

Effects of wild plants, cultivated season, and watering frequency on the antioxidant activity of *Spiranthes sinensis* (Pers.) Ames¹

Chi-Cheng Chen² Hsiao-Chien Chao³ Shu-Yuan Chiou⁴ Chin-Tsun Chen⁵
Pei-Rong Hung⁶

Abstract

In this study, we compare the antioxidant activity of wild collected, summer cultivated and winter cultivated plants of *Spiranthes sinensis* (Pers.) Ames, as well as effects of watering frequency. The results showed that total phenolic content, DPPH and ABTS radical scavenging activity of cultivation for 15 month were better than that of cultivation for 5.5 months and wild plant. The highest flavonoids content is in wild plants, followed by cultivation for 15 months. Concentration of total phenolic, flavonoids, as well as DPPH and ABTS radical scavenging activities in leaf were higher than that in roots. DPPH and ABTS radical scavenging activities of leaves cultivated in summer and autumn were higher than these growing in winter and spring. In contrast, the antioxidative reactivity of roots growing during winter and spring was higher than growing during summer and autumn. The longer the watering interval was, the worse the plants grew. However, DPPH and ABTS radical scavenging activity of roots was enhanced by reducing watering frequency.

Keywords: phenolic, DPPH, ABTS, water stress

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1. Research Article No.272 of Hualien District Agricultural Research and Extension Station.
 2. Researcher, Lan-Yang Branch Station, Hualien DARES.
 3. Contract-based assistant, Lan-Yang Branch Station, Hualien DARES.
 3. Associate Researcher, Crop Environment Section, Hualien DARES.
 4. Contract-based assistant, Crop Environment Section, Hualien DARES.
 6. Former Contract-based assistant, Lan-Yang Branch Station, Hualien DARES.