

## 弱光条件下不同基因型辣椒幼苗光合与生长的差异

### Differences of photosynthesis and growth in seedlings of different peppers under weak light

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英文关键词: pepper; weak light; net photosynthetic rate; relative healthy index

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中文摘要:

利用遮光方式, 使光照强度降低65%~70%, 以研究弱光对不同基因型辣椒幼苗光合、蒸腾以及生长形态指标的影响。结果表明: 弱光环境下辣椒净光合速率、蒸腾速率和水分利用效率下降, 并且净光合速率的下降是非气孔限制的结果。弱光下辣椒幼苗同化物合成与积累受到抑制, 表现为叶片数减少, 高粗比增加, 根冠比、比叶鲜样质量、比叶干样质量、全株干样质量和壮苗指数下降。弱光使辣椒叶片叶绿素含量增加, 叶绿素a/b比值下降, 叶片含水量上升。小果型辣椒的耐弱光性普遍强于大果型甜椒, 并且弱光环境下相对壮苗指数较高, 以及净光合速率下降较少的辣椒或甜椒, 具有耐弱光的优势。

英文摘要:

This paper studied the effects of weak light (30%~35% light intensity of the control light intensity) on photosynthesis, transpiration and growth morphological indexes in seedlings of different peppers. The result showed that under weak light environment, net photosynthetic rate, transpiration rate and water use efficiency decreased. The decrease of net photosynthetic rate was considered as a result of non-stomata restriction. The synthesis and accumulation of assimilate were significantly inhibited under weak light. It can be seen that weak light led to the decrease of leaf numbers, root/shoot ratio, vital leaf mass, specific leaf mass, total dry mass and healthy indexes and the increase of plant height/stem diameter ratio. Under weak light the chlorophyll a/b ratio declined but the chlorophyll contents and leaf water content increased. Weak light-tolerance of hot pepper was generally stronger than sweet pepper. Pepper may possess potential weak light-tolerance which grown under weak light with higher relative healthy index and less decreasing net photosynthetic rate.

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