

植物生产层

温度和光照时间对3个秋眠型紫花苜蓿品种形态特征的影响

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摘要:

短日照和低温是导致紫花苜蓿 (Medicago sativa) 秋眠的主要环境因子。本研究分析了降温与缩短光长对不同秋眠型紫花苜蓿品种形态特征的影响机制, 并探讨其与秋眠性之间的关系。结果表明, 光长缩短和降温互作处理对于苜蓿各项形态指标的影响显著 (P<0.05) 大于单一处理; 降温和互作处理使非秋眠型与秋眠型苜蓿品种的分枝数减少; 非秋眠型与秋眠型苜蓿品种分别在降温和光长缩短处理下叶片变狭长, 茎秆生长较弱, 匍匐生长明显, 不同处理下苜蓿品种牧草产量和品质显著 (P<0.05) 降低, 且光长缩短的影响大于降温处理。

关键词: 苜蓿; 低温; 短日照; 秋眠性; 形态特性

Effect of temperature and light length on the morphological traits of three fall dormant class varieties of Medicago sativa

null

Abstract:

Low temperature and short light length are the main environmental factors causing the fall dormancy of Medicago sativa. An experiment was conducted in the laboratory to determine the effect of combination of different temperature and light length on morphological traits of three varieties of M. sativa with different fall dormancy classes. The major results of this study showed that the interaction effectiveness of temperature reduction and light length reduction on morphological traits of alfalfa varieties were significantly greater than single treatments (P<0.05). Temperature reduction and interaction between temperature reduction and light reduction decreased the branch numbers per plant, weakened stem growth, and made the leafage become long and slim for non dormant and dormant alfalfa varieties, as well as enabled the prostrate growth to become obvious. Reduction in light length and temperature significantly reduced the forage yield and quality of alfalfa varieties (P<0.05) and light length reduction were more than temperature reduction.

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