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# 鄱阳湖水位变化对灰化苔草生态适应性和种群增长耐受性的影响

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Water level conditions are the key factors that affect the growth and distribution of wetland plants. Using *Carex cinerascens*(*C. cinerascens*) as the study species, we employ indoor simulations and field surveys. Our results show that *C. cinerascens* can adapt to rhythmic changes in the water level through different adaptation strategies. Compared to that of the control group, plant growth was better with a 0-0.4cm/d water level rate, and plant growth was in the 42-56cm range to that a 1.0-1.4cm/d water level rate. Furthermore, it was observed that 0-0.4cm/d was the most suitable growth rate, with 0.6-1.0cm/d and 0-32cm being the ideal plant tolerance ranges, and increasing to 1.0-1.4cm/d and 32-56cm exceeds the plant tolerance threshold. In the middle and late period of the experiment (25-

45 d), the ecological characteristics of the plants changed significantly. For example, the root-to-shoot ratio of the plant in the stable water level reached 26.1. In our field observations, plant biomass can be influenced by a variety of environmental factors. The frequency of the species was the largest at an elevation of 15m, and the growth status of the dominant and companion species of *C. cinerascens* was weakened with an increase in soil moisture content. The suitable water content for *C. cinerascens* growth was 27.6-57.3%, the distribution elevation was 12.54-16.59m, and the optimum elevation was 13.56-15.54m. The study is expected to provide a reference for wetland ecology research and wetland protection and restoration, a theoretical reference for the coordination of water resource development and utilization of Poyang Lake and ecological protection of important lakes and wetlands, and an important scientific basis for wetland hydrologic regulation, ecological restoration and biodiversity conservation.

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