

园艺—研究报告

光质对黄瓜幼苗绿色叶片叶绿素荧光的影响

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摘要:

以北方白黄瓜幼苗为试材,用蓝、绿、红发光二极管(LED)单色光进行单色光和混合光照射诱导处理,分析了光质对Fp685、Fp735、Fp685/Fp735、F685、F735、F685/F735和Y(II)的影响。3种LED单色光源(蓝、绿、红)照射诱导下,随着光强的增加白黄瓜叶片叶绿素荧光曲线OJIP中P点呈现快速上升趋势。其中,Fp685主要表现为蓝光>绿光>红光;而Fp735均表现为绿光下高,红蓝光下低;Fp685/Fp735荧光比值均表现为蓝光最高,绿光和红光下较低。混合光得到的荧光曲线的P点出现早于单色光照射,且P混合>P单色光加和。混合光荧光值计算得到的F685/F735比值始终低于单色光荧光加和值计算得到的F685/F735比值。各个单色光质下的PS II实际光化学量子产量表现为:Y(II)绿光>Y(II)红光>Y(II)蓝光。

关键词: 混合光

Chlorophyll Fluorescence of Green Leaves by Light Quality in White Cucumber Seeding

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Abstract:

The objective of our study was to analyze the effect of light qualities on Fp685、Fp735、Fp685/Fp735、F685、F735、F685/F735 and Y(II) of Chlorophyll fluorescence in green leaves green leaves induced by blue, green and red light-emitting diode (LED) in northern white cucumber seeding. With the increase of light intensity, the P in OJIP of Chlorophyll fluorescence curve showed a fast rising. Fp685 were in the order of red>blue>green, but Fp735 were in the order of green >red≈ blue. However, the order of blue>green≈ red were observed for the ratio of Fp685/Fp735. The point of P appeared earlier under the mixed light than under single light, and P<sub>mix</sub>>P<sub>single</sub>. The ratio of F685/F735 always lower under the mixed lights than under single light. The order of Y(II) green>Y(II) red>Y(II) blue were observed for the Yield of PS II by single light.

Keywords: mixed lights

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