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## 茶学研究专题

### 本期导读

#### ▶ 前沿资讯

1. 中国移动委托BBC工作室演播电视剧《一杯茶，一千个故事》
2. 创新机器人降低茶叶加工的劳动力成本

#### ▶ 学术文献

1. 昆虫的声信号：生殖障碍和分类学特征
2. 茶生态系统中的农药使用模式、回顾和替代措施
3. 昆虫二重奏：潜在的机制及其演变
4. 吡虫啉的光降解

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## ▶ 前沿资讯

### 1. China Mobile Commissions BBC Studios TV Series: ‘One Cup, A Thousand Stories’ (中国移动委托BBC工作室演播电视剧《一杯茶，一千个故事》)

简介: BBC Studios has won its first fully funded production commission in China, a six-part series for China Mobile telling the remarkable story of tea and its impact on China and other civilizations around the world. The fact-based documentary One Cup, A Thousand Stories is funded by Migu, the digital content subsidiary of China Mobile. It is the BBC's first fully-funded production in China. It will be produced in Scotland and distributed internationally by BBC Studios. In a BBC release, One Cup is said to “tell the story of tea and its impact on China and other civilizations around the world. It will look at tea on a scale never attempted before, journeying across the beautiful and varied landscapes of China to explore its many teas, the people who have built a life around it and the culture it has created. It will reveal how tea has influenced Chinese lifestyles and rituals, including food and concepts of medicine and health and how tea sits at the heart of Chinese traditions, attitudes, friendships and family ties, bringing different generations together and even the nation. The series will also seek to tell the story of tea's influence on other countries and China's role in the global tea culture.”

来源: World Tea News 网站

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全文链接: <http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F0-TfGAei6KAAacPqbqJR4738.pdf>

### 2. Innovative Robotics Reduce Labor Costs for Tea Processing (创新机器人降低茶叶加工的劳动力成本)

简介: 上个月, 浙江茶叶集团成立了环球特色茶叶中心, 这是一个现代化的茶叶加工设施中心, 总生产能力超过1000吨茶叶。一项核心创新是机器人技术, 它可以加速手工操作, 提高安全性和质量。浙江茶叶集团美国子公司Firsd tea的营销总监贾森·沃克(Jason Walker)写道: “茶叶行业是一个劳动密集型行业——从采摘到加工再到包装。”他解释说: “虽然自动化可能在安全/质量方面带来好处, 但更公认的好处是减少了劳动力。”沃克说: “过去, 每天至少需要20个人来准备、打包和装载一个40英尺高的集装箱, 现在只需要6个人。新工厂的自动化和机器人技术大大减少了所需的繁重劳动”。自动化生产线被描述为大规模、连续的加工。茶叶原料是手工装入生产线, 然后由自动化接管。该生产线可进行杀绿、炒青、成叶、烘干及成品包装。

来源: World Tea News 网站

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全文链接: <http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F0-V3yATqi9AAWqrSiv6ds733.pdf>

## ▶ 学术文献

### 1. Acoustic Signals in Insects: a Reproductive Barrier and a Taxonomic

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## Character (昆虫的声信号：生殖障碍和分类学特征)

简介：In singing insects, the song is an important component of the specific mate recognition system (SMRS). In communities of sympatric singing species, there is a partitioning of communication channels, the so-called “acoustic niches.” Within one community, the songs of different species always differ in temporal or frequency characters, i.e. occupy different acoustic niches. However, conspecific songs do not always act as an interspecific reproductive barrier, despite always being a SMRS component. The species that do not communicate acoustically due to allopatry, different timing of vocalization, inhabiting different biotopes, or unmatched food specializations can produce similar songs while forming reproductively isolated communities. Individuals of different sexes need not only to recognize a conspecific mate but also to evaluate its “quality.” The close-range signal (courtship song) provides more opportunities for choosing the “best” male than does the distant signal (calling song). In many species of Orthoptera, courtship includes not only acoustic but also vibrational, visual, chemical, and mechanical signals. An analysis of cricket songs showed the courtship songs to be on average more elaborate and variable than the calling songs. At the same time, due to the difference in mating behavior between the two groups, the acoustic component of courtship is used for mate quality evaluation to a greater extent in grasshoppers than in crickets. The courtship songs of grasshoppers are generally more elaborate in temporal structure than cricket songs; moreover, they may be accompanied by visual displays such as movements of various body parts. Thus, song evolution in grasshoppers is more strongly driven by sexual selection than that in crickets. According to the reinforcement hypothesis, the premating barrier between hybridizing species becomes stronger in response to reduced hybrid fitness. However, our behavioral experiments with two groups of hybridizing grasshopper species did not confirm the reinforcement hypothesis. We explain this, firstly, by a low level of genetic incompatibility between the hybridizing species and secondly, by high hybrid fitness when attracting a mate. A high competitive capability of hybrids may be accounted for by attractiveness of new elements in hybrid courtship songs. When we divide similar forms based on their songs, we in fact distinguish biological species using the criterion of their reproductive isolation. Acoustic differences between species are usually greater than morphological ones. Therefore, song analysis allows one to determine the real status of doubtful species-rank taxa, to distinguish species in a medley of sibling forms, and to reveal cryptic species in the cases when morphological studies fail to provide a univocal result. At the same time, songs are subject to intraspecific variation the range of which is different in different groups. Therefore, it is necessary to study which degree of difference corresponds to the species level before interpreting the status of some forms based on song comparisons. Besides, song similarities cannot indicate conspecificity of acoustically isolated forms; on the other hand, song differences between these forms prove that they are full-rank species.

