

The Effects of the Cultivated Area and Growth Stage on the Yield and Quality of *Angelica acutiloba*¹

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Abstract

The purpose of this research was to study the effects on the yield, quality and active ingredient in different cultivated areas and different growth days of *Angelica acutiloba*. The characteristics of *A. acutiloba* were measured and compared for five different cultivated areas of Hualien. In comparison of the average plant weight, root weight and root width for *A. acutiloba*, the highest value was found from the roots cultivated in Yi-li area. The highest content of active ingredient of ferulic acid and Z-liguistilide was also found from roots cultivated in Yi-li area. In comparison on the agronomic traits of the roots at different growth days, the growth days of 205 days had the highest value in plant height, root weight and root width. The roots at growth days of 205 days had the highest ferulic acid content in *A. acutiloba*, while roots of 160 days had the highest Z-liguistilide content in *A. acutiloba*. In addition, roots of 235 days had the highest anti-oxidant capacity in *A. acutiloba*. The roots morphology, yield, active ingredient content and quality are good at growth days of 205 days, and then is the blossom stage in *A. acutiloba*. Therefore, the initial blossom stage is the root harvest suitable time, it will be as the reference of field cultivation harvest in *A. acutiloba* for the farmers.

Key words: *Angelica acutiloba*, yield, quality, active ingredient.

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