



2019年第26期 总179期

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## ▶ 前沿资讯

### 1. Chinese Tea Quality Director Explains “Zero-Growth” Action Plan for Pesticides and Fertilizer (中国茶叶质量总监解释农药和化肥“零增长”行动计划)

**简介:** 中国茶叶质量控制项目主任描述了一个以统一清洁茶叶为目标的转型产业。中国国家茶叶质量监督检验中心主任郑国建告诉世界茶叶报，中国7%的茶叶种植面积现在符合日本、欧盟和美国国家有机食品计划对有机茶的出口要求。一级茶园是有机认证的，他解释说：“中国将茶园按照中心制定的标准分为三个等级。一级茶园认证非常严格，不允许使用农药和化肥”。去年有机食品的产量为1.82亿公斤，在过去的十年里，这个数字有了显著的增长。2015年2月，中国实施了“零增长”行动计划，到2020年规范化肥和农药的使用。其目标是消除“过度施肥和盲目施肥，导致成本增加和环境污染”。改进施肥方法，提高肥料利用率已迫在眉睫。在中国其余43%的茶园里，农民使用传统的技术，即使用化肥和杀虫剂。中国计划到2020年，将这些土地上用于防除杂草和害虫的植物保护化学品减少20%，化肥减少50%。

**来源:** World Tea News 网站

**发布日期:** 2019-06-18

**全文链接:** <http://agri.ckcest.cn/file1/M00/06/80/Csgk0F0Mf9WAa1tCAAhYwLlgrFk513.pdf>

### 2. Premium Instant Tea Company Gets \$2.5 Million Financial Boos (美国优质速溶茶公司获得250万美元的财政支持)

**简介:** Investors recently provided a \$2.5 million boost to expand distribution and development of Boulder, Colo.-based Cusa Tea. The Series A round, led by Break Trail Ventures and S Cap, brings total financing to \$3.6 million. Cusa organic tea uses real fruit and spices to cold-steep tea before it is transformed into powder that is packaged as 10 single sticks. Packs sell for \$9.99. Flavors include traditional teas such as organic oolong and organic green tea as well as blends that include English breakfast, mango green, lemon black, chai and peach.

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## ▶ 学术文献

### 1. Identification and quantification of key odorants in the world's four most famous black teas (世界四大名茶中主要气味物质的鉴别与定量)

**简介:** Keemun, Assam, Darjeeling and Ceylon black teas are honored as the world's four most famous black teas, and their excellent aroma qualities are well received by people around the world. In this study, aroma components in these four types of teas were analyzed by comprehensive two-dimensional gas chromatography time-of-flight mass spectrometry (GC×GC-TOFMS) and gas chromatography-olfactometry (GC-O) technologies. A total of 42

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aroma-active compounds were ultimately identified, especially benzeneacetaldehyde, geraniol, (Z)-3-hexen-1-yl hexanoate, *trans*- $\beta$ -ionone, cis-linalool oxide (pyranoid), hotrienol, and methyl salicylate presented the strongest aroma strengths with pleasant scents in all tested teas. The quantification results indicated that 19 compounds including (Z)-3-hexenol, 1-octen-3-ol, linalool, phenylethyl alcohol, hexanal, benzeneacetaldehyde, limonene, heptanoic acid, (Z)-3-hexen-1-ol, acetate, benzyl alcohol, *trans*-linalool oxide (furanoid), hotrienol, 1-octen-3-one, 2-nonanone, (E)-2-octenal, nonanal,  $\beta$ -myrcene, 2-pentylfuran, and methylpyrazine were identified as the key compounds with odor activity values (OAVs) higher than 1.0 in the world's four most famous black teas. Notably, the comparison of GC-O and OAV calculation results showed that methyl salicylate (Ceylon), (E)-2-octenal (Assam), benzeneacetaldehyde (Keemun) and linalool and *trans*-linalool oxide (furanoid) (Darjeeling) might be the most definitive odorants in the corresponding tea categories.

