USE OF ISOZYME TO IDENTIFY THE INHERITANCE CHARACTERISTICS OF VARIOUS FORMS IN A *PINUS THUNBERGII* PARL. PLANTATION

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Abstract

The pattern of isopreoxidase and isoestrase separated by gel electrophoresis were applied as "genetic marker" to study various forms collected from a *P. thunbergii*" plantation in Shandong province, which has been introduced for over 70 years and is near to a *P. densiflora* plantation.

14 various isopreoxidase patterns have been found in 19 various forms of *P. thunbergii*, which show a combination of different degree and manner of both *P. thunb* and *P. densif*. A new form of *P. thunb* selected from those possesses a resistance to *Matsucoccus matsumurae* (Kwana) and *Dendrolimus spectabilis* Butter better than *P. thunb*. Its isopreoxidase pattern of the needles possesses complementary bands of both *P.thunb* and *P.densif*. Its isoestrase pattern of seeds is segregated into two parts: 1/2 pattern of the new form and 1/2 pattern of *P. thunb*. All of these come to a conclusion that there are various forms of taxonomic hybrid of *P. thunb* and *P. densif* in the plantation.

Key words: isozyme; various form; taxonomic hybrid; genetic marker

"杨树杂交胚胎学研究"通过成果鉴定

由国家自然科学基金资助，中国林科院林研所李文钿研究员主持的"杨树杂交胚胎学研究"课题，历经三年，于3月23日，在中国林科院主持下通过了成果鉴定。鉴定委员有中国科学院植物所、遗传所，北京大学，北京、南京、东北林业大学，国家基金委，林业部科技司和中国林科院的知名专家、教授和有关领导。在评审中一致认为，本项研究观察了杨树的有性生殖过程的形态发生；查明了杂交时花粉在异种柱头上的异常行为、受精作用以及获得了一些杂种植株；研究了种间远缘杂交失败的胚胎原因；提出了克服不孕性的可能途径；并对杨树杂交亲本作了鉴定和分类。同时认为，该项研究目的明确，工作量大，观察细致，已达到杨树杂交胚胎学研究的国际水平。

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