

轻度遮光对温室油桃结果枝光合碳同化物积累和分配的影响

Effect of slight shading on accumulation and partitioning of carbon assimilation in fruit-bearing limb of greenhouse-grown nectarine

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中文摘要:

以4年生日光温室栽培“瑞光5号”油桃(*Prunus persica* L. var. *nectarina* Ait)为试材,在果实第二次迅速膨大期,采用加盖塑料旧膜的方法模拟温室薄膜灰尘积累,研究了遮光10%~12%左右对温室油桃结果枝光合碳同化物积累和分配的影响。结果表明:轻度遮光后,油桃结果枝顶端新梢叶片净光合速率明显下降,淀粉含量减少,可溶性总糖变化不明显;采用 ^{14}C 标记结果枝顶端新梢发现,轻度遮光后,饲喂新梢的光合产物主要集中供应其附近的果实,向远处的果实输送减少,而且果实的外中果皮同化物分配比例下降;轻度遮光后,采收果实鲜重和横径变小,着色变差。因此,要提高果实品质,应尽可能地改善温室油桃在果实第二次迅速膨大期的光照环境。

英文摘要:

Carbon assimilation accumulation and partitioning was studied in one-year-old fruiting limbs of greenhouse-grown "R uiguang 5" nectarine (*Prunus persica* L. var. *nectarina* Ait), affected by about 10%~12% shading treatment (simulating the light intensity decrease due to dust accumulation on greenhouse covering by adding old plastic film to it) during the second rapid swell of peach fruit growth. The results showed that net photosynthesis rate and starch content decreased markedly and total soluble sugar content changed little in leaves of terminal shoot under shading conditions. After labeling terminal shoot by ^{14}C , more carbon was found to export from fed shoot to the nearby fruit and less carbon to the distant fruits. Moreover, a reduction of carbon assimilation partitioning in mesocarp was also observed within fruit. Fruits harvested in fruiting limbs by shading treatment were observed to have less fresh weight and transverse diameter and poor red coloration. Therefore, to improve the fruit quality it is necessary to increase the sunlight intensity inside greenhouse as far as possible during the second rapid swell of peach fruit growth.

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