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中国农业科学院农业信息研究所

联系人: 王玉芹

联系电话: 010-82109896

邮箱: agri@ckcest.cn

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▶ 前沿资讯

1. US League of Tea Growers Pioneers Collaborate for Industry Success (美国茶叶种植者联盟先锋合作促进行业成功)

简介: Elizabeth Miller leads more than 25 fellow tea growers into her small nursery, pointing out young plants in various stages of development. She explains the successes and setbacks she has experienced growing tea in Oregon's Willamette Valley. The visit to Miller's Minto Island Tea Company is a featured event during a recent annual meeting of the US League of Tea Growers (USLTG), an 85-member organization established in 2013. Some members are hobbyists, others operate commercial tea production facilities. They all have one thing in common: a passion to grow specialty tea in their own locales. So, members traveled to Oregon from across the country to share ideas and discover which techniques may work back home. Part of that effort means staying informed on all aspects of tea cultivation and production. To that end, the group is considering organizing its 2020 annual meeting to coincide with the Global Tea Initiative's colloquium on tea and wine scheduled on Jan. 16-17 at the Robert Mondavi Institute for Wine and Food Science on the campus of the University of California, Davis. Members also are encouraged to follow and provide public comment on programs such as the California Department of Food and Agriculture's Special Crop Block Grant Program. University researchers also speak at league meetings. The league of tea growers is in position to help establish those standards, create good teas and develop regional flavor profiles.

来源: World Tea News 网站

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全文链接: <http://agri.ckcest.cn/file1/M00/0E/7E/Csgk0F1T3t-AOL4mAAif9czHZv8296.pdf>

2. Extreme Weather Threatens Australia's Coast Hugging Tea Farms (极端天气威胁着澳大利亚沿海的茶场)

简介: 随着澳大利亚茶叶丰收的准备工作开始, 澳大利亚最大的茶叶生产商Nerada Tea只是几个遭遇极端天气的农场之一。南半球现在是冬天, 气象局报告说, 出现了异常猛烈和破坏性的霜冻。7月的一场风暴带来了时速125公里的大风, 这是南极空气从南大洋向北喷射的结果。春收从9月1日持续到11月, 第一波春潮和北方茶园3月的春收一样珍贵。Nerada茶园园长Tony Poyner在接受《每日新闻》采访时说, 在过去的12个月里, 严重的霜冻和长时间干旱已经摧毁了昆士兰州北部的茶园, 毁掉了近50%的红茶产量。据Poyner说, 恶劣的天气条件和由此导致的农作物破坏已经使这个位于凯恩斯附近Atherton高原的360公顷农场损失了近100万澳元。

来源: World Tea News 网站

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学术文献

1. The tea leaf microbiome shows specific responses to chemical pesticides and biocontrol applications (茶叶微生物群落对化学杀虫剂和生物防治应用具有特异性反应)

简介: The plant microbiome is known to be influenced by certain biotic as well as abiotic factors. Nevertheless, the drivers for specific changes in microbial community composition and structure are largely unknown. In the present study, the effects of chemical and biological treatments for plant protection on the indigenous microbiome of *Camellia sinensis*(L.) Kuntze were contrasted. Assessment of bacteria-specific ribosomal RNA gene fragment amplicons from a representative set of samples showed an increased microbial diversity in treated plants when compared to untreated samples. Moreover, distinct microbial fingerprints were found for plants subjected to a conventional pesticide treatment with lime sulfur as well as for plants that were biologically treated with a *Piriformospora indica* spore solution. The bacterial community of pesticide-treated plants was augmented by 11 taxa assigned to *Proteobacteria* and *Actinobacteria*. In contrast, plants from biological control treatments were augmented by 10 taxa representing a more diversified community enrichment and included members of *Actionobacteria*, *Proteobacteria*, *Bacteroidetes*, *Planctomycetes*, and *Verrucomicrobia*. Complementary, molecular quantification of fungi in the samples showed a significantly lower number of internal transcribed spacer copies in plants subjected to biological control treatments, indicating the highest efficiency against fungal pathogens. The overall results show that leaves that are used for tea production show distinct microbiome shifts that are elicited by common pest and pathogen management practices. These shifts in the microbial population indicate non-target effects of the applied treatments.

