

论文

长白山地区优势蜜源植物花的气味与访花昆虫种类的关系

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摘要:

对长白山地区11种优势蜜源植物的访花昆虫种类进行了调查研究,并利用气相色谱-质谱联用法(GC-MS)分析了花的乙醇提取物成分。结果表明:11种蜜源植物的访花昆虫主要隶属于膜翅目、双翅目、鳞翅目和鞘翅目。其中,菊科植物的访花者主要为双翅目昆虫,蔷薇科和伞形科植物的访花者主要为鞘翅目昆虫,豆科植物的访花者主要为膜翅目昆虫。植物花的乙醇提取物成分在菊科、蔷薇科、伞形科、豆科和柳叶菜科之间未表现出显著的特异性,主要物质为酸类化合物,其次为酮类化合物和酯类化合物。在11种蜜源植物花的乙醇提取物成分中均含有羟基丙酮、乙酸、甲酸、顺式-9,12-十八碳二烯酸和苯酚,并且这5种成分的含量在11种蜜源植物花的乙醇提取物总含量中所占比例相近。

关键词: 蜜源植物 气味 访花昆虫 GC-MS 长白山地区

Relationship between Floral Scent of the Major Nectar Source Plants and Their Flower Visitors in Changbai Mountain Region

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Abstract:

The flower visitors of eleven major nectar source plants in Changbai mountain region were investigated and the ethanol extracts of their flowers were analyzed using gas chromatography-mass spectrometry (GCMS). The results showed that the flower visitors mainly belong to Hymenoptera, Diptera, Lepidoptera and Coleoptera. Among them, visitors of Compositae were mainly Diptera insects, visitors of Rosaceae and Umbelliferae were mainly Coleoptera insects, and visitors of Leguminosae were mainly Hymenoptera insects. The components of the ethanol extracts from flowers of Compositae, Rosaceae, Umbelliferae, Leguminosae and Onagraceae did not show remarkable specificity. The main substance was acids, followed by ketones and esters compound. All eleven ethanol extracts contain 1-hydroxyacetone, acetic acid, formic acid, (Z, Z)-9,12-octadecadienoic acid and phenol.

Keywords: nectar source plant floral scent flower visitor GCMS Changbai mountain region

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