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周村水库藻类在混合胁迫条件下的生长衰亡规律

Growth and decay of algae in Zhoucun reservoir under the hybrid stress conditions

关键词: [藻类](#)|[光照](#)|[温度](#)|[压力](#)|[生产速率](#)

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摘要: 为了探明表层藻类被混合到下层水体中受到环境条件胁迫作用后的生长衰亡规律,并为混合控藻技术提供技术依据,通过实验室模拟和现场实验研究了周村水库藻类在不同水深条件下,受光照、温度、压力等胁迫条件影响后的生长衰亡规律.结果表明,以蓝绿藻为主的周村水库藻类,在光强为32500 lx时生产速率最大,约对应于水库水深1~2 m处;温度在26 ℃左右比较适合藻类生长;当光照和温度一定时,随着压力的增大,藻类生长受到抑制,压力超过0.2 MPa时,藻类衰亡加速.综合水库不同水深条件下的光照、温度和压力,藻类在2.5 m水深以上净增长,2.5 m水深以下负增长,6 m水深处负增长最大,12 m水深以下负增长减小.

Abstract: In order to explore the growth and decay of algae in surface water under environmental stress conditions when it was mixed into the deep water, the algae in Zhoucun reservoir was studied on the growth and decay under the stress of the different water depth conditions with different light, temperature and pressure through laboratory and field experiment. The results showed that Zhoucun reservoir was dominated by cyanobacteria and green algae. The algae growth rate reached maximum at 32500 lx, which was approximately corresponding to the light intensity in 1~2 m water depth of the reservoir; The temperature at 26 ℃ was suitable for the growth of algae; with certain light and temperature, the growth of algae was inhibited by the increasing pressure. The decay of algae was accelerated when the pressure exceeded 0.2 MPa. The field experiment combining light, temperature and pressure in different reservoir water depths showed that the growth of algae in water depth was positive above 2.5 m while negative in water depth below 2.5 m. The maximal negative growth was in 6m water depth, and the negative growth decreased in water depth below 12 m.

Key words: [algae](#)|[light](#)|[temperature](#)|[pressure](#)|[production rate](#)

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