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## 茶学研究专题

### 本期导读

#### ► 学术文献

1. 半翅目和鞘翅目昆虫的振动：害虫管理中的行为和应用
2. 叶蝉振动二重奏的发送——接收动力学
3. 交配物种的配偶识别：雄性和雌性振动信号的作用
4. *Dalbulus*叶蝉（同翅目：蝉科）的发声和交配行为

#### ► 相关专利

1. 含有茺荑油或肉桂油的害虫防治组合物
2. 一种改进的果树（特别是葡萄）处理方法和声音扩散系统

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## 学术文献

### 1. Vibrations in hemipteran and coleopteran insects: behaviors and application in pest management (半翅目和鞘翅目昆虫的振动: 害虫管理中的行为和应用)

简介: Many groups of insects utilize substrate-borne vibrations for communication. They display various behaviors in response to vibrations in sexual and social communication and in predator-prey interactions. Although the number of reports on communication and behaviors using vibrations has continued to increase across various insect orders, there are several studies of the exploitation of vibrations for pest management in Hemiptera and Coleoptera. Here, we review the studies of behaviors and communication using vibrations in hemipteran and coleopteran insects. For instance, pentatomid bugs display species- and sex-specific vibrational signals during courtship, whereas cerambycid beetles show startle responses to vibrations in the context of predator-prey interactions. Concepts and case studies in pest management using vibrations—especially regarding the disruption of communication and behavior—are also presented.

来源: Applied Entomology and Zoology 期刊

发布日期: 2019-02-20

全文链接: <http://agri.ckcest.cn/file1/M00/00/01/Csgk0V1AD6CAe4TmABH5fdjPM84286.pdf>

### 2. Sender-receiver dynamics in leafhopper vibrational duetting (叶蝉振动二重奏的发送——接收动力学)

简介: A coordinated reciprocal exchange of acoustic signals (duetting) is common in arthropods relying on substrate-borne vibrational signalling. Communication between partners is under evolutionary pressures resulting from ecological and sexual selection and reciprocal effects arising from such dynamic interactions may influence the sender's and receiver's mating success. We investigated the influence of female reply duration on male mate-searching effort in the leafhopper *Aphrodes makarovi* in which the female reply is essential for successful location of the female. In a duet, the beginning of a female reply overlaps the end of the male call and males evaluate only the nonoverlapped duration of the female reply. In playback experiments we varied the duration of female replies within the natural range. The duration of a female reply was negatively correlated with the male calling effort. By increasing her reply duration a female may significantly reduce the male's direct and indirect costs associated with signalling and searching, thus, ultimately, affecting male reproductive success. Males showed high adaptability in signalling behaviour and when female replies were short, searching males shortened the last section of their advertisement calls. This strategy allows the nonoverlapped part of the female reply to be longer irrespective of its overall duration. Despite its deceptively simple form, vibrational duetting may entail more complex interactions than just temporal coordination.

来源: Animal Behaviour 期刊

发布日期: 2016-04-20

全文链接: <http://agri.ckcest.cn/file1/M00/00/01/Csgk0V1AAyWAUXF5AA5CprAWdgU234.pdf>

### 3. Mate recognition in duetting species: the role of male and female vibrational signals (交配物种的配偶识别: 雄性和雌性振动信号的作用)

简介: In sexual communication, partners often form a duet, an exchange of species- and sex-specific signals, and in such systems mate recognition is likely to be reciprocal. We studied the role of vibrational signals in reproductive isolation in the genus *Aphrodes* (Hemiptera: Cicadellidae) in which mate recognition is based on highly divergent male advertisement calls and similar female replies. We first determined in playback experiments the preferences of females of four *Aphrodes* species to conspecific and heterospecific male advertisement calls as well as to species-specific elements in these calls. Females of all four species responded preferentially to calls of conspecific males; however, male calls composed of similar elements played only a limited role in mate recognition. In particular, females of *Aphrodes aestuarina* and *Aphrodes bicincta* showed higher responsiveness to each other's male calls than to calls of other species. In this species pair we further examined the role of female signals and duet structure in assortative mating using 'no-choice' mating experiments. The generally higher responsiveness of *A. aestuarina* females to male calls of *A. bicincta* did not translate into higher mating success in this heterospecific cross; lengthy replies of *A. aestuarina* females resulted in a breakdown of a complex species-specific duet structure and associated difficulties in locating the female reduced the probability of heterospecific mating. Our study shows that in mating systems based on a duet, males may contribute more than females to sexual isolation between species. Males' contribution to assortative mating may stem not only from mate recognition but also from inability to locate the source of the heterospecific female reply.