来源: Food Research International 期刊

发布日期: 2019-07-02

全文链接: <http://agri.ckcest.cn/file1/M00/06/71/Csgk0F0HS1eAZOveACQwKN6uwTE298.pdf>

## 2. Cues from chewing insects — the intersection of DAMPs, HAMPs, MAMPs and effectors (来自咀嚼昆虫的线索: DAMPs、HAMPs、MAMPs和效应器的交集)

简介: Chewing herbivores cause massive damage when crushing plant tissues with their mandibles, thus releasing a vast array of cues that may be perceived by the plant to mobilize defenses. Besides releasing damage cues in wounded tissues, herbivores deposit abundant cues from their saliva, regurgitant and feces that trigger herbivore specific responses in plants. Herbivores can manipulate the perception mechanisms and defense signals to suppress plant defenses by secreting effectors and/or by exploiting their associated oral microbes. Recent studies indicate that both the composition of herbivore cues and the plant's ability to recognize them are highly dependent upon the specific plant-herbivore system. There is a growing amount of work on identifying herbivore elicitors and effectors, but the most significant bottleneck in the discipline is the identification and characterization of plant receptors that perceive these herbivore-specific cues.

来源: Current Opinion in Plant Biology 期刊

发布日期: 2015-08-20

全文链接: <http://agri.ckcest.cn/file1/M00/06/7B/Csgk0F0HVMKAYUrPAAg6OMFn0Jg195.pdf>

## 3. Plants on early alert: glandular trichomes as sensors for insect herbivores (早期警报的植物: 腺毛体作为食草昆虫的传感器)

简介: The ability of caterpillar or moth 'footsteps' to elicit defenses in the tomato (*Solanum lycopersicum*) plant was examined. Although touch responses frequently have been observed in plants, the role of herbivore 'touch' in eliciting antiherbivore defenses has not been adequately examined. A combination of methods, including *in situ* hybridization, reverse transcriptase-polymerase chain reaction, quantitative real-time polymerase chain reaction and gas chromatography-mass spectrometry, was used to determine the role of trichomes in mediating

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these touch responses. Mutants compromised in jasmonic acid and glandular trichomes were used to test whether both of these were required for these touch responses. We demonstrated that the rupture of foliar glandular trichomes by caterpillar or moth contact induced the expression of defense transcripts (e.g. proteinase inhibitor 2, or *PIN2*) regulated by jasmonic acid. Neither chewing nor the release of salivary components was required to initiate this induced response. Jasmonic acid and the genes encoding proteins involved in its biosynthesis were identified in the trichomes. Using mutants, we showed that both jasmonic acid and trichomes were required for the contact-induced expression of *PIN2*. In addition, hydrogen peroxide, formed on the leaf surface, was required for *PIN2* expression. Because these defenses would be activated before egg hatch, this early detection system for herbivores may be of considerable ecological significance.

来源: New Phytologist 期刊

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全文链接: <http://agri.ckcest.cn/file1/M00/06/80/Csgk0F0MjDmAY19yAAV0U-0cITg687.pdf>

#### 4. Design principles for orally bioavailable drugs (口服生物可利用药物的设计原则)

简介: Compound design is the hallmark of modern pharmaceutical research and development. Unfortunately, comprehensive and reliable guidelines for the introduction of favorable bioavailability properties into designed compounds remain elusive. Here, the authors discuss the limited set of design principles that address the problem of bioavailability, based on a retrospective analysis of orally bioavailable drugs. The roles of partition coefficient, molecular weight, carrier-mediated transport and conformational flexibility are evaluated. These properties are discussed as guiding principles only, and cannot be considered all-encompassing determinants of oral bioavailability.

来源: Drug Discovery Today 期刊

发布日期: 1996-05-10

全文链接: <http://agri.ckcest.cn/file1/M00/06/80/Csgk0F0MiheAKEYIABSqyYARZvc718.pdf>