

The effects of planting density and cropping practice on yield and active ingredient content of *Salvia miltiorrhiza*¹

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Abstract

The purpose of this research was to study the effects on the yield and active ingredient content at different planting densities and cropping practices of *Salvia miltiorrhiza*. In comparison on the agronomic traits of different planting densities, planting density at 100×60 cm had the highest plant height, root weight, salvianolic acid B and tanshinone IIA content. Continuous monocropping will affect the yield and active ingredient content of *S. miltiorrhiza*. The average fresh root weight per plant of *L. chinense*-*S. miltiorrhiza* rotation and *A. acutiloba*-*S. miltiorrhiza* rotation was 324 g and 307 g, and was 278 g and 189 g by two-year and three-year continuous monocropping. The salvianolic acid B of *L. chinense*-*S. miltiorrhiza* rotation and *A. acutiloba*-*S. miltiorrhiza* rotation was 63.2 mg g⁻¹ and 58.4 mg g⁻¹, and was 42.63 mg g⁻¹ and 41.5 mg g⁻¹ by two-year and three-year continuous monocropping. The tanshinone IIA of *L. chinense*-*S. miltiorrhiza* rotation and *A. acutiloba*-*S. miltiorrhiza* rotation was 2.8 mg g⁻¹ and 2.3 mg g⁻¹, and was 1.46 mg g⁻¹ and 0.54 mg g⁻¹ by two-year and three-year continuous monocropping. The rotation practice had advantages than continuous cropping in the root yield and active ingredients in *S. miltiorrhiza*.

Key words: *Salvia miltiorrhiza*, yield, planting density, cropping practice, active ingredient

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