The role of algae in the purification and removal of excess amounts of nitrate and phosphate water resources

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Abstract:
Nitrogen and phosphate are the nutrients of aquatic ecosystems, and aquatic creatures need these ions for their natural functions. However, excessive amounts of nitrate and phosphorus ions in surface and underground waters cause many problems. Discharging high levels of nutrients into aquatic resources causes harmful algal blooms and causes disturbance and loss of ecological balance of organisms in water resources .In addition, consuming drinking water containing high levels of nitrate causes damage to the gastrointestinal tract, carcinogens and lung destruction in adults and the development of methemoglobinemia in infants less than six months old. The purpose of this review is to evaluate and investigate the use of algae for the removal of excess and harmful amounts of nitrate and phosphorus ions from solutions or water sources. Several studies have shown that the absorption capacity and removal efficiency of algae are affected by several factors such as pH and temperature of aqueous solutions, initial concentrations of nitrate and phosphorus ions in aqueous solution, biomass, algal species and biomass doses of algae.

Keywords: Nitrate ion, Phosphate ion, Algae and adoption capicity