

### 超敏蛋白对低温胁迫下茶树生理特性的影响

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### Effect of Harpin on Physiological Characteristics of Tea Plant Under Cold Stress

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**摘要** 超敏蛋白是一种诱导植物抗逆性的新型生物制剂。为了解超敏蛋白在低温胁迫过程中对茶树耐寒性的影响,以茶树品种‘迎霜’为试材,分别在常温和4℃下喷施超敏蛋白,研究了在低温胁迫下超敏蛋白对茶树叶片生理特性的影响。结果表明:常温下,超敏蛋白喷施的茶树叶片,在6 d内略微提高了渗透调节物质含量和抗氧化酶活性。低温胁迫下,茶树叶片中可溶性糖含量、可溶性蛋白含量、游离脯氨酸含量、丙二醛(MDA)含量、超氧化物歧化酶活性(SOD)、过氧化物酶活性(CAT)、过氧化氢酶(POD)活性均增加,叶绿素含量降低;喷施24 μg ? L<sup>-1</sup>超敏蛋白后,低温下可在6 d内提高茶树叶片叶绿素、可溶性蛋白、可溶性糖、游离脯氨酸的含量,提高SOD、CAT、POD活性,从而缓解低温胁迫对茶树的伤害,增强茶树耐寒性。试验表明,喷施一定浓度的超敏蛋白可以有效提高茶树的耐寒性。

**关键词:** 茶树 超敏蛋白 低温胁迫 生理生化指标

**Abstract:** Harpin, a new kind of elicitor protein, can increase the tolerance of plant. To understand the effects of harpin on the tea plant [*Camellia sinensis* (L.) O. Kuntze] under cold stress, The cultivar ‘Yingshuang’, was used as the material and treated with harpin at room temperature and 4 °C, and then the physiological and biochemical indicators were determined. The results showed that osmotica content and antioxidant enzyme activity increased slightly within 6 days in the samples, which have been treated with harpin at room temperature. The contents of soluble protein, soluble sugar, proline and malondialdehyde (MDA), as well as the activities of superoxide dismutase (SOD), catalase (CAT) and peroxidase (POD), increased as extending the cold treatment time. However, the chlorophyll content decreased. Prudent use of harpin (24 μg ? L<sup>-1</sup>) increased the contents of chlorophyll, soluble protein, soluble sugar and proline, simultaneously increased the activities of SOD, CAT and POD within 6 days. These results imply the injury of tea plants under cold stress can decline by the use of harpin, thus enhancing the cold resistant ability of tea plant.

**Keywords:** tea plant, harpin, cold stress, physiology and biochemistry index

收稿日期: 2013-10-05; 出版日期: 2014-02-20

#### 引用本文:

超敏蛋白对低温胁迫下茶树生理特性的影响[J] 园艺学报, 2014, V41(4): 746-754

.Effect of Harpin on Physiological Characteristics of Tea Plant Under Cold Stress [J] ACTA HORTICULTURAE SINICA, 2014, V41(4): 746-754

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