

园艺—研究报告

不同施肥方式对文心兰生长及光合生理特征的影响

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摘要:

通过研究不同施肥方式对文心兰的生长和光合生理特征的影响,探索文心兰不同营养生长阶段最佳的施肥方式。在幼苗期和成苗期分别设置5种施肥方式及对照进行基质栽培盆栽试验,处理结束后测定植株干物重、叶绿素含量等指标。结果表明,在不同营养生长阶段不同施肥处理的文心兰株高、干物质积累、净光合速率等光合生理指标均存在较明显的差异;在幼苗期喷施、淋施低浓度专用肥及淋施中浓度专用肥,文心兰的株高、叶干重、净光合速率、气孔导度、胞间CO₂浓度、蒸腾速率等指标均比对照明显提高,宜采用喷施低浓度专用肥(2500倍液)或喷施与淋施低浓度专用肥相结合的施肥方式;在成苗期淋施中、低浓度专用肥及撒施缓释肥,文心兰的株高、假鳞茎周长、茎叶干重、净光合速率、气孔导度和羧化效率等指标均比对照明显提高,宜采用淋施中浓度专用肥(500倍液)或淋施低浓度专用肥结合撒施缓释肥的施肥方式。

关键词: 光合生理

Effects of Different Fertilizing Methods on Growth and Photosynthetic Physiology of Oncidium

Abstract:

The purpose was to study the effects of different fertilization on growth and photosynthetic physiology of Oncidium, find out the best way of fertilization in the vegetative growth phase. The studies on parameters of photosynthetic physiology and growth were carried on potted Oncidium by five different fertilizing methods at seeding and stocking stage. It was showed that in the vegetative growth phase, different treatments had obvious diversity in the indexes of plant height, dry material accumulation, content of chlorophyll of the leaves and its photosynthetic physiological characteristics. We found out that at seeding stage spraying or irrigating specialty fertilizer at low concentration, irrigating specialty fertilizer at medium concentration, can obviously increase the plant high, dry weight of the leave, net photosynthetic rate, stomatal conductance, Intercellular CO₂ concentration, transpiration rate, and so on. At stocking stage, irrigating specialty fertilizer at medium or low concentration, spreading slow release fertilizer, can obviously increase the plant high, diameter of bulb, dry weight of stem, net photosynthetic rate, stomatal conductance, carboxylation efficiency, and so on. The best fertilizing method at different stages of Oncidium: at seeding stage only spray or combine of spraying and irrigation of specialty fertilizer at low concentration; at stocking stage, irrigate specialty fertilizer at medium concentration or irrigate specialty fertilizer at low concentration together with spread slow release fertilizer.

Keywords: photosynthetic physiology

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