来源: Animal Behaviour 期刊

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全文链接: [http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F0\\_96WAQJ9bABX0DV8-bMo524.pdf](http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F0_96WAQJ9bABX0DV8-bMo524.pdf)

### 4. Acoustic and Mating Behavior of *Dalbulus* Leafhoppers (Homoptera: Cicadellidae) (*Dalbulus* 叶蝉 (同翅目: 蝉科) 的发声和交配行为)

简介: The acoustic repertoire and mating behavior of *Dalbulus* leafhoppers were studied in the laboratory. Acoustic signals were recorded via microphone and tape recorder, and analyzed sonographically and oscillographically. Male common calls of 10 *Dalbulus* spp. were compared using duration and rate measurements of call parts (sections, phases, and pulses), amplitude ratios of pulses, and dominant frequencies. Call types were characteristic based on repeated measures analysis of variance followed by Scott-Knott mean separation. Common calls had significant variations among species but no one acoustic variable uniquely identified a species. A multivariate hierarchical cluster analysis of calls partitioned *Dalbulus* species into three groups: 1) *D. quinquenotatus* DeLong & Nault and *D. chiapensis* Triplehorn & Nault; 2) *D. longulus* DeLong, *D. guevarai* DeLong, and *D. elimatus* (Ball); 3) *D. maidis* (DeLong & Wolcott), *D. chariest* Triplehorn & Nault, *D. tripsacoides* DeLong & Nault, *D. gelbus* DeLong, and *D. guzmani* DeLong & Nault. With the exception of *D. guzmani*, groupings of species based on male common calls are similar to groupings of species based on cladistic analysis of morphological characters. Beside common calls, *Dalbulus* males produce courtship calls,

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copulatory calls, rivalry calls, and distress calls. Courtship calls were recorded from *Dalbulus* females. The basic pattern of courtship and copulation for *Dalbulus* leafhoppers is described.

来源: Annals of the Entomological Society of America 期刊

发布日期: 1986-07-01

全文链接: [http://agri.ckcest.cn/file1/M00/00/01/Csgk0V0\\_YiATDr1ACMfEq7qav0197.pdf](http://agri.ckcest.cn/file1/M00/00/01/Csgk0V0_YiATDr1ACMfEq7qav0197.pdf)

## ➤ 相关专利

### 1. Composition for controlling pest containing *Coriandrum sativum* oil or *Cinnamomum cassia* oil (含有芫荽油或肉桂油的害虫防治组合物)

简介: The present invention relates to a composition for pest control which shows a pest control effect for stored product insects and brown wing leafhoppers. More specifically, the present invention relates to a composition for pest control containing *Coriandrum sativum* oil or *Cinnamomum cassia* oil.

来源: 韩国专利

发布日期: 2018-11-26

全文链接: <http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F0-ufuADoBtAAT39EMDBq8186.pdf>

### 2. Improved method and system for the treatment of fruit plants, in particular *Vitis vinifera*, with a sound diffusion system (一种改进的果树(特别是葡萄)处理方法和声音扩散系统)

简介: 一种用于促进果实植物特别是葡萄 (*Vitis Vinifera* L.) 生长的方法, 即由布置在葡萄园内并沿着葡萄藤生长位置安装的多个扬声器组成的声音扩散系统, 以产生声波进而产生声学应力, 从而获得改善果树生理和昆虫性质的效果。本发明的方法使果实植物经受声音频率胁迫, 从生理学和昆虫学观点获得对植物生长的改善作用, 同时减少了农药的使用和相应的植物检疫处理。

来源: 西班牙专利

发布日期: 2017-08-30

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