

## 基于 ITS 序列探讨荻属及其近缘植物的系统发育关系

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**摘要:** 荻属是禾本科的一个小属, 其分类地位存在争议。通过测定和从 GenBank 中提取荻属 *Triarrhena* 及其近缘植物的 ITS 序列, 以芦苇 *Phragmites australis* 为外类群, 采用 MP (maximum parsimony) 和 NJ (neighbor-joining) 分析方法进行了系统发育分析, 这两种方法得到的系统发育树基本相同。荻属和芒属 *Miscanthus* 的种类形成一个单系类群; 河八王 *Narenga porphyrocoma* 与芒属和荻属的植物聚在一起并构成姐妹群; 白茅 *Imperata cylindrica* 与斑茅 *Saccharum arundinaceum* 聚成一小支并构成姐妹群, 白茅与荻属的关系较远; 荻属植物归并到芒属更为合理, 不支持将荻属置入白茅属或另立一属的观点。斑茅与白茅、河八王及蔗茅 *Erianthus fulvus* 系统发育关系较近, 而与滇蔗茅 *E. rockii* 及甘蔗属的竹蔗 *Saccharum sinense*、甘蔗 *S. officinarum*、细秆甘蔗 *S. barberi* 和甜根子草 *S. spontaneum* 的关系较远。甘蔗属、河八王属及蔗茅属关系复杂, 还需要进一步研究。

**关键词:** 荻属; ITS; 系统发育

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### Phylogenetics of *Triarrhena* and Related Genera Based on ITS Sequence Data

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**Abstract:** *Triarrhena* is a small-sized genus of Gramineae with only two species, which occurs in eastern Asia, particularly in China, but its taxonomic treatment has been a controversial matter. It was treated as an independent genus, or a species under *Miscanthus* or *Imperata*. This study is to assess the phylogeny of *Triarrhena* and its related genera in Saccharinae (Gramineae) based on internal transcribed spacer (ITS) and the 5.8s coding region of the nuclear ribosomal DNA. Maximum parsimony (MP) and neighbor-joining (NJ) methods were employed to analyze the data sets with *Phragmites australis* as outgroup. The phylogenetic trees based on the data set show that the genus *Miscanthus* (including *Triarrhena*) formed a monophyletic group. *Narenga porphyrocoma* was strongly supported to be the sister group of a subclade comprising *Miscanthus* and *Triarrhena*. *Imperata cylindrica* and *Saccharum arundinaceum* were sister group and formed a subclade, indicating their close affinity. The present authors suggest that *Triarrhena* should be merged with *Miscanthus*. The results of phylogenetic analysis also indicate that *Saccharum arundinaceum* has a closed relationship with *Imperata*, followed by *Narenga* and *Miscanthus*. However it is the most distant to the other species of *Saccharum*. Since the genera of *Saccharum*, *Narenga* and *Erianthus* are shown to be polyphyletic, further studies on their phylogenetic relationships are still needed.

**Key words:** *Triarrhena*; ITS; Phylogeny

荻属 *Triarrhena* 是禾本科黍亚科须芒草族甘蔗亚族中一个小属<sup>[1]</sup>。荻属的分类学问题在学术界存在争议, 荻曾置于白茅属 *Imperata*、芒属 *Miscanthus* 或独立为一属<sup>[2-6]</sup>。刘亮<sup>1)</sup>、<sup>[1]</sup>在对禾本科植物资源研究及编写中国植物志时, 把荻从芒属中分出,

另立荻属, 其依据是荻小穗无芒, 具发达根状茎区别于芒属, 荻又以大型圆锥花序, 雄蕊 3 枚而不同于白茅属。刘亮认为荻 *T. sacchariflorus* (Maxim.) Nakai 分布于我国北纬 30° 以北的东北、华北至日本, 而分布于长江中下游荻的材料是特产于我国的新种, 定

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