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# 运城盐湖4种藜科盐生植物叶的比较解剖研究

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**摘 要**:应用扫描电镜和光学显微镜对山西运城盐湖周围盐渍环境中4种藜科(Chenopodiaceae)盐生植物叶的结构进行了比较解剖研究。结果表明,碱蓬(*Suaeda glauca* Bunge)和盐地碱蓬(*Suaeda salsa* (Linn.) Pall.)属真盐生植物,结构特征相似:叶线形、肉质化,表皮上气孔器密集,叶肉具有发达的储水组织细胞和栅栏组织。灰绿藜(*Chenopodium glaucum* Linn.)和西伯利亚滨藜(*Atriplex sibirica* Linn.)为泌盐盐生植物,其中,灰绿藜具有双细胞构成的盐腺,西伯利亚滨藜则具有盐囊泡,此外,两种泌盐盐生植物中存在的异细胞和含晶细胞,对适应盐生环境有积极意义。从表皮细胞来看,4种植物的叶都有相同的适盐特征。总之,4种藜科盐生植物的叶片结构具有适盐的共同性和个体的多样性特征。

**关键词**:运城盐湖;藜科;盐生植物;叶;比较解剖
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# The Comparative Anatomy on Leaves of 4 Halophytes of Chenopodiaceae in Salt Lake of Yuncheng

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**Abstract**: The comparative anatomy on the leaves of 4 halophytes of Chenopodiaceae in salinate fields of salt lake in Shanxi Yuncheng were carried out by scanning electron microscope and light microscope. The results indicated that *Suaeda glauca* and *Suaeda salsa* belonged to Euhalophyte, and they had the same anatomical structure to adapt to the salt conditions: the leaves were line-shaped and fleshy, and the stomata were dense. There were well-developed water-storing tissues and flourishing palisade tissues in their leaves. *Chenopodium glaucum* and *Atriplex sibirica* are Recretohalophyte. *Chenopodium glaucum* had two-cell salt glands, while *Atriplex sibirica* had salt vesicles. The idioblasts and crystal cells in *Atriplex sibirica* and *Chenopodium glaucum* played an active role in adapting to the salt conditions. Observing from the epidermis cells of leaves, the 4 halophytes had the same drimophilous characteristic. In a whole, the leaves of 4 halophytes of Chenopodiaceae had common and diverse characteristics to adapt to the salt surroundings.

**Key words**: Salt lake in Yuncheng; Chenopodiaceae; Halophyte; Leaf; Comparative anatomy

由于长期生长在盐渍逆境环境中,盐生植物在其植物体的形态结构上具有一些适应特征。叶是植物体进行同化作用的主要器官,它暴露在空气中,所以叶片的形态结构对生境条件的反应最为敏锐[1]。由于外界环境的各种不利因素首先作用于叶表面,因此,叶表面结构特征可以真实体现植物对环境的适应状况[2]。运城盐湖地处山西省南部中条山山麓,面积约130多平方公里,其周围的盐渍环境孕育了茂盛的盐生植被,其中分布了较为丰富的藜科植物,据作者调查和资料记载[3],共有6属9种。笔者选择运城盐湖盐渍土中生长状态优良,分布广泛,并为群落优势种的藜科3个属的4种盐生植物为研究对象,对其叶的形态、表皮特征及内部结构进行比较研究,以揭示藜科植物适应盐生环境在叶器官上所表现的形态和结构特点,为进一步研究植物抗盐机理提供理论基础,同时为优良盐生植物的选育及盐碱土壤的改造提供依据。

## 1 材料与方法

### 1.1 材料

实验材料均于2008年6月采自山西省运城市盐湖周围盐渍土中的健壮植株。4种藜科植物分别

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