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## Superior Line from Anther Culture of *Dendrocalamus latiflorus* Selected after Field Trial

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论文题目: Superior Line from Anther Culture of *Dendrocalamus latiflorus* Selected after Field Trial.

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论文摘要: The selection of superior lines is extremely important to improve the utilization rate and economic value of bamboo. In this research, 120 anther-regenerated bamboo lines were planted in the field, and the survival rate reached 84.2% one year after planting. During five years of observations, we continuously measured and recorded the number of shoots and the size of the new bamboo of these regenerated lines. The results showed that there were considerable differences in culm size and growth rate among the different lines. After comprehensive evaluation, we found that one of the lines (P82) had obvious advantages in culm size and growth rate compared with the others. The chromosome ploidy of line P82 and the other three lines (P38, P84, and P34) was detected. It was found that P82 was hexaploid, while the other three lines were dodecaploid. Nutritional components of the P82 shoots were further detected. The results showed that the content of soluble sugar was 1.4%, the content of free amino acid was 3.5 g/kg-1 (FW, fresh weight), and the content of protein was 14.8 g/kg-1 (FW), and there were no significant differences compared with the local wild mature bamboo. Anatomical analysis showed that the vascular bundle size of the line P82 (hexaploid) was significantly larger than that of line P38 (dodecaploid), and the length of parenchyma cells in the culm wall of line P82 was similar to that of line P38, however, the cell width of line P82 was significantly wider than that of line P38. In this study, the breeding of superior lines of regenerated bamboo plants from an anther culture was realized, which provided an example for a new method for selecting superior lines from an anther culture, and also enriched the resources of superior lines of *D. latiflorus*.

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