来源：Entomological Review 期刊

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全文链接：<http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F06xV-ACUSuAD7ffzAHy9Y103.pdf>

## 2. Pesticide usage pattern in tea ecosystem, their retrospects and alternative measures (茶生态系统中的农药使用模式、回顾和替代措施)

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**简介:** In recent years there has been a greater dependence on the use of pesticides (7.35-16.75 kg $ha^{-1}$ ) with little importance laid on other safe control methods for the management of tea pests. Due to this practice, the tea pests showed a higher tolerance/ resistance status due to formation of greater amount of f esterases, glutathione S-transferase and acetylcholinesterase. Thus, over reliance on pesticides end up with pesticide residue in made tea ( DDT -10.4 – 47.1%; endosulfan - 41.1 – 98.0%; dicofol - 0.0 – 82.4%; ethion - 0.0 – 36.2%; cypermethrin - 6.0 - 45.1%). The growing concern about the pesticide residue in made tee, its toxicity hazards to consumers, the spiraling cost of pesticides and their application have necessitated a suitable planning which will ensure a safe, economic as well as effective pest management in tea. At present it is a global concern to minimize chemical residue in tea and European union and German law imposed stringent measures for the application of chemicals in tea and fixed MRL values at <0.1 mg $kg^{-1}$  for the most commonly used pesticides which will not be met out in the real practice and has been a major constraint to tea exporting countries like India. In order to regulate the situation of the Indian market at global level, central insecticide board and prevention of food adulteration regulation committee have reviewed the MRL position for tea and has recommended 10 insecticides, 5 acaricides, 9 herbicides and 5 fungicides for use in tea and issued the tea distribution and export control order 2005 which will help the country to limit the presence of undesirable substances in tea.

**来源:** Journal of Environmental Biology 期刊

**发布日期:** 2008-11-20

**全文链接:** <http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F06ug-AYhn0AAKEGAqdb3w068.pdf>

### **3. Insect duets: underlying mechanisms and their evolution (昆虫二重奏: 潜在的机制及其演变)**

**简介:** Duetting between the sexes in insects involves the use of airborne acoustic signals, substrate vibration and bioluminescence. Unlike avian duets, in which females may initiate the interaction, among insects the duet starts with the male, and the female usually provides a brief reply. Insect duets are characterized by low variance in the reply latency of the female (the time between a key element in the male call and the onset of the female's response). Duetting is reviewed principally in Orthoptera but also in Plecoptera, Hemiptera, Neuroptera and bioluminescence in the Coleoptera. The mechanisms of the duet are examined first, followed by evolution and the associated change in searching strategies of each sex. As defined, the duet has distinct temporal characteristics and these are compared with acoustic interactions among males in those species that exhibit male-male synchrony and alternation. For insects, the key element of a duet for species' recognition is low variance in the reply latency of females. In cases in which the male's initiating signal is extremely short, reply latencies become indicators of species' recognition. However, in those species in which the initiating male call is under selection through female choice, the male call is predictably longer and occasionally more complex. Under these circumstances, reply latencies often increase, creating an opportunity for alternative male tactics. When alternative tactics exist in nature, males may decrease the intensity of their call, insert a trigger pulse that signals to the female the end of its complex call, or males may even add a masking signal that obscures the competing signal.

来源: Physiological Entomology 期刊

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全文链接: <http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F06wvWAPUV-AAOw16mP9V4140.pdf>

#### 4. Photodegradation of Imidacloprid (吡虫啉的光降解)

简介: The photolytic decomposition of the insecticide imidacloprid (1) in HPLC grade water and of imidacloprid as the formulated product Confidor insecticide in tap water was studied using HPLC methodology. The structures of several degradates have been determined in aquatic medium, and the DT<sub>50</sub> values of imidacloprid and Confidor have been measured. In addition, the influence of TiO<sub>2</sub> on the photodegradation of Confidor was studied. The photoproduct 1-(6-chloro-3-pyridinyl) methyl-2-imidazolidinone (5) has been identified as the main degradate in each of the three series of experiments by several analytical techniques. The photolytic half-lives for imidacloprid under the conditions of this study were 43 min in HPLC grade water, 126 min formulated as Confidor in tap water, and 144 min formulated as Confidor in tap water in the presence of TiO<sub>2</sub>.

来源: Journal of Agricultural and Food Chemistry 期刊

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全文链接: <http://agri.ckcest.cn/file1/M00/06/8C/Csgk0F06vh-AZaHxAADlikcp8Ms680.pdf>