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**Isolation of extracellular heat stable enzyme producing bacteria from a hot water spring in Sri Lanka**

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The Nelum – wewa hot water spring situated in Sewanapitiya, Polonnaruwa Sri Lanka has a water temperature of 61 °C and an out flow temperature close to the well of 56 °C, pH was 4.8. Water and soil samples were collected under sterile conditions and they were inoculated in to a culture medium containing a salt solution of 0.1% MgSO<sub>4</sub>.7H<sub>2</sub>O, 1% KH<sub>2</sub>PO<sub>4</sub>, 0.3% CaCl<sub>2</sub>, 0.05%(NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 0.1% K<sub>2</sub>HPO<sub>4</sub> and the carbon source was varied to starch 1% W/V, casein 10%W/V, olive oil 2% V/V to promote growth of amylase, protease, lipase producing bacteria, pH was maintained at 7. Incubation was done at 37 °C, 50 °C, 70 °C in an orbital shaker at 150 RPM. Extracellular amylase, protease and lipase producing bacteria were isolated by enrichment culture method and streak plate isolation procedure. Maximum amylase activity 4300U/L was observed at 50 °C after 12 hours incubation. Amylase producing bacteria was identified by morphological and biochemical tests as *Bacillus licheniformis*. Low activity of the bacteria was observed between 60 °C to 70 °C. Highest protease activity of 200U/L was observed at 50 °C after 20 hours of incubation. Protease producing bacteria was identified as *Bacillus subtilis* and their growth was not observed at 70 °C. Highest lipase activity of 41 U/L was observed at 60 °C after 36 hours of incubation and the bacterium was identified as *Bacillus coagulans*. Their maximum growth was observed between 60 °C to 70 °C, but no growth was observed at 37 °C.

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