Figure 3 (a): Cyclops seen under microscope (40X)

Figure 3 (b): Cyclops seen under microscope (40X)

Conclusion

It is clear, that the Pond water, water from lakes and wells water are contaminated with copepods (cyclops). Since mesocyclops and microcyclops are known Guinea worm vectors, residents in the research regions are at concern for Dracunculus infection whenever larvae reach their way to the water sources.

To prevent the larvae from the hosts from being moved to water sources, awareness of both the worm cycle and the disease should be promoted.

Acknowledgments

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Conflicts of interest

There are no conflicts of interest

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