来源: Science of The Total Environment 期刊

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全文链接:<http://agri.ckcest.cn/file1/M00/0E/7D/Csgk0F1QyX-APuYrAB8oEzVgahM832.pdf>

2. Spider foraging strategies dominate pest suppression in organic tea plantations (蜘蛛觅食策略主导有机茶园的害虫抑制)

简介: Organic management of crops generally leads to greater predator richness. However conservation of natural enemy species richness does not consistently strengthen herbivore suppression. Here we explored relationships between abundance and diversity of predatory spiders with two distinct foraging strategies and their prey, leafhopper pests. In three organic tea plantations, we investigated abundance of these spiders, and population dynamics of an important tea green leafhopper pest, *Empoasca vitis* (Homoptera: Cicadellidae). We found that abundance and diversity of actively hunting spiders were significantly negatively correlated with leafhopper pest populations, but sit-and-wait spiders were not. The latter may have been limited by intraguild predation or other trophic interactions. Furthermore, there was no significant correlation between total spider and leafhopper numbers. Our study thus suggests that predator foraging strategy might be a key functional trait that can help to explain variation in pest suppression in agricultural systems.

来源: BioControl 期刊

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全文链接:<http://agri.ckcest.cn/file1/M00/OE/7D/Csgk0F1Qu7SAb2H3AAfDkM7MjYA476.pdf>

3 . Behavioral response of *Graminella nigrifrons* (Homoptera: Cicadellidae) to experimentally manipulated vibrational signals (*Graminella nigrifrons* (同翅目: 叶蝉科)对实验操纵振动信号的行为反应)

简介: Mate recognition for the leafhopper *Graminella nigrifrons* (Forbes) occurs when a male spontaneously emits a multisectional vibrational calling song to which females respond by emitting simple pulses. Significant differences were found among males in the duration, number of chirps, and chirp rate within sections of the song and the total song. Repeatability (proportion of total variation due to differences among males) of call features ranged from very low (0.04 for total chirps in song) to high (0.67 for section 3 chirp rate). However, song modification and playback experiments revealed that the variation in the measured song features was not important in determining whether a female will respond. Rather, female response depended only on the presence of two of the three types of pulses which comprise a chirp. These "essential" pulses were found within chirps of all call sections that contain chirps. Manipulation of chirp rates from 0.58 to 2.70 times the normal rate did not affect female response, nor did changing the period of silence between the "essential" pulse types from 0.25 to 1.75 times the normal period. These results suggest that components of the male calling song function in mate recognition but are not used by females to discriminate among conspecific males.

来源: Journal of Insect Behavior 期刊

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http://agri.ckcest.cn/file1/M00/00/01/Csgk0V1A-32ARVY4AAryfAT_I3Q087.pdf

4. Insect Disturbance Stridulation: Characterization of Airborne and Vibrational Components of the Sound (昆虫干扰鸣声频率: 声音的空气传播和振动成分的特征)

简介: Some insects stridulate when attacked by a predator. This behavior is interpreted as a defensive response, the sound being a warning to predators of the insect's noxiousness. Since to humans many such disturbance sounds are audibly similar, it is possible that they may in fact be mutually mimetic. This idea was investigated through analysis of the temporal and spectral characteristics of the disturbance sounds of a variety of insects that stridulate by a file-and-scraper device. Properties of both the airborne sound and the underlying cuticular vibration (detected by a special vibration measuring instrument) were examined, and 4 characteristic features were found. The temporal pattern is simple. Bursts of tooth-strike impulses are about 80 ms long, and are separated by pauses about 90 ms long. Bursts occur at a rate of about 5 to 10/s. The temporal pattern is irregular. For tooth strike interval, burst duration, pause duration and interburst interval, the SD is usually > 30% of the mean. Much of the irregularity is caused by the insect struggling at the same time it stridulates. Some insects show less variability, and these appear to lack tight coupling between stridulatory movements and struggling movements, so struggling does not

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interfere with stridulation. The airborne sound pressure waveform is impulsive. The frequency coverage of the sounds is quite broad with an average 10 dB bandwidth of about 40 kHz centered at 25 kHz. The sounds are not intense, ranging from about 10-60 dB (re 20×10^{-6} Pa) at 10 cm. The cuticular vibration waveform is sharply peaked and contains maximum energy at a frequency determined by the tooth-strike rate, usually about 1 kHz. The average decrease in power above this frequency is about 12 dB/octave. The maximum peak-to-peak amplitude of cuticular motion is about 1 to 10 μm . These common characteristics may lead predators to treat insects producing disturbance sounds similarly, although this possibility should be tested. If acoustic mimicry exists, the communicatory interchange between predator and prey may be subtler than is commonly appreciated.

来源: Journal of Comparative Physiology A 期刊

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全文链接: http://agri.ckcest.cn/file1/M00/0E/7D/Csgk0F1QxmWAU-5OABc_a7OVyh8968.